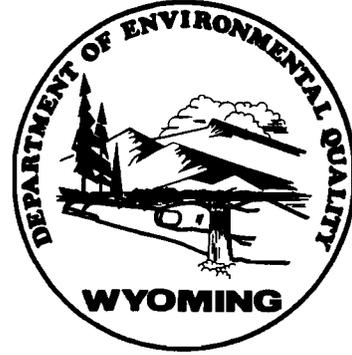


AIR QUALITY DIVISION
CHAPTER 6, SECTION 3
OPERATING PERMIT

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



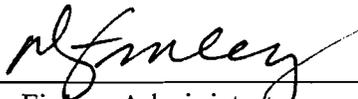
PERMIT NO. 3-0-211

Issue Date: **January 30, 2007**
Expiration Date: **January 30, 2012**
Effective Date: **January 30, 2007**
Replaces Permit No.: **N/A**

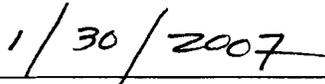
In accordance with the provisions of W.S. §35-11-203 through W.S. §35-11-212 and Chapter 6, Section 3 of the Wyoming Air Quality Standards and Regulations,

Jonah Gas Gathering Company
Falcon Compressor Station
Section 36, Township 30 North, Range 108 West,
Sublette County, Wyoming

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



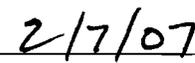
David A. Finley, Administrator
Air Quality Division



Date



John V. Corra, Director
Department of Environmental Quality



Date

WAQSR CHAPTER 6, SECTION 3 OPERATING PERMIT

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY AIR QUALITY DIVISION

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GENERAL INFORMATION

Company Name: **Jonah Gas Gathering Company**

Mailing Address: **P.O. Box 4324**

City: **Houston**

State: **Texas**

Zip: **77210-4324**

Operator Name: **Enterprise Products Operating L.P.**

Mailing Address: **P.O. Box 4324**

City: **Houston**

State: **Texas**

Zip: **77210-4324**

Facility Name: **Falcon Compressor Station**

Facility Location: **Section 36, Township 30 North, Range 108 West, Sublette County Wyoming, approximately 16 miles South of Boulder, Wyoming.**

Facility Mailing Address: **P.O. Box 2058**

City: **Pinedale**

State: **Wyoming**

Zip: **82941**

Name of Owner: **Jonah Gas Gathering Company**

Phone: **(713) 880-6500**

Responsible Official(s): **Terry L. Hurlburt
Graham Bacon**

Phone: **(713) 381-8298
(713) 381-6516**

Facility Manager/Contact: **James Wakeley**

Phone: **(307) 367-8040**

DEQ Air Quality Contact: **District 5 Air Quality Engineer
510 Meadowview Drive
Lander, Wyoming 82520**

Phone: **(307) 332-6755**

SIC Code: **1311**

Description of Process: **The Falcon Compressor Station gathers and compresses gas from surrounding gas wells. Field gas enters the liquid separation system where pipeline liquids are separated from the gas. The gas is then compressed and cooled before being sent down the pipeline. Liquids collected are stabilized to remove volatile components before being stored in tanks and transported off-site by truck. Storage tank emissions are controlled by a combustion unit. Vapors generated in the stabilizer are recycled to the inlet gas stream by a vapor recovery unit. The Hot Oil Heater provides hot oil to the stabilizer. Generating engines provide electric power for gas cooling fans and other electrical equipment. The emergency flare is used to combust gas during upsets and as needed.**

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
E-1	Caterpillar G3612LE Compressor Engine ^a	3668 hp	MD-1186
E-2	Caterpillar G3612LE Compressor Engine ^a	3668 hp	MD-1186
E-3	Caterpillar G3612LE Compressor Engine ^a	3668 hp	MD-1186
E-4	Caterpillar G3612LE Compressor Engine ^a	3668 hp	MD-1186
E-5	Caterpillar G3612LE Compressor Engine ^a	3668 hp	MD-1186
E-6	Caterpillar G3612LE Compressor Engine ^a	3668 hp	MD-1186
G-2	Onan 7.5 JB Emergency Generator	14 hp	MD-1186
G-5	Caterpillar 3516B LE Generator Engine ^a	1800 hp	MD-1186
G-6	Caterpillar 3516B LE Generator Engine ^a	1800 hp	MD-1186
VRU	Caterpillar 3406TA ^b	245 hp	MD-1186
CU-1	Combustion Unit #1	N/A	MD-1186
TK1	Condensate Storage Tank 1	400 bbl	MD-1186
TK2	Condensate Storage Tank 2	400 bbl	MD-1186
TK3	Condensate Storage Tank 3	400 bbl	MD-1186
TK4	Condensate Storage Tank 4	400 bbl	MD-1186
FL-1	Emergency Flare	N/A	None
FU1	Fugitives	N/A	None
P-1	Pneumatic Controllers	N/A	None
TL1	Condensate Loading	N/A	None
H-1	Hot Oil Heater	3.8 MMBtu/hr	None
H-2	Fuel Gas Heater	1.6 MMBtu/hr	None

^a Four stroke lean burn reciprocating internal combustion engine with an oxidation catalyst.

^b Four stroke rich burn reciprocating internal combustion engine with an AFCE and NSCR catalyst.

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)	192
Carbon Monoxide (CO)	76
Volatile Organic Compounds (VOCs)	139
HAZARDOUS AIR POLLUTANT (HAP) EMISSIONS	21.9

Emission estimates include permitted allowable emissions from permit MD-1186, emissions estimates from the associated permit analysis, and estimated emissions for the two heaters from the operating permit application.

FACILITY-SPECIFIC PERMIT CONDITIONS

Facility-Wide Permit Conditions

- (F1) FACILITY CONFIGURATION LIMITATIONS
[WAQSR Ch 6, Sec 2 Permit MD-1186 and Ch 6, Sec 3(c)(i)(B)]
- (a) The engine configuration at the Jonah Gas Gathering Company's Falcon Compressor Station shall be limited to the following:
 - (i) Six Caterpillar G3612LE engines (units E-1 through E-6) equipped with oxidation catalysts,
 - (ii) One Onan 7.5 JB emergency generator (unit G-2) limited to 500 hours per year,
 - (iii) Two Caterpillar G3516BLE engines (units G-5 & G-6) equipped with oxidation catalysts,
 - (iv) One Caterpillar G3406TA engine (unit VRU) equipped with an air to fuel ratio controller (AFRC) and a non-selective catalytic reduction (NSCR) catalyst.
 - (b) 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 the 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) FLASHING EMISSIONS AND FLARE REQUIREMENTS
[WAQSR Ch 6, Sec 2 Permit MD-1186 and Ch 3, Sec 6(b)(ii)]
- (a) Flashing emissions from the 400-barrel condensate storage tanks (units TK1 through TK4) shall be controlled by Combustion Unit #1 (unit CU-1).
 - (i) The permittee shall maintain and operate Combustion Unit #1 (unit CU-1) during all periods of active operation of the condensate tanks such that it remains effective as a viable emissions control device.
 - (ii) Combustion Unit #1 (unit CU-1) shall be equipped with thermocouple and continuous recording device or equivalent device to detect the presence of a flame.
 - (b) The emergency flare (unit FL-1), shall be equipped and operated with an automatic ignitor or a continuous burning pilot which must be maintained in good working order.
- (F3) VISIBLE EMISSIONS [WAQSR Ch 3, Sec 2, Ch 3, Sec 6(b), and Ch 6, Sec 2 Permit MD-1186]
- (a) The combustion unit #1 (unit CU-1) shall be operated and maintained to be smokeless with no visible emissions except for periods not to exceed a total of five minutes during any two consecutive hours as determined by 40 CFR Part 60, Appendix A, Method 22.
 - (b) The emergency flare (unit FL-1) shall not exceed 20 percent opacity.
 - (c) Unless a lower limit is specified elsewhere in this permit, 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.
- (F4) ENGINE EMISSIONS AND OPERATING HOUR LIMITATIONS [WAQSR Ch 6, Sec 2 Permit MD-1186]
- (a) The Onan 7.5 JB emergency generator (unit G-2) is limited to 500 hours of operation per year.
 - (b) NO_x, CO and formaldehyde emissions from the Caterpillar engines shall not exceed the limits specified in Table I of this permit.
 - (c) Compliance with the g/hp-hr emission limit is considered compliance with the lb/hr and TPY limits as long as each unit is operated at or below its site-rated capacity.

Table I: NO _x , CO and Formaldehyde Limitations									
Source ID#	Source Description	NO _x			CO			Formaldehyde	
		g/hp-hr	lb/hr	TPY	g/hp-hr	lb/hr	TPY	lb/hr	TPY
E-1 to E-4	Caterpillar G3612LE engines	0.7	5.7	24.8	0.25	2.0	8.9		
E-5 & E-6	Caterpillar G3612LE engines	0.7	5.7	24.8		2.0	8.9	0.65	2.83
G-5 & G-6	Caterpillar G3516BLE engines	1.0	4.0	17.4		1.0	4.5	0.28	1.22
VRU	Caterpillar G3406TA engine	1.0	0.5	2.4	2.0	1.1	4.7		

- (F5) FUEL BURNING EQUIPMENT LIMITATIONS [WAQSR Ch 3, Sec 3]
NO_x emissions from the hot oil heater and the fuel gas heater (units H-1 & H-2) shall not exceed 0.20 lb/MMBtu of heat input.
- (F6) ENGINE OPERATION AND MAINTENANCE REQUIREMENTS [WAQSR Ch 6, Sec 2 Permit MD-1186]
- (a) The permittee shall operate and maintain four of the Caterpillar G3612LE engines and the Caterpillar G3406TA engine (units E-1, E-2, E-3, E-4, and VRU), and the associated air pollution control and monitoring equipment, according to manufacturer's instructions at all times, including during startup, shutdown and malfunction.
 - (b) The permittee shall install and maintain a thermocouple on four of the Caterpillar G3612LE engines and the Caterpillar G3406TA engine (units E-1, E-2, E-3, E-4, and VRU) to measure the temperature of the gas at the inlet to each catalyst. If the inlet catalyst temperature is outside of the following ranges, corrective action shall be taken for that unit:
 - (i) The inlet catalyst temperature range for the oxidation catalysts is between 450 °F and 1350 °F.
 - (ii) The inlet catalyst temperature range for the NSCR catalyst is between 750 °F and 1250 °F.
 - (c) The permittee shall install and maintain a device to measure the pressure drop across the catalyst bed on each of four of the Caterpillar G3612LE engines and on the Caterpillar G3406TA engine (units E-1, E-2, E-3, E-4, and VRU).
 - (i) For units E-1, E-2, E-3, and E-4, if the pressure drop across a catalyst bed varies by more than two inches of water from that measured during the most recent compliant CO emission test, conducted as described in condition F11(c) of this permit, corrective action shall be taken for that unit.
 - (ii) For unit VRU, if the pressure drop across the catalyst bed varies by more than two inches of water from that measured during the most recent compliant NO_x and CO emission tests, conducted as described in condition F11 of this permit, corrective action shall be taken.
- (F7) TEMPORARY ENGINE REPLACEMENT [WAQSR Ch 6, Sec 3(h)(i)(I)]
- (a) Should any of the engines (units E-1 through E-6, G-5, G-6, and VRU) break down or require an overhaul during the term of this permit, the permittee may bring on site and operate a temporary replacement unit until repairs are made. Permanent replacement of an engine must be evaluated by the Division under Chapter 6, Section 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, and provide the date of startup of the replacement engine.

Testing Requirements

- (F8) EMISSIONS TESTING [W.S. 35-11-110]
- (a) The Division reserves the right to require additional testing as provided under condition G1 of this permit. Should testing be required:
 - (i) For visible emissions from combustion unit #1, Method 22 shall be used.

- (ii) For visible emissions from other sources, Method 9 shall be used.
 - (iii) For NO_x emissions sources, Methods 1-4, and 7 or 7E shall be used.
 - (iv) For CO and formaldehyde emissions from engines E-5, E-6, G-5, and G-6, the methods and procedures in WAQSR Ch 5, Sec 3 and §63.6620 shall be used.
 - (v) For CO emissions from other sources, Methods 1-4 and 10 shall be used.
 - (vi) For alternative test methods, or methods used for other pollutants, the approval of the Administrator must be obtained prior to using the test method to measure emissions.
- (b) Unless otherwise specified, testing shall be conducted in accordance with WAQSR Ch 5, Sec 2(h).

Monitoring Requirements

- (F9) FLASHING EMISSION MONITORING [WAQSR Ch 6, Sec 2 Permit MD-1186 and Ch 6, Sec 3(h)(i)(C)(I)]
- (a) The presence of a pilot flame in Combustion Unit #1 (unit CU-1), shall be monitored using a thermocouple and continuous recording device or any equivalent device to detect the presence of a flame.
 - (b) The permittee shall monitor the condensate tanks and Combustion Unit #1 to determine the time and duration during active operation of the condensate tanks (units TK-1 through TK-4) when the pilot flame in Combustion Unit #1 (unit CU-1) is not present.
- (F10) VISIBLE EMISSIONS MONITORING [WAQSR Ch 6, Sec 3(h)(i)(C)(I)]
- (a) The permittee shall perform, at minimum, quarterly Method 22 tests on the combustion unit #1 (unit CU-1). The Method 22 tests shall be performed for a period of 15 consecutive minutes. If visible emissions are observed during the 15 minute period, the test shall continue for 2 consecutive hours.
 - (b) The permittee shall monitor usage of the emergency flare (unit FL-1).
 - (c) Periodic monitoring for visible emissions from the engines, generators and heaters shall consist of monitoring the type of fuel used to ensure that natural gas is the sole fuel source for these units.
- (F11) ENGINE EMISSIONS MONITORING [WAQSR Ch 6, Sec 2 Permit MD-1186 and Ch 6, Sec 3(h)(i)(C)(I)]
- (a) The permittee shall monitor the annual operating hours of the Onan 7.5 JB emergency generator (unit G-2) such that compliance with the limitation in condition F4(a) may be determined.
 - (b) The permittee shall measure NO_x emissions from the Caterpillar engines (units E-1 through E-6, G-5, G-6, and VRU) at least annually.
 - (i) For the Caterpillar G3406TA engine (unit VRU), the permittee shall monitor the inlet temperature of the catalyst and the pressure drop across the catalyst bed during the NO_x emissions monitoring required by this condition.
 - (ii) If the catalyst on unit VRU is regenerated or replaced, the permittee shall conduct NO_x emissions monitoring for unit VRU as described in this paragraph within 120 days of beginning operation with the regenerated or new catalyst.
 - (c) The permittee shall measure CO emissions from the Caterpillar engines (units E-1 through E-6, G-5, G-6, and VRU) at least semiannually.
 - (i) After demonstrating compliance for two consecutive semiannual periods, the permittee may reduce the frequency of subsequent monitoring to once per calendar year. If the results of any subsequent annual monitoring indicate the unit is not in compliance with the CO emission limit stated in condition F4 of this permit, the semiannual monitoring schedule shall resume.
 - (ii) Monitoring of CO emissions conducted under condition P63-ZZZZ2(c) of this permit may satisfy this requirement for units E-5, E-6, G-5 & G-6.
 - (iii) During any CO monitoring conducted in accordance with this condition for units E-1, E-2, E-3, E-4, and VRU, the permittee shall monitor the inlet temperature of the catalyst and the pressure drop across each catalyst bed.
 - (iv) If any catalyst is regenerated or replaced, the permittee shall conduct the CO emissions monitoring for the associated engine as described in this paragraph within 120 days of beginning operation with the regenerated or new catalyst.
 - (d) The permittee shall measure NO_x and CO emissions using the Division's portable analyzer monitoring protocol or Reference Method tests as described in condition F8 of this permit. The Division's portable

- analyzer monitoring protocol is attached as Appendix A of this permit. The permittee shall notify the Division at least 15 days prior to conducting the NO_x and CO monitoring required by this condition.
- (e) Periodic Monitoring for formaldehyde is specified in conditions P63-ZZZZ2 and P63-ZZZZ3 of this permit.

- (F12) FUEL BURNING EQUIPMENT MONITORING [WAQSR Ch 6, Sec 3(h)(i)(C)(I)]
Periodic monitoring of NO_x emissions for the hot oil heater and the fuel gas heater (units H-1 & H-2) is not required since emissions from these sources are of trivial environmental importance.
- (F13) ENGINE CATALYST MONITORING [WAQSR Ch 6, Sec 2 Permit MD-1186]
(a) The permittee shall monitor inlet catalyst temperature and the pressure drop across the catalyst bed on four of the Caterpillar G3612LE engines and the Caterpillar G3406TA engine (units E-1, E-2, E-3, E-4, and VRU) at least once per calendar month.
(b) For the Caterpillar G3612LE Engines (units E-5 and E-6) and the Caterpillar G3516B LE Engines (units G-5 and G-6), the permittee shall conduct the monitoring as required under P63-ZZZZ3.

Recordkeeping Requirements

- (F14) FLASHING EMISSIONS RECORDS
[WAQSR Ch 6, Sec. 2 Permit MD-1186 and Ch 6, Sec 3(h)(i)(C)(II)]
(a) The permittee shall record the date and duration of all times of active operation of the condensate tanks (unit TK1 through TK4) during which a pilot flame is not present in Combustion Unit #1 (unit CU-1).
(b) The permittee shall record all times the thermocouple and continuous recording device or any equivalent device on the Combustion Unit #1 (unit CU-1) is not operable, malfunctioning, or down for repairs or maintenance.
(c) The permittee shall retain on-site at the facility the records of each measurement or observation and support information for a period of at least five years from the date of the measurement or observation.
- (F15) TESTING AND MONITORING RECORDS
[WAQSR Ch 6, Sec 2 Permit MD-1186 and Ch 6, Sec 3(h)(i)(C)(II)]
(a) For any testing required under condition F8 and the monitoring required under condition F11 of this permit, other than Method 9 or Method 22 observations, the permittee shall record, as applicable, the following:
(i) The date, place, and time of sampling or measurements;
(ii) The date(s) the analyses were performed;
(iii) The company or entity that performed the analyses;
(iv) The analytical techniques or methods used;
(v) The results of such analyses;
(vi) The operating conditions as they existed at the time of sampling or measurement. For engines this shall include but is not limited to:
(A) Engine horsepower;
(B) For CO testing of units E-1, E-2, E-3, and E-4, the inlet temperature of the catalyst bed and the pressure drop across the catalyst bed; and
(C) For NO_x and CO testing of unit VRU, the inlet temperature of the catalyst bed and the pressure drop across the catalyst bed.
(vii) If the sources monitored under condition F11 require adjustment, the permittee shall record both the "as found" and the "as adjusted" emission measurements and operating conditions.
(b) The permittee shall record the hours of operation of the Onan 7.5 JB emergency generator (unit G-2).
(c) If any catalyst is regenerated or replaced, the permittee shall record the date the associated engine began operation with the new or regenerated catalyst.
(d) For any Method 9 observations required by the Division under condition F8, the permittee shall keep field records in accordance with Section 2.2 of Method 9. Any corrective measures taken shall also be recorded.
(e) For any Method 22 observations required by conditions F8 or F10, the permittee shall keep field records in accordance with Sections 11.2 and 11.5 of Method 22, and record the operating conditions of the

observed unit as they existed at the time of the observation. Any corrective measures taken upon observing visible emissions from the observed unit shall also be recorded.

- (f) The permittee shall log all emissions due to usage of the emergency flare (unit FL-1).
- (g) 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.

(F16) ENGINE OPERATION AND MAINTENANCE RECORDS

[WAQSR Ch 6, Sec 2 Permit MD-1186 and Ch 6, Sec 3 (h)(i)(C)(II)]

- (a) The permittee shall record the inlet catalyst temperature for engines E-1, E-2, E-3, E-4, and VRU measured as described in condition F13. The record shall include the date, times, and duration of events during which units E-1, E-2, E-3, E-4, and VRU operate outside of the appropriate inlet catalyst temperature range as described in condition F6(b) of this permit.
- (b) The permittee shall record the pressure drop across the catalyst bed for engines E-1, E-2, E-3, E-4, and VRU measured as described in condition F13. The record shall include the date, times, and duration of events during which the pressure drop across the catalyst bed changes by more than two inches of water from the pressure drop recorded during the most recent emissions test, conducted as described in condition F11, demonstrating compliance with the emission limits.
- (c) The permittee shall record all maintenance activities and corrective actions performed on four of the Caterpillar G3612LE engines, the Caterpillar G3406TA engine (units E-1, E-2, E-3, E-4, and VRU), and the associated air pollution control equipment. The records shall include:
 - (i) The maintenance activity or corrective action 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 deviations from the manufacturer's or supplier's specifications and recommendations.
- (d) The permittee shall retain on-site at the facility the records described in this condition for a period of at least five years from the date of the inspection or maintenance activity.

Reporting Requirements

(F17) FLASHING EMISSIONS REPORTS [WAQSR Ch 6, Sec 3 (h)(i)(C)(III)]

- (a) The permittee shall report to the Division by January 31 and July 31 each year, all times of active operation of the condensate tanks during which Combustion Unit #1 or the associated monitoring equipment was inoperable.
- (b) All instances of deviations from the conditions of this permit must be clearly identified in each report.
- (c) The semiannual reports shall be submitted in accordance with condition G4 of this permit.

(F18) TESTING AND MONITORING REPORTS

[WAQSR Ch 6, Sec 2 Permit MD-1186 and Ch 6, Sec 3(h)(i)(C)(III)]

- (a) The following shall be reported to the Division by January 31 and July 31 each year:
 - (i) Documentation that the engines, generators and heaters are firing natural gas as specified in condition F10(b) of this permit.
 - (ii) The calendar year to date hours of operation of the Onan 7.5 JB emergency generator (unit G-2).
 - (iii) Summary results of the quarterly visible emissions monitoring on combustion unit #1 (unit CU-1).
 - (iv) Results of the emissions monitoring required under condition F11 of this permit, including the "as found" and "as adjusted" measurements if the source required adjustments. The report shall include the information described in condition F15 of this permit. Nonetheless, if an engine is found to be operating out of compliance, the emissions report must be submitted within 30 days of the test date to assure timely notification of noncompliance.
- (b) All instances of deviations from the conditions of this permit must be clearly identified in each report.
- (c) The semiannual reports shall be submitted in accordance with condition G4 of this permit.

- (F19) ENGINE OPERATION AND MAINTENANCE REPORTS [WAQSR Ch 6, Sec 3 (h)(i)(C)(III)]
- (a) For four of the Caterpillar G3612LE engines and the Caterpillar G3406TA engine (units E-1, E-2, E-3, E-4, and VRU) the following shall be reported to the Division by January 31 and July 31 each year:
 - (i) The date(s), times, and duration of events during which any of the engines operated outside of the appropriate inlet catalyst temperature range as described in condition F6(b) of this permit.
 - (ii) The date(s), times, and duration of events during which the pressure drop across the catalyst bed changes by more than two inches of water from the pressure drop recorded during the most recent emissions test, conducted as described in condition F11, demonstrating compliance with emission limits. Include the pressure drop as recorded during the most recent emission test(s) demonstrating compliance and the date of that test.
 - (iii) A summary of any corrective actions taken on the engines and/or catalysts.
 - (b) All instances of deviations from the conditions of this permit must be clearly identified in each report.
 - (c) The semiannual reports shall be submitted in accordance with condition G4 of this permit.
- (F20) 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.

WAQSR CHAPTER 5, SECTION 3
NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS)
40 CFR PART 63, SUBPART ZZZZ REQUIREMENTS
(Subpart ZZZZ is provided in Appendix b)

(P63-ZZZZ1) EMISSION STANDARDS

[40 CFR Part 63, Subpart ZZZZ; WAQSR Ch 5, Sec 3; and Ch 6, Sec 2 Permit MD-1186]

The permittee shall meet all requirements of 40 CFR Part 63, Subpart ZZZZ and WAQSR Ch 5, Sec 3 as they apply to the reciprocating internal combustion engines (RICE), including units E-1, E-2, E-3, E-4, E-5, E-6, G-5, and G-6. An affected source is any existing, new or reconstructed stationary RICE with a site-rating of more than 500 brake horsepower located at a major stationary source of HAP emissions as specified in §63.6590.

- (a) Each new or reconstructed 4 stroke lean burh (4SLB) stationary RICE (units E-5, E-6, G-5 and G-6) shall comply with the emission limitations of Table 2a and the operating limitations of Table 2b of Subpart ZZZZ. Units E-5, E-6, G-5, and G-6 shall either:
 - (i) Reduce CO emissions by 93 percent or more; or
 - (ii) Limit concentration of formaldehyde in the engine exhaust to 14 ppmvd or less at 15 percent O₂.
- (b) Existing 2SLB stationary RICE, 4SLB stationary RICE, compression ignition stationary RICE, emergency stationary RICE, or limited use stationary RICE do not have to meet the requirements of Subpart ZZZZ and of WAQSR Ch 5, Sec 3.

(P63-ZZZZ2) TESTING REQUIREMENTS [40 CFR Part 63, Subpart ZZZZ §§63.6610, 63.6615, 63.6620, 63.6630, and 63.6640; WAQSR Ch 5, Sec 3(h) and (i); and Ch 6, Sec 2 Permit MD-1186]

- (a) The permittee shall demonstrate initial compliance with the emission standards in condition P63-ZZZZ1 according to Table 5 of Subpart ZZZZ, using the test methods and procedures in §63.6620 and WAQSR Ch 5, Sec 3(i). Performance tests shall be conducted in accordance with the timing requirements of §63.6610.
- (b) During the initial performance test, the permittee shall establish the operating limitations in Table 2b of Subpart ZZZZ that apply to the new engines (units E-5, E-6, G-5, and G-6). If a catalyst is changed, the permittee must reestablish the values of the operating parameters measured during the initial performance test, and conduct a new performance test to demonstrate the applicable emission limitation for that RICE is being met.
- (c) Subsequent performance tests shall be repeated as specified in Table 3 of Subpart ZZZZ. If formaldehyde testing is conducted, emissions shall be determined in both ppmvd at 15 percent O₂ and lb/hr. Emissions in terms of lb/hr shall be calculated using the methodology in Section 10.1.1 of the State of Wyoming's Portable Analyzer Protocol, attached as Appendix A of this permit.
- (d) Performance testing shall meet all requirements for documentation, quality assurance, and other criteria in §63.6620 and WAQSR Ch 5, Sec 3(i).

(P63-ZZZZ3) MONITORING REQUIREMENTS

[40 CFR Part 63, Subpart ZZZZ §§63.6625, 63.6635, and 63.6640; and WAQSR Ch 5, Sec 3(j)]

- (a) If the permittee elects to install a continuous emissions monitoring system (CEMS) or is required to install a continuous parameter monitoring system (CPMS) as specified in Table 5 of Subpart ZZZZ, the permittee shall meet all of the applicable monitoring requirements specified in §63.6625 and WAQSR Ch 5, Sec 3(j).
- (b) The CEMS and CPMS described in paragraph (a) of this condition shall be installed, operational, and the data verified as specified in §63.6625 either prior to or in conjunction with conducting performance tests under condition P63-ZZZZ2. Verification of operational status shall, at a minimum, include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system.
- (c) Monitoring data from CEMS and CPMS shall be reduced in accordance with §63.6635(c) and Ch 5, Sec 3(j)(vii).
- (d) The permittee shall demonstrate compliance with the limitations in Tables 2a and 2b of Subpart ZZZZ that apply according to the methods specified in Table 6 of Subpart ZZZZ.

(P63-ZZZZ4) OPERATION & MAINTENANCE REQUIREMENTS [40 CFR Part 63, Subpart ZZZZ §§63.6605 and WAQSR Ch 5, Sec 3(h)(iv)(A)(I) and (II), Sec 3(i)(iii), and Sec 3(j)]

- (a) At all times, including periods of startup, shutdown, and malfunction, the permittee shall operate and maintain the new RICE (units E-5, E-6, G-5, and G-6), including associated air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions.
- (b) Malfunctions shall be corrected as soon as practicable after their occurrence in accordance with the startup, shutdown, and malfunction plan required in condition P63-ZZZZ5 of this permit.
- (c) The permittee must keep the necessary parts for routine repairs of the CEMS and CPMS equipment readily available.
- (d) Except for system breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high-level calibration drift adjustments, all CEMS and CPMS shall be in continuous operation. All continuous emission monitoring systems (CEMS) shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.
- (e) The permittee shall develop and implement a CMS (CEMS and CPMS) quality control program.
 - (i) The permittee shall develop, and upon request submit to the Administrator in accordance with condition G4, a site-specific performance evaluation test plan for approval upon request. The plan shall be developed according to the procedures in WAQSR Ch 5, Sec 3(i)(iii)(B) and 3(j)(v).
 - (ii) The performance evaluation test shall be conducted as described in Ch 5, Sec 3(j)(v)(D).
 - (iii) Each quality control program shall include, at a minimum, a written protocol that describes procedures for each of the following operations:
 - (A) Initial and any subsequent calibration of the CMS;
 - (B) Determination and adjustment of the calibration drift of the CMS;
 - (C) Preventive maintenance of the CMS, including spare parts inventory;
 - (D) Data recording, calculations, and reporting;
 - (E) Accuracy audit procedures, including sampling and analysis methods; and
 - (F) Program for corrective action for a malfunctioning CMS.
 - (iv) The permittee shall keep these written procedures on record to be made available for inspection, upon request, by the Administrator, for the life of the new RICE or until the new engines (units E-5, E-6, G-5, and G-6) are no longer subject to the provisions of Ch 5, Sec 3. In addition, if the quality control program is revised, the permittee shall keep previous (i.e., superseded) versions on record, to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan.
- (f) Additional CMS requirements are specified in Ch 5, Sec 3(j)(iii) and (iv).

(P63-ZZZZ5) STARTUP, SHUTDOWN, & MALFUNCTION PLAN [WAQSR Ch 5, Sec 3(h)(iv)(C)]

- (a) The permittee shall maintain and implement a written startup, shutdown, and malfunction plan (SSMP) that describes, in detail, procedures for operating and maintaining the new engines (units E-5, E-6, G-5, and G-6) during periods of startup, shutdown, and malfunction, and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with Subpart ZZZZ. The plan shall identify all routine or otherwise predictable CMS malfunctions.
- (b) During periods of startup, shutdown, and malfunction, the permittee shall operate and maintain units E-5, E-6, G-5, and G-6 (including associated air pollution control equipment) in accordance with the procedures specified in the SSMP developed under paragraph (a) of this condition.
- (c) When actions taken by the permittee during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the SSMP, the permittee shall keep records for that event that demonstrate the procedures specified in the plan were followed. These records may take the form of a "checklist," or other effective form of recordkeeping, that confirms conformance with the SSMP for that event.
- (d) If an action taken by the permittee during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the SSMP, the permittee shall record the actions taken for that event.

- (e) The permittee shall keep the written SSMP on record to be made available for inspection, upon request, by the Administrator for the life of the new RICE or until the new engines (units E-5, E-6, G-5, and G-6) are no longer subject to the provisions of Ch 5, Sec 3. In addition, if the SSMP is revised, the permittee shall keep previous (i.e., superseded) versions of the SSMP on record, to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan.
- (f) To satisfy the requirements of this condition to develop a SSMP, the permittee may use their standard operating procedures (SOP) manual, or an Occupational Safety and Health Administration (OSHA) or other plan, provided the alternative plans meet all the requirements of Ch 5, Sec 3 and are made available for inspection when requested by the Administrator.
- (g) If the SSMP fails to address or inadequately addresses an event that meets the characteristics of a malfunction but was not included in the SSMP at the time the permittee developed the plan, the permittee shall revise the SSMP within 45 days after the event to include detailed procedures for operating and maintaining units E-5, E-6, G-5, and G-6 during similar malfunction events and a program of corrective action for similar malfunctions of the engines or air pollution control equipment.

(P63-ZZZZ6) GENERAL RECORDKEEPING REQUIREMENTS

[40 CFR Part 63, Subpart ZZZZ §63.6655 and WAQSR Ch 5, Sec 3(l)(ii) and (iii)]

- (a) The permittee shall maintain files of all information (including all reports and notifications) required by Subpart ZZZZ and Ch 5, Sec 3 recorded in a form suitable and readily available for expeditious inspection and review. The files shall be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent 2 years of data shall be retained on site at the facility. The remaining 3 years of data may be retained off site. Such files may be maintained on microfilm, on a computer, on computer floppy disks, on magnetic tape disks, or on microfiche.
- (b) The permittee shall maintain relevant records for the new RICE (units E-5, E-6, G-5, and G-6) of the following:
 - (i) The occurrence and duration of each startup, shutdown, or malfunction of operation (i.e., engines);
 - (ii) The occurrence and duration of each malfunction of the air pollution control equipment;
 - (iii) All maintenance performed on the air pollution control equipment;
 - (iv) Actions taken during periods of startup, shutdown, and malfunction (including corrective actions to restore malfunctioning engine and air pollution control equipment to its normal or usual manner of operation) when such actions are different from the procedures specified in the SSMP;
 - (v) All information necessary to demonstrate conformance with the SSMP when all actions taken during periods of startup, shutdown, and malfunction (including corrective actions to restore malfunctioning engine and air pollution control equipment to its normal or usual manner of operation) are consistent with the procedures specified in such plan. (The information needed to demonstrate conformance with the SSMP may be recorded using a "checklist," or some other effective form of recordkeeping, to minimize the recordkeeping burden for conforming events);
 - (vi) Each period during which a CMS is malfunctioning or inoperable (including out-of-control periods).
 - (vii) All required measurements needed to demonstrate compliance with Subpart ZZZZ;
 - (viii) All results of performance tests and CMS performance evaluations;
 - (ix) All CMS calibration checks;
 - (x) All adjustments and maintenance performed on CMS;
 - (xi) All measurements as may be necessary to determine the conditions of performance tests and performance evaluations;
 - (xii) All documentation supporting initial notifications and notifications of compliance status under condition P63-ZZZZ7 of this permit;
 - (xiii) All records of applicability determination, including supporting analysis;
 - (xiv) All other records for CMS required by Ch, 5 Sec 3(l)(iii).
 - (xv) All other records required by Subpart ZZZZ §63.6655 and Ch 5, Sec 3.

- (P63-ZZZZ7) NOTIFICATION REQUIREMENTS [40 CFR Part 63, Subpart ZZZZ §63.6645 and §63.6650 and WAQSR Ch 5, Sec 3(h), (i), (j), and (k)]
- (a) The permittee shall submit notifications required under this permit condition P63-ZZZZ7, Subpart ZZZZ, and Ch 5, Sec 3 to the Administrator and U.S. EPA Region VIII in accordance with condition G4 of this permit.
 - (b) The permittee shall notify the Administrator in writing of their intention to conduct any performance test required by condition P63-ZZZZ2 at least 60 calendar days before the performance test is scheduled to begin.
 - (c) The permittee shall notify the Administrator in writing of the date the CMS performance evaluation required by condition P63-ZZZZ4 is scheduled to begin, simultaneously with the notification of performance test date required by (b) above.
 - (d) The permittee shall, if requested, submit the site-specific performance evaluation test plan required by P63-ZZZZ4 simultaneously with the notification required by (b) above.
 - (e) The permittee shall submit a Notification of Compliance Status with Subpart ZZZZ upon completion of any performance testing specified in Table 3 of Subpart ZZZZ before the close of business on the 60th day following completion of the performance test. The Notification of Compliance Status shall include all the information specified by WAQSR Ch 5, Sec 3(k)(viii).
 - (f) The permittee shall submit all other notifications as required by 40 CFR Subpart ZZZZ and WAQSR Ch 5, Sec 3.

(P63-ZZZZ8) REPORTING REQUIREMENTS

[40 CFR Part 63, Subpart ZZZZ and WAQSR Ch 5, Sec 3(j) and Sec 3(l)(i), (iv), and (v)]

- (a) The permittee shall submit reports required under this permit condition P63-ZZZZ8, Subpart ZZZZ §63.6650, and Ch 5, Sec 3 to the Administrator and U.S. EPA Region VIII in accordance with condition G4 of this permit.
- (b) For the CMS required by condition P63-ZZZZ3, a written report of the results of the performance evaluation conducted under condition P63-ZZZZ4 shall be submitted to the Administrator simultaneously with the performance test results required under paragraph (b) above.
- (c) The permittee shall submit initial and semiannual Compliance reports in accordance with the schedule in §63.6650(b). Each report shall include:
 - (i) All exceedances of limitations specified in P63-ZZZZ1.
 - (ii) If a startup, shutdown, or malfunction of one or more of the new engines (units E-5, E-6, G-5, and G-6) occurred during the reporting period and actions taken by the permittee during the startup, shutdown, or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the source's SSMP, the permittee shall state such information in a startup, shutdown, and malfunction report. The report shall consist of a letter, containing the name, title, and signature of the responsible official who is certifying its accuracy.
 - (iii) Information required by Table 7 of Subpart ZZZZ and §63.6650(c) through (g).
 - (iv) All other information listed in WAQSR Ch 5, Sec 3(l)(v)(C)(VI).
- (d) If the total duration of CMS exceedances for a calendar semiannual period is 1 percent or greater of the total operating time for that semiannual period, or the CMS downtime for the calendar semiannual period is 5 percent or greater of the total operating time for that semiannual period, then the permittee shall submit a Supplemental Excess Emission and CMS Performance report. This report shall be included with the Compliance report required in paragraph (d) of this condition and shall include the following:
 - (i) Information required by WAQSR Ch 5, Sec 3(l)(iii)(B) through (I);
 - (ii) Information required by WAQSR Ch 5, Sec 3(j)(iii)(G) and (H); and
 - (iii) The name, title, and signature of the responsible official who is certifying the accuracy of the report.
- (e) Immediate startup, shutdown, and malfunction reports:
 - (i) Any time an action taken by a permittee during a startup, shutdown, or malfunction is not consistent with the procedures in the SSMP, the permittee shall make a report of the actions taken for the event by telephone call or facsimile (FAX) transmission within 2 working days after starting actions inconsistent with the plan. The immediate report shall be followed by a letter, delivered or postmarked within 7 working days after the end of the event, that contains the name,

title, and signature of the responsible official who is certifying its accuracy, explaining the circumstances of the event, the reasons for not following the startup, shutdown, and malfunction plan, and whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred.

- (ii) For those malfunctions and or other events that affect the CMS and are not addressed by the SSMP, the permittee shall send a follow-up report within 2 weeks after commencing actions inconsistent with the plan that either certifies that corrections have been made or includes a corrective action plan and schedule. The permittee shall provide proof that repair parts have been ordered or any other records that would indicate that the delay in making repairs is beyond their control.
- (f) The permittee shall submit all other reports as required by Table 7 of Subpart ZZZZ, §63.6650, and Ch 5, Sec 3.

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 flashing emissions, the permittee shall assess compliance with condition F2 of this permit by conducting the monitoring required by condition F9 of this permit.
- (ii) For visible emissions, the permittee shall assess compliance with condition F3 of this permit by conducting the monitoring required by condition F10 of this permit.
- (iii) For the hours limit on unit G-2, the permittee shall assess compliance with condition F4(a) of this permit by conducting the monitoring required by condition F11(a) of this permit.
- (iv) For NO_x emissions from the various engines, the permittee shall assess compliance with condition F4 by conducting the monitoring required by conditions F11 and F13 of this permit.
- (v) For CO emissions from the various engines, the permittee shall assess compliance with condition F4 by conducting the monitoring required by conditions F11 and F13 of this permit.
- (vi) For formaldehyde (or surrogate CO) emissions from units E-5, E-6, G-5 & G-6, the permittee shall assess compliance with conditions F4 and P63-ZZZZ1 by conducting the emissions testing required by condition P63-ZZZZ2 and the monitoring required by condition P63-ZZZZ3, as well as by reviewing the records required by condition P63-ZZZZ6 of this permit.
- (vii) For engine operations and maintenance, the permittee shall assess compliance with condition F6 by reviewing the records required by condition F16 of this permit.
- (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) 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) There are no emissions trading provisions 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 Conditions and 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 Ch 3, Sec 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 SO₂ greater than 100 tpy in calendar year 2000 or any subsequent year, shall comply with the applicable requirements of WAQSR Ch 14, Sections 1 through 3, with the exceptions described in sections 2(c) and 3(a).

Stratospheric Ozone Protection Requirements: [40 CFR Part 82]

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

STATE ONLY PERMIT CONDITIONS

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

Ambient Standards:

(S1) The permittee shall operate the emission units described in this permit such that the following ambient standards are not exceeded:

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)
	65 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	1.5 micrograms per cubic meter	maximum arithmetic mean averaged over a calendar quarter	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#: **TK1 through TK4** Source Description: **Condensate Storage tanks**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
VOC's	The tanks shall be controlled by Combustion Unit #1 [F2]	WAQSR Ch 6, Sec 2 Permit MD-1186	Test if required [F8]	Monitor times of active operation of the tanks [F9(b)]	Record times of active operation with no pilot flame is present in Combustion Unit #1 [F14(b)] Record results of any tests [F15]	Report times when the tanks were not controlled with Combustion Unit #1 [F17] Report excess emissions and permit deviations [F20]

Source ID#: **CU-1** Source Description: **Combustion Unit #1**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	Combustion unit #1 shall be operated and maintained to be smokeless [F3]	WAQSR Ch 6, Sec 2 Permit MD-1186 and Ch 3, Sec 6(b)(i)	Test if required [F8]	Quarterly Method 22 observations [F10(a)]	Record results of quarterly observations [F15] Record the results of any tests [F15]	Report the summary of the quarterly observations [F18] Report excess emissions and permit deviations [F20]
VOC's	Operated during all time of active tank operation [F2] Equip with a thermocouple and continuous recording device to detect the presence of a flame [F2]	WAQSR Ch 6, Sec 2 Permit MD-1186	Test if required [F8]	Monitor the presence of a pilot flame using the thermocouple [F9] Monitor downtimes of combustion unit #1 [F9]	Record the lack of a pilot flame and thermocouple downtime [F14] Record results of any tests [F15]	Report times when the tanks were not controlled with Combustion Unit #1 [F17] Report excess emissions and permit deviations. [F20]

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#: **G-2** Source Description: **Onan 7.5 JB emergency generator**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 % Opacity [F3] 500 hours of operation per year [F4]	WAQSR Ch 3, Sec 2 and WAQSR Ch 6, Sec 2 Permit MD-1186	Test if required [F8]	Monitor engine fuel type [F10] Monitor hours of operation [F11(a)]	Record the hours of operation and the results of any tests [F15]	Report type of fuel fired and the hours of operation [F18] Report excess emissions and permit deviations [F20]

Source ID#: **VRU** Source Description: **Caterpillar 3406TA with NSCR catalyst**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 % Opacity [F3]	WAQSR Ch 3, Sec 2	Test if required [F8]	Monitor engine fuel type [F10]	Record the results of any tests [F15]	Report type of fuel fired [F18] Report excess emissions and permit deviations [F20]
NO _x	1.0 g/hp-hr, 0.5 lb/hr & 2.4 TPY [F4] Install and maintain a thermocouple and a pressure drop measurement device on the catalyst bed [F6]	WAQSR Ch 6, Sec 2 Permit MD-1186	Test if required [F8]	Monitor NO _x emissions annually and after catalyst change [F11] Monitor inlet catalyst temperature and pressure drop [F13]	Record monitoring results [F15] Record times when the catalyst bed is outside temperature and pressure drop ranges; record maintenance and corrective actions [F16]	Report monitoring results [F18] Report when catalyst bed inlet temperature or pressure drop were outside the specified range and any corrective actions taken [F19] Report excess emissions and permit deviations [F20]
CO	2.0 g/hp-hr, 1.1 lb/hr & 4.7 TPY [F4] Operate according to mfr's recommendations [F6] Install and maintain a thermocouple and a pressure drop measurement device on the catalyst bed [F6]	WAQSR Ch 6, Sec 2 Permit MD-1186	Test if required [F8]	Monitor CO emissions semiannually and after catalyst change [F11] Monitor inlet catalyst temperature and pressure drop [F13]	Record monitoring results [F15] Record times when the catalyst bed is outside temperature and pressure drop ranges; record maintenance and corrective actions [F16]	Report monitoring results [F18] Report when catalyst bed inlet temperature or pressure drop were outside the specified range and any corrective actions taken [F19] Report excess emissions and permit deviations [F20]

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#: E-1 through E-4 Source Description: (4 of 6) Caterpillar G3612LE engines with oxidation catalysts

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 % Opacity [F3]	WAQSR Ch 3, Sec 2	Test if required [F8]	Monitor engine fuel type [F10]	Record the results of any tests [F15]	Report type of fuel fired [F18] Report excess emissions and permit deviations [F20]
NO _x	0.7 g/hp-hr, 5.7 lb/hr & 24.8 TPY each [F4]	WAQSR Ch 6, Sec 2 Permit MD-1186	Test if required [F8]	Monitor NO _x emissions annually [F11]	Record monitoring results [F15]	Report emissions monitoring results [F18] Report excess emissions and permit deviations [F20]
CO	0.25 g/hp-hr, 2.0 lb/hr & 8.9 TPY each [F4] Operate according to mfr's recommendations [F6] Install and maintain a thermocouple and a pressure drop measurement device on each engine catalyst bed [F6]	WAQSR Ch 6, Sec 2 Permit MD-1186	Test if required [F8]	Monitor CO emissions semiannually and after catalyst change [F11] Monitor inlet catalyst temperature and pressure drop [F13]	Record monitoring results [F15] Record times when any catalyst bed is outside temperature and pressure drop ranges; record maintenance and corrective actions [F16]	Report monitoring results [F18] Report when any catalyst bed inlet temperature or pressure drop were outside the specified range and any corrective actions taken [F19] Report excess emissions and permit deviations [F20]

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#: E-5 & E-6 Source Description: (2 of 6) Caterpillar G3612LE engines with oxidation catalysts

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 % Opacity [F3]	WAQSR Ch 3, Sec 2	Test if required [F8]	Monitor engine fuel type [F10]	Record the results of any tests [F15]	Report type of fuel fired [F18] Report excess emissions and permit deviations [F20]
NO _x	0.7 g/hp-hr, 5.7 lb/hr & 24.8 TPY each [F4]	WAQSR Ch 6, Sec 2 Permit MD-1186	Test if required [F8]	Monitor NO _x emissions annually [F11]	Record emissions monitoring results [F15]	Report emissions monitoring results [F18] Report excess emissions and permit deviations [F20]
CO	2.0 lb/hr & 8.9 TPY each [F4]	WAQSR Ch 6, Sec 2 Permit MD-1186	Test if required [F8]	Monitor CO emissions semiannually and after catalyst change [F11]	Record the results of the emissions monitoring [F15]	Report emissions monitoring results [F18] Report excess emissions and permit deviations [F20]
Formaldehyde	0.65 lb/hr & 2.83 TPY each [F4] Reduce CO emissions by 93% or more; or Limit formaldehyde to 14 ppmvd @ 15% O ₂ ; Operate and maintain in accordance with Subpart ZZZZ [P63-ZZZZ4 and P63-ZZZZ5]	WAQSR Ch 6, Sec 2 Permit MD-1186 40 CFR Part 63, Subpart ZZZZ and WAQSR Ch 5, Sec 3	Test if required [F8] Test initially, when catalyst is changed, and semiannually [P63-ZZZZ2]	Monitor as required by subpart ZZZZ [P63-ZZZZ3]	Keep records in accordance with Subpart ZZZZ [P63-ZZZZ6]	Report excess emissions and permit deviations [F20] Submit all required notifications and reports in accordance with Subpart ZZZZ [P63-ZZZZ7 & P63-ZZZZ8]

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#: G-5 & G-6 Source Description: Caterpillar G3516BLE engines with oxidation catalysts

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 % Opacity [F3]	WAQSR Ch 3, Sec 2	Test if required [F8]	Monitor engine fuel type [F10]	Record the results of any tests [F15]	Report type of fuel fired [F18] Report excess emissions and permit deviations [F20]
NO _x	1.0 g/hp-hr, 4.0 lb/hr & 17.4 TPY each [F4]	WAQSR Ch 6, Sec 2 Permit MD-1186	Test if required [F8]	Monitor NO _x emissions annually [F11]	Record emissions monitoring results [F15]	Report emissions monitoring results [F18] Report excess emissions and permit deviations [F20]
CO	1.0 lb/hr & 4.5 TPY each [F4]	WAQSR Ch 6, Sec 2 Permit MD-1186	Test if required [F8]	Monitor CO emissions semiannually and after catalyst change [F11]	Record emissions monitoring results [F15]	Report emissions monitoring results [F18] Report excess emissions and permit deviations [F20]
Formaldehyde	0.28 lb/hr & 1.22 TPY each [F4] Reduce CO emissions by 93% or more; or Limit formaldehyde to 14 ppmvd @ 15% O ₂ ; Operate and maintain in accordance with Subpart ZZZZ [P63-ZZZZ4 and P63-ZZZZ5]	WAQSR Ch 6, Sec 2 Permit MD-1186 40 CFR Part 63, Subpart ZZZZ and WAQSR Ch 5, Sec 3	Test if required [F8] Test initially, when catalyst is changed, and semiannually [P63-ZZZZ2]	Monitor as required by subpart ZZZZ [P63-ZZZZ3]	Keep records in accordance with Subpart ZZZZ [P63-ZZZZ6]	Report excess emissions and permit deviations [F20] Submit all required notifications and reports in accordance with Subpart ZZZZ [P63-ZZZZ7 and P63-ZZZZ8]

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#: **H-1 & H-2** Source Description: **Hot Oil Heater and Fuel Gas Heater**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Particulate	20 % Opacity [F3]	WAQSR Ch 3, Sec 2	Test if required [F8]	Monitor fuel type [F10]	Record the results of any tests [F15]	Report type of fuel fired [F18] Report excess emissions and permit deviations [F20]
NO _x	0.20 lb/MMBtu of heat input	WAQSR Ch 3, Sec 2	Test if required [F8]	None [F12]	Record the results of any tests [F15]	Report excess emissions and permit deviations [F20]

Source ID#: **FL-1** Source Description: **Emergency Flare**

Pollutant	Emissions Limit / Work Practice Standard	Corresponding Regulation(s)	Testing Requirements	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
VOC	Equip and operate with an automatic ignitor or continuous burning pilot [F2] 20 % Opacity [F3]	WAQSR Ch 3, Sec 6(b)	Test if required [F8]	Monitor flare usage[F10]	Record flare usage [F15(f)]	Report excess emissions and permit deviations [F20]

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

ACFM	Actual cubic feet per minute
AQD	Air Quality Division
BACT	Best available control technology (see Definitions)
Btu	British Thermal Unit
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
C.F.R.	Code of Federal Regulations
CO	Carbon monoxide
°F	Degrees Fahrenheit
DEQ	Wyoming Department of Environmental Quality
EPA	United States Environmental Protection Agency (see Definitions)
ESP	Electrostatic Precipitator
g/hp-hr	Gram(s) per horsepower hour
gal	Gallon(s)
gr	Grain(s)
H ₂ S	Hydrogen sulfide
HAP(s)	Hazardous air pollutant(s)
hp	Horsepower
hr	Hour(s)
ID#	Identification number
lb	Pound(s)
M	Thousand
MACT	Maximum available control technology (see Definitions)
mfr	Manufacturer
mg	Milligram(s)
MM	Million
MVAC	Motor Vehicle Air Conditioner
N/A	Not applicable
NMHC(s)	Non-methane hydrocarbon(s)
NO _x	Oxides of nitrogen
O ₂	Oxygen
OPP	Operating Permit Program
PM	Particulate matter
PM ₁₀	Particulate matter less than or equal to a nominal diameter of 10 micrometers
ppmv	Parts per million (by volume)
ppmw	Parts per million (by weight)
QIP	Quality Improvement Plan
SCF	Standard cubic foot (feet)
SCFD	Standard cubic foot (feet) per day
SCM	Standard cubic meter(s)
SIC	Standard Industrial Classification
SO ₂	Sulfur dioxide
SO ₃	Sulfur trioxide
SO _x	Oxides of sulfur
TBD	To be determined
TPD	Ton(s) per day
TPH	Ton(s) per hour
TPY	Tons per year
U.S.C.	United States Code
µg	Microgram(s)
VOC(s)	Volatile organic compound(s)
W.S.	Wyoming Statute
WAQSR	Wyoming Air Quality Standards & Regulations (see Definitions)

DEFINITIONS

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

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

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

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

"BACT" or "Best available control technology" means an emission limitation (including a visible emission standard) based on the maximum degree of reduction of each pollutant subject to regulation under the WAQSR or regulation under the Federal Clean Air Act, which would be emitted from or which results for any proposed major emitting facility or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application or production processes and available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular class of sources would make the imposition of

an emission standard infeasible, he may instead prescribe a design, equipment, work practice or operational standard or combination thereof to satisfy the requirement of Best Available Control Technology. Such standard shall, to the degree possible, set forth the emission reduction achievable by implementation of such design, equipment, work practice, or operation and shall provide for compliance by means which achieve equivalent results. Application of BACT shall not result in emissions in excess of those allowed under Chapter 5, Section 2 of the WAQSR and any other new source performance standard or national emission standards for hazardous air pollutants promulgated by EPA but not yet adopted by the state.

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

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

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

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

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

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

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

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

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

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

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

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

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

"Regulated air pollutant" means the following:

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

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

"Responsible official" means one of the following:

- (a) For a corporation:
 - (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or
 - (ii) A duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
 - (A) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars); or
 - (B) the delegation of authority to such representative is approved in advance by the Division;
- (b) For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
- (c) For a municipality, State, Federal, or other public agency: Either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency; or

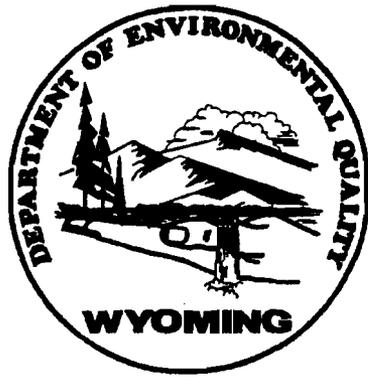
- (d) For affected sources:
 - (i) The designated representative or alternate designated representative in so far as actions, standards, requirements, or prohibitions under title IV of the Act or the regulations promulgated thereunder are concerned; and
 - (ii) The designated representative, alternate designated representative, or responsible official under Chapter 6, Section 3 (b)(xxvi) of the WAQSR for all other purposes under this section.

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

Appendix A
Portable Analyzer Monitoring Protocol

**STATE OF WYOMING AIR QUALITY DIVISION
PORTABLE ANALYZER MONITORING PROTOCOL**

**Determination of Nitrogen Oxides, Carbon Monoxide and Oxygen Emissions
from Natural Gas-Fired Reciprocating Engines, Combustion Turbines,
Boilers, and Process Heaters Using Portable Analyzers**



WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
122 West 25th Street
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Approved By:

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State of Wyoming Portable Analyzer Monitoring Protocol

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1. APPLICABILITY AND PRINCIPLE

1.1 Applicability. This method is applicable to the determination of nitrogen oxides (NO and NO₂), carbon monoxide (CO), and oxygen (O₂) concentrations in controlled and uncontrolled emissions from natural gas-fired reciprocating engines, combustion turbines, boilers, and process heaters using portable analyzers with electrochemical cells. The use of reference method equivalent analyzers is acceptable provided the appropriate reference method procedures in 40 CFR 60, Appendix A are used. Due to the inherent cross sensitivities of the electrochemical cells, this method is not applicable to other pollutants.

1.2 Principle. A gas sample is continuously extracted from a stack and conveyed to a portable analyzer for determination of NO, NO₂, CO, and O₂ gas concentrations using electrochemical cells. Analyzer design specifications, performance specifications, and test procedures are provided to ensure reliable data. Additions to or modifications of vendor-supplied analyzers (e.g. heated sample line, flow meters, etc.) may be required to meet the design specifications of this test method.

2. RANGE AND SENSITIVITY

2.1 Analytical Range. The analytical range for each gas component is determined by the electrochemical cell design. A portion of the analytical range is selected to be the nominal range by choosing a span gas concentration near the flue gas concentrations or permitted emission level in accordance with Sections 2.1.1, 2.1.2 and 2.1.3.

2.1.1 CO and NO Span Gases. Choose a span gas concentration such that the average stack gas reading for each test is greater than 25 percent of the span gas concentration. Alternatively, choose the span gas such that it is not greater than 3.33 times the concentration equivalent to the emission standard. If concentration results exceed 125 percent of the span gas at any time during the test, then the test for that pollutant is invalid.

2.1.2 NO₂ Span Gas. Choose a span gas concentration such that the average stack gas reading for each test is greater than 25 percent of the span gas concentration. Alternatively, choose the span gas concentration such that it is not greater than the ppm concentration value of the NO span gas. The tester should be aware NO₂ cells are generally designed to measure much lower concentrations than NO cells and the span gas should be chosen accordingly. If concentration results exceed 125 percent of the span gas at any time during the test, then the test for that pollutant is invalid.

2.1.3 O₂ Span Gas. The O₂ span gas shall be dry ambient air at 20.9% O₂.

3. DEFINITIONS

3.1 Measurement System. The total equipment required for the determination of gas concentration. The measurement system consists of the following major subsystems:

3.1.1 Sample Interface. That portion of a system used for one or more of the following: sample acquisition, sample transport, sample conditioning, or protection of the electrochemical cells from particulate matter and condensed moisture.

3.1.2 External Interference Gas Scrubber. A tube filled with scrubbing agent used to remove interfering compounds upstream of some electrochemical cells.

3.1.3 Electrochemical (EC) Cell. That portion of the system that senses the gas to be measured and generates an output proportional to its concentration. Any cell that uses diffusion-limited oxidation and reduction reactions to produce an electrical potential between a sensing electrode and a counter electrode.

3.1.4 Data Recorder. It is recommended that the analyzers be equipped with a strip chart recorder, computer, or digital recorder for recording measurement data. However, the operator may record the test results manually in accordance with the requirements of Section 7.5.

3.2 Nominal Range. The range of concentrations over which each cell is operated (25 to 125 percent of span gas value). Several nominal ranges may be used for any given cell as long as the linearity and stability check results remain within specification.

3.3 Span Gas. The high level concentration gas chosen for each nominal range.

3.4 Zero Calibration Error. For the NO, NO₂ and CO channels, the absolute value of the difference, expressed as a percent of the span gas, between the gas concentration exhibited by the gas analyzer when a zero level calibration gas is introduced to the analyzer and the known concentration of the zero level calibration gas. For the O₂ channel, the difference, expressed as percent O₂, between the gas concentration exhibited by the gas analyzer when a zero level calibration gas is introduced to the analyzer and the known concentration of the zero level calibration gas.

3.5 Span Calibration Error. For the NO, NO₂ and CO channels, the absolute value of the difference, expressed as a percent of the span gas, between the gas concentration exhibited by the gas analyzer when a span gas is introduced to the analyzer and the known concentration of the span gas. For the O₂ channel, the difference, expressed as percent O₂, between the gas concentration exhibited by the gas analyzer when a span gas is introduced to the analyzer and the known concentration of the span gas.

3.6 Response Time. The amount of time required for the measurement system to display 95 percent of a step change in the NO or CO gas concentration on the data recorder (90 percent of a step change for NO₂).

3.7 Interference Check. A method of quantifying analytical interferences from components in

the stack gas other than the analyte.

3.8 Linearity Check. A method of demonstrating the ability of a gas analyzer to respond consistently over a range of gas concentrations.

3.9 Stability Check. A method of demonstrating an electrochemical cell operated over a given nominal range provides a stable response and is not significantly affected by prolonged exposure to the analyte.

3.10 Stability Time. As determined during the stability check; the elapsed time from the start of the gas injection until a stable reading has been achieved.

3.11 Initial NO Cell Temperature. The temperature of the NO cell during the pretest calibration error check. Since the NO cell can experience significant zero drift with cell temperature changes in some situations, the cell temperature must be monitored if the analyzer does not display negative concentration results. Alternatively, manufacturer's documentation may be submitted showing the analyzer incorporates a NO cell temperature control and temperature exceedance warning system.

3.12 Test. The collection of emissions data from a source for an equal amount of time at each sample point and for a minimum of 21 minutes total.

4. MEASUREMENT SYSTEM PERFORMANCE SPECIFICATIONS

4.1 Zero Calibration Error. Less than or equal to ± 3 percent of the span gas value for NO, NO₂, and CO channels and less than or equal to ± 0.3 percent O₂ for the O₂ channel.

4.2 Span Calibration Error. Less than or equal to ± 5 percent of the span gas value for NO, NO₂, and CO channels and less than or equal to ± 0.5 percent O₂ for the O₂ channel.

4.3 Interference Response. The CO and NO interference responses must be less than or equal to 5 percent as calculated in accordance with Section 7.7.

4.4 Linearity. For the zero, mid-level, and span gases, the absolute value of the difference, expressed as a percent of the span gas, between the gas value and the analyzer response shall not be greater than 2.5 percent for NO, CO and O₂ cells and not greater than 3.0 percent for NO₂ cells.

4.5 Stability Check Response. The analyzer responses to CO, NO, and NO₂ span gases shall not vary more than 3.0 percent of span gas value over a 30-minute period or more than 2.0 percent of the span gas value over a 15-minute period.

4.6 CO Measurement, Hydrogen (H₂) Compensation. It is recommended that CO measurements be performed using a hydrogen-compensated EC cell since CO-measuring EC cells can experience significant reaction to the presence of H₂ in the gas stream. Sampling systems equipped with a scrubbing agent prior to the CO cell to remove H₂ interferent gases may also be used.

5. APPARATUS AND REAGENTS

5.1 Measurement System. Use any measurement system that meets the performance and design specifications in Sections 4 and 5 of this method. The sampling system shall maintain the gas sample at a temperature above the dew point up to the moisture removal system. The sample conditioning system shall be designed so there are no entrained water droplets in the gas sample when it contacts the electrochemical cells. A schematic of an acceptable measurement system is shown in Figure 1. The essential components of the measurement system are described below:

5.1.1 Sample Probe. Glass, stainless steel, or other nonreactive material, of sufficient length to sample per the requirements of Section 7. If necessary to prevent condensation, the sampling probe shall be heated.

5.1.2 Heated Sample Line. Heated (sufficient to prevent condensation) nonreactive tubing such as teflon, stainless steel, glass, etc. to transport the sample gas to the moisture removal system. (Includes any particulate filters prior to the moisture removal system.)

5.1.3 Sample Transport Lines. Nonreactive tubing such as teflon, stainless steel, glass, etc. to transport the sample from the moisture removal system to the sample pump, sample flow rate control, and electrochemical cells.

5.1.4 Calibration Assembly. A tee fitting to attach to the probe tip or where the probe attaches to the sample line for introducing calibration gases at ambient pressure during the calibration error checks. The vented end of the tee should have a flow indicator to ensure sufficient calibration gas flow. Alternatively use any other method that introduces calibration gases at the probe at atmospheric pressure.

5.1.5 Moisture Removal System. A chilled condenser or similar device (e.g., permeation dryer) to remove condensate continuously from the sample gas while maintaining minimal contact between the condensate and the sample gas.

5.1.6 Particulate Filter. Filters at the probe or the inlet or outlet of the moisture removal system and inlet of the analyzer may be used to prevent accumulation of particulate material in the measurement system and extend the useful life of the components. All filters shall be fabricated of materials that are nonreactive to the gas being sampled.

5.1.7 Sample Pump. A leak-free pump to pull the sample gas through the system at a flow rate sufficient to minimize the response time of the measurement system. The pump may be constructed of any material that is nonreactive to the gas being sampled.

5.1.8 Sample Flow Rate Control. A sample flow rate control valve and rotameter, or equivalent, to maintain a constant sampling rate within 10 percent during sampling and calibration error checks. The components shall be fabricated of materials that are nonreactive to the gas being sampled.

5.1.9 Gas Analyzer. A device containing electrochemical cells to determine the NO, NO₂, CO, and O₂ concentrations in the sample gas stream and, if necessary, to correct for interference effects. The analyzer shall meet the applicable performance specifications of Section 4. A means of controlling the analyzer flow rate and a device for determining proper sample flow rate (e.g., precision rotameter, pressure gauge downstream of all flow controls, etc.) shall be provided at the analyzer. (Note: Housing the analyzer in a clean, thermally-stable, vibration-free environment will minimize drift in the analyzer calibration, but this is not a requirement of the method.)

5.1.10 Data Recorder. A strip chart recorder, computer, or digital recorder, for recording measurement data. The data recorder resolution (i.e., readability) shall be at least 1 ppm for CO, NO, and NO₂; 0.1 percent O₂ for O₂; and one degree (C or F) for temperature.

5.1.11 External Interference Gas Scrubber. Used by some analyzers to remove interfering compounds upstream of a CO electrochemical cell. The scrubbing agent should be visible and should have a means of determining when the agent is exhausted (e.g., color indication).

5.1.12 NO Cell Temperature Indicator. A thermocouple, thermistor, or other device must be used to monitor the temperature of the NO electrochemical cell. The temperature may be monitored at the surface of the cell, within the cell or in the cell compartment. Alternatively, manufacturer's documentation may be submitted showing the analyzer incorporates a NO cell temperature control and temperature exceedance warning system.

5.1.13 Dilution Systems. The use of dilution systems will be allowed with prior approval of the Air Quality Division.

5.2 Calibration Gases. The CO, NO, and NO₂ calibration gases for the gas analyzer shall be CO in nitrogen or CO in nitrogen and O₂, NO in nitrogen, and NO₂ in air or nitrogen. The mid-level O₂ gas shall be O₂ in nitrogen.

5.2.1 Span Gases. Used for calibration error, linearity, and interference checks of each nominal range of each cell. Select concentrations according to procedures in Section 2.1. Clean dry air may be used as the span gas for the O₂ cell as specified in Section 2.1.3.

5.2.2 Mid-Level Gases. Select concentrations that are 40-60 percent of the span gas concentrations.

5.2.3 Zero Gas. Concentration of less than 0.25 percent of the span gas for each component. Ambient air may be used in a well ventilated area for the CO, NO, and NO₂ zero gases.

6. MEASUREMENT SYSTEM PERFORMANCE CHECK PROCEDURES. Perform the following procedures before the measurement of emissions under Section 7.

6.1 Calibration Gas Concentration Certification. For the mid-level and span cylinder gases, use calibration gases certified according to EPA Protocol 1 procedures. Calibration gases must meet the criteria under 40 CFR 60, Appendix F, Section 5.1.2 (3). Expired Protocol 1 gases may be recertified using the applicable reference methods.

6.2 Linearity Check. Conduct the following procedure once for each nominal range to be used on each electrochemical cell (NO, NO₂, CO, and O₂). After a linearity check is completed, it remains valid for five consecutive calendar days. After the five calendar day period has elapsed, the linearity check must be reaccomplished. Additionally, reaccomplish the linearity check if the cell is replaced. (If the stack NO₂ concentration is less than 5% of the stack NO concentration as determined using the emission test procedures under Section 7, the NO₂ linearity check is not required. However, the NO₂ cell shall be calibrated in accordance with the manufacturer's instructions, the pretest calibration error check and post test calibration error check shall be conducted in accordance with Section 7, and the test results shall be added to the NO test values to obtain a total NO_x concentration.)

6.2.1 Linearity Check Gases. For each cell obtain the following gases: zero (0-0.25 percent of nominal range), mid-level (40-60 percent of span gas concentration), and span gas (selected according to Section 2.1).

6.2.2 Linearity Check Procedure. If the analyzer uses an external interference gas scrubber with a color indicator, using the analyzer manufacturer's recommended procedure, verify the scrubbing agent is not depleted. After calibrating the analyzer with zero and span gases, inject the zero, mid-level, and span gases appropriate for each nominal range to be used on each cell. Gases need not be injected through the entire sample handling system. Purge the analyzer briefly with ambient air between gas injections. For each gas injection, verify the flow rate is constant and the analyzer responses have stabilized before recording the responses on Form A.

6.3 Interference Check. A CO cell response to the NO and NO₂ span gases or an NO cell response to the NO₂ span gas during the linearity check may indicate interferences. If these cell responses are observed during the linearity check, it may be desirable to quantify the CO cell response to the NO and NO₂ span gases and the NO cell response to the NO₂ span gas during the linearity check and use estimated stack gas CO, NO and NO₂ concentrations to evaluate whether or not the portable analyzer will meet the post test interference check requirements of Section 7.7. This evaluation using the linearity check data is optional. However, the interference checks

under Section 7.7 are mandatory for each test.

6.4 Stability Check. Conduct the following procedure once for the maximum nominal range to be used on each electrochemical cell (NO, NO₂ and CO). After a stability check is completed, it remains valid for five consecutive calendar days. After the five calendar day period has elapsed, the stability check must be reaccomplished. Additionally, reaccomplish the stability check if the cell is replaced or if a cell is exposed to gas concentrations greater than 125 percent of the highest span gas concentration. (If the stack NO₂ concentration is less than 5% of the stack NO concentration as determined using the emission test procedures under Section 7, the NO₂ stability check is not required. However, the NO₂ cell shall be calibrated in accordance with the manufacturer's instructions, the pretest calibration error check and post test calibration calibration error check shall be conducted in accordance with Section 7, and the test results shall be added to the NO test values to obtain a total NO_x concentration.)

6.4.1 Stability Check Procedure. Inject the span gas for the maximum nominal range to be used during the emission testing into the analyzer and record the analyzer response at least once per minute until the conclusion of the stability check. One-minute average values may be used instead of instantaneous readings. After the analyzer response has stabilized, continue to flow the span gas for at least a 30-minute stability check period. Make no adjustments to the analyzer during the stability check except to maintain constant flow. Record the stability time as the number of minutes elapsed between the start of the gas injection and the start of the 30-minute stability check period. As an alternative, if the concentration reaches a peak value within five minutes, you may choose to record the data for at least a 15-minute stability check period following the peak.

6.4.2 Stability Check Calculations. Determine the highest and lowest concentrations recorded during the 30-minute period and record the results on Form B. The absolute value of the difference between the maximum and minimum values recorded during the 30-minute period must be less than 3.0 percent of the span gas concentration. Alternatively, record stability check data in the same manner for the 15-minute period following the peak concentration. The

difference between the maximum and minimum values for the 15-minute period must be less than 2.0 percent of the span gas concentration.

7. EMISSION TEST PROCEDURES. Prior to performing the following emission test procedures, calibrate/challenge all electrochemical cells in the analyzer in accordance with the manufacturer's instructions.

7.1 Selection of Sampling Site and Sampling Points.

7.1.1 Reciprocating Engines. Select a sampling site located at least two stack diameters downstream of any disturbance (e.g., turbocharger exhaust, crossover junction, or recirculation take-offs) and one half stack diameter upstream of the gas discharge to the atmosphere. Use a sampling location at a single point near the center of the duct.

7.1.2 Combustion Turbines. Select a sampling site and sample points according to the procedures in 40 CFR 60, Appendix A, Method 20. Alternatively, the tester may choose an alternative sampling location and/or sample from a single point in the center of the duct if previous test data demonstrate the stack gas concentrations of CO, NO_x, and O₂ do not vary significantly across the duct diameter.

7.1.3 Boilers/Process Heaters. Select a sampling site located at least two stack diameters downstream of any disturbance and one half stack diameter upstream of the gas discharge to the atmosphere. Use a sampling location at a single point near the center of the duct.

7.2 Warm Up Period. Assemble the sampling system and allow the analyzer and sample interface to warm up and adjust to ambient temperature at the location where the stack measurements will take place.

7.3 Pretest Calibration Error Check. Conduct a zero and span calibration error check before testing each new source. Conduct the calibration error check near the sampling location just prior to the start of an emissions test. Keep the analyzer in the same location until the post test calibration error check is conducted.

7.3.1 Scrubber Inspection. For analyzers that use an external interference gas scrubber tube, inspect the condition of the scrubbing agent and ensure it will not be exhausted during sampling. If scrubbing agents are recommended by the manufacturer, they should be in place during all sampling, calibration and performance checks.

7.3.2 Zero and Span Procedures. Inject the zero and span gases using the calibration assembly. Ensure the calibration gases flow through all parts of the sample interface. During this check, make no adjustments to the system except those necessary to achieve the correct calibration gas flow rate at the analyzer. Set the analyzer flow rate to the value recommended by the analyzer manufacturer. Allow each reading to stabilize before recording the result on Form C. The time allowed for the span gas to stabilize shall be no less than the stability time noted during the stability check. After achieving a stable response, disconnect the gas and briefly purge with ambient air.

7.3.3 Response Time Determination. Determine the NO and CO response times by observing the time required to respond to 95 percent of a step change in the analyzer response for both the zero and span gases. Note the longer of the two times as the response time. For the NO₂ span gas record the time required to respond to 90 percent of a step change.

7.3.4 Failed Pretest Calibration Error Check. If the zero and span calibration error check results are not within the specifications in Section 4, take corrective action and repeat the calibration error check until acceptable performance is achieved.

7.4 NO Cell Temperature Monitoring. Record the initial NO cell temperature during the pretest calibration error check on Form C and monitor and record the temperature regularly (at least once each 7 minutes) during the sample collection period on Form D. If at any time during sampling, the NO cell temperature is 85 degrees F or greater and has increased or decreased by more than 5 degrees F since the pretest calibration, stop sampling immediately and conduct a post test calibration error check per Section 7.6, re-zero the analyzer, and then conduct another pretest calibration error check per Section 7.3 before continuing. (It is recommended that testing be discontinued if the NO cell exceeds 85 degrees F since the design characteristics of the NO cell indicate a significant measurement error can occur as the temperature of the NO cell increases above this temperature. From a review of available data, these errors appear to result in a positive bias of the test results.)

Alternatively, manufacturer's documentation may be submitted showing the analyzer is configured with an automatic temperature control system to maintain the cell temperature below 85 degrees F (30 degrees centigrade) and provides automatic temperature reporting any time this temperature is exceeded. If automatic temperature control/exceedance reporting is used, test data collected when the NO cell temperature exceeds 85 degrees F is invalid.

7.5 Sample Collection. Position the sampling probe at the first sample point and begin sampling at the same rate used during the calibration error check. Maintain constant rate sampling (± 10 percent of the analyzer flow rate value used in Section 7.3.2) during the entire test. Sample for an equal period of time at each sample point. Sample the stack gas for at least twice the response time or the period of the stability time, whichever is greater, before collecting test data at each sample point. A 21 minute period shall be considered a test for each source. When sampling combustion turbines per Section 7.1.2, collect test data as required to meet the requirements of 40 CFR 60, Appendix A, Method 20. Data collection should be performed for

an equal amount of time at each sample point and for a minimum of 21 minutes total. The concentration data must be recorded either (1) at least once each minute, or (2) as a block average for the test using values sampled at least once each minute. Do not break any seals in the sample handling system until after the post test calibration error check (this includes opening the moisture removal system to drain condensate).

7.6 Post Test Calibration Error Check. Immediately after the test, conduct a zero and span calibration error check using the procedure in Section 7.3. Conduct the calibration error check at the sampling location. Make no changes to the sampling system or analyzer calibration until all of the calibration error check results have been recorded. If the zero or span calibration error exceeds the specifications in Section 4, then all test data collected since the previous calibration error check are invalid. If the sampling system is disassembled or the analyzer calibration is adjusted, repeat the pretest calibration error check before conducting the next test.

7.7 Interference Check. Use the post test calibration error check results and average emission concentrations for the test to calculate interference responses (I_{NO} and I_{CO}) for the CO and NO cells. If an interference response exceeds 5 percent, all emission test results since the last successful interference test for that compound are invalid.

7.7.1 CO Interference Response.

$$I_{CO} = \left[\left(\frac{R_{CO-NO}}{C_{NOG}} \right) \left(\frac{C_{NOS}}{C_{COS}} \right) + \left(\frac{R_{CO-NO_2}}{C_{NO_2G}} \right) \left(\frac{C_{NO_2S}}{C_{COS}} \right) \right] \times 100$$

where:

- I_{CO} = CO interference response (percent)
- R_{CO-NO} = CO response to NO span gas (ppm CO)
- C_{NOG} = concentration of NO span gas (ppm NO)
- C_{NOS} = concentration of NO in stack gas (ppm NO)
- C_{COS} = concentration of CO in stack gas (ppm CO)
- R_{CO-NO_2} = CO response to NO₂ span gas (ppm CO)
- C_{NO_2G} = concentration of NO₂ span gas (ppm NO₂)

C_{NO_2S} = concentration of NO_2 in stack gas (ppm NO_2)

7.7.2 NO Interference Response.

$$I_{NO} = \left(\frac{R_{NO-NO_2}}{C_{NO_2G}} \right) \left(\frac{C_{NO_2S}}{C_{NO_xS}} \right) \times 100$$

where:

- I_{NO} = NO interference response (percent)
- R_{NO-NO_2} = NO response to NO_2 span gas (ppm NO)
- C_{NO_2G} = concentration of NO_2 span gas (ppm NO_2)
- C_{NO_2S} = concentration of NO_2 in stack gas (ppm NO_2)
- C_{NO_xS} = concentration of NO_x in stack gas (ppm NO_x)

7.8 Re-Zero. At least once every three hours, recalibrate the analyzer at the zero level according to the manufacturer's instructions and conduct a pretest calibration error check before resuming sampling. If the analyzer is capable of reporting negative concentration data (at least 5 percent of the span gas below zero), then the tester is not required to re-zero the analyzer.

8. DATA COLLECTION. This section summarizes the data collection requirements for this protocol.

8.1 Linearity Check Data. Using Form A, record the analyzer responses in ppm NO, NO₂, and CO, and percent O₂ for the zero, mid-level, and span gases injected during the linearity check under Section 6.2.2. To evaluate any interferences, record the analyzer responses in ppm CO to the NO and NO₂ span gases and the analyzer response in ppm NO to the NO₂ span gas. Calculate the CO and NO interference responses using the equations under Sections 7.7.1 and 7.7.2, respectively, and estimated stack gas CO, NO and NO₂ concentrations.

8.2 Stability Check Data. Record the analyzer response at least once per minute during the stability check under Section 6.4.1. Use Form B for each pollutant (NO, NO₂, and CO). One-minute average values may be used instead of instantaneous readings. Record the stability time as the number of minutes elapsed between the start of the gas injection and the start of the 30-minute stability check period. If the concentration reaches a peak value within five minutes of the gas injection, you may choose to record the data for at least a 15-minute stability check period following the peak. Use the information recorded to determine the analyzer stability under Section 6.4.2.

8.3 Pretest Calibration Error Check Data. On Form C, record the analyzer responses to the zero and span gases for NO, NO₂, CO, and O₂ injected prior to testing each new source. Record the calibration zero and span gas concentrations for NO, NO₂, CO, and O₂. For NO, NO₂ and CO, record the absolute difference between the analyzer response and the calibration gas concentration, divide by the span gas concentration, and multiply by 100 to obtain the percent of span. For O₂, record the absolute value of the difference between the analyzer response and the O₂ calibration gas concentration. Record whether the calibration is valid by comparing the percent of span or difference between the calibration gas concentration and analyzer O₂ response, as applicable, with the specifications under Section 4.1 for the zero calibrations and Section 4.2 for the span calibrations. Record the response times for the NO, CO, and NO₂ zero and span gases as described under Section 7.3.3. Select the longer of the two times for each pollutant as

the response time for that pollutant. Record the NO cell temperature during the pretest calibration.

8.4 Test Data. On Form D-1, D-2, or D-3, record the source operating parameters during the test. Record the test start and end times. Record the NO cell temperature after one third of the test (e.g., after seven minutes) and after two thirds of the test (e.g., after 14 minutes). From the analyzer responses recorded each minute during the test, obtain the average flue gas concentration of each pollutant. These are the uncorrected test results.

8.5 Post Test Calibration Error Check Data. On Form C, record the analyzer responses to the zero and span gases for NO, NO₂, CO, and O₂ injected immediately after the test. To evaluate any interferences, record the analyzer responses in ppm CO to the NO and NO₂ span gases and the analyzer response in ppm NO to the NO₂ span gas. Record the calibration zero and span gas concentrations for NO, NO₂, CO, and O₂. For NO, NO₂ and CO, record the absolute difference between the analyzer response and the calibration gas concentration, divide by the span gas concentration, and multiply by 100 to obtain the percent of span. For O₂, record the absolute value of the difference between the analyzer response and the O₂ calibration gas concentration. Record whether the calibration is valid by comparing the percent of span or difference between the calibration gas concentration and analyzer O₂ response, as applicable, with the specifications under Section 4.1 for the zero calibrations and Section 4.2 for the span calibrations. (If the pretest and post test calibration error check results are not within the limits specified in Sections 4.1 and 4.2, data collected during the test is invalid and the test must be repeated.) Record the NO cell temperature during the post test calibration. Calculate the average of the monitor readings during the pretest and post test calibration error checks for the zero and span gases for NO, NO₂, CO, and O₂. The pretest and post test calibration error check results are used to make the calibration corrections under Section 9.1. Calculate the CO and NO interference responses using the equations under Sections 7.7.1 and 7.7.2, respectively and measured stack gas CO, NO and NO₂ concentrations.

8.6 Corrected Test Results. Correct the test results using the equation under Section 9.1. Add

the corrected NO and NO₂ concentrations together to obtain the corrected NO_x concentration. Calculate the emission rates using the equations under Section 10 for comparison with the emission limits. Record the results on Form D-1, D-2, or D-3. Sign the certification regarding the accuracy and representation of the emissions from the source.

9. CALIBRATION CORRECTIONS

9.1 Emission Data Corrections. Emissions data shall be corrected for a test using the following equation. (Note: If the pretest and post test calibration error check results are not within the limits specified in Sections 4.1 and 4.2, the test results are invalid and the test must be repeated.)

$$C_{Corrected} = (C_R - C_O) \frac{C_{MA}}{C_M - C_O}$$

where: $C_{Corrected}$ = corrected flue gas concentration (ppm)
 C_R = flue gas concentration indicated by gas analyzer (ppm)
 C_O = average of pretest and post test analyzer readings during the zero checks (ppm)
 C_M = average of pretest and post test analyzer readings during the span checks (ppm)
 C_{MA} = actual concentration of span gas (ppm)

10. EMISSION CALCULATIONS

10.1 Emission Calculations for Reciprocating Engines and Combustion Turbines.

Emissions shall be calculated and reported in units of the allowable emission limit as specified in the permit. The allowable may be stated in pounds per hour (lb/hr), grams per horsepower hour (gm/hp-hr), or both. EPA Reference Method 19 shall be used as the basis for calculating the emissions. As an alternative, EPA Reference Methods 1-4 may be used to obtain a stack volumetric flow rate.

10.1.1 Reciprocating Engines and Combustion Turbines Above 500 Horsepower. All reciprocating engines and combustion turbines above 500 horsepower (site-rated) should be equipped with fuel flow meters for measuring fuel consumption during the portable analyzer test.

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The fuel meter shall be maintained and calibrated according to the manufacturer's recommendations. Records of all maintenance and calibrations shall be kept for five years. Reciprocating engines above 500 horsepower which are not equipped with fuel flow meters may use the site-rated horsepower and default specific fuel consumption factors, based on the higher heating value of the fuel, of 9,400 Btu/hp-hr for 4-cycle engines (controlled and uncontrolled) and 2-cycle lean burn engines and 11,000 Btu/hp-hr for 2-cycle uncontrolled (non-lean burn) engines to calculate emission rates. Emissions shall be calculated using the following methods.

10.1.1.1 Reciprocating Engines and Combustion Turbines Equipped with Fuel Meters.

EPA Reference Method 19 and heat input per hour (MMBtu/hr) shall be used to calculate a pound per hour emission rate. Heat input per hour shall be based on the average hourly fuel usage rate during the test and the higher heating value of the fuel consumed. The emission rates shall be calculated using the following equations.

$$lb/hr NO_x = (ppm NO_{x,corrected})(1.19 \times 10^7)(F Factor_{Note1}) \left(\frac{20.9}{20.9 - O_2\%_{corrected}} \right) (Heat Input Per Hour_{Note2})$$

$$lb/hr CO = (ppm CO_{corrected})(7.27 \times 10^{-8})(F Factor_{Note1}) \left(\frac{20.9}{20.9 - O_2\%_{corrected}} \right) (Heat Input Per Hour_{Note2})$$

Note 1 - Use 8710 dscf/MMBtu unless calculated based on actual fuel gas composition and higher heating value of the fuel.

Note 2 - Heat input per hour (MMBtu/hr) shall be based on the average hourly fuel usage during the test and the higher heating value of the fuel consumed.

If the reciprocating engine or combustion turbine horsepower can be derived from operating conditions during the portable analyzer test, this derived horsepower should be used to calculate a gram per horsepower hour emission rate using the following equations. Information showing the derivation of the horsepower shall be provided with the test results.

$$gm/hp - hr CO = \frac{(lb/hr CO)(454)}{(Tested Horsepower_{Note 1})}$$

$$gm/hp - hr NO_x = \frac{(lb/hr NO_x)(454)}{(Tested Horsepower_{Note 1})}$$

Note 1 - Horsepower determined during the test.

If the reciprocating engine horsepower during the time of testing cannot be determined from the operating data, the operating horsepower for the time of the test shall be calculated based on the heat input per hour during the test and the default values shown below for specific fuel consumption based on the higher heating value of the fuel. Heat input per hour (MMBtu/hr) shall be calculated based on the average hourly fuel usage during the test and the higher heating value of the fuel consumed. For 4-cycle engines (controlled and uncontrolled) and 2-cycle lean burn engines, use a default specific fuel consumption of 9,400 Btu/hp-hr. For 2-cycle uncontrolled (non-lean burn) engines, use a default specific fuel consumption of 11,000 Btu/hp-hr. Calculate the gram per horsepower hour emission rates using the following equations.

$$Engine\ Horsepower = \frac{(Heat\ Input\ Per\ Hour_{Note 1})(10^6)}{(Specific\ Fuel\ Consumption_{Note 2})}$$

$$gm/hp - hr NO_x = \frac{(lb/hr NO_x)(454)}{(Engine\ Horsepower)}$$

$$gm/hp - hr CO = \frac{(lb/hr CO)(454)}{(Engine\ Horsepower)}$$

Note 1 - Heat input per hour (MMBtu/hr) shall be based on the average hourly fuel usage during the test and the higher heating value of the fuel consumed.

Note 2 - Default Specific Fuel Consumption (Btu/hp-hr) shall be as defined above for the particular type of engine tested.

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If the combustion turbine horsepower cannot be calculated during the testing, the emissions shall be reported in terms of concentration (ppm by volume, dry basis) corrected to 15 percent O₂. Compliance with the concentrations corrected to 15 percent O₂ as submitted in the air quality permit application and/or set as an allowable in the permit will demonstrate compliance with the gm/hp-hr allowable. Use the following equations to correct the concentrations to 15 percent O₂.

$$ppm NO_{X @ 15\% O_2} = ppm NO_{X corrected} \left(\frac{5.9}{20.9 - O_2 \%_{corrected}} \right)$$

$$ppm CO_{@ 15\% O_2} = ppm CO_{corrected} \left(\frac{5.9}{20.9 - O_2 \%_{corrected}} \right)$$

10.1.1.2 Reciprocating Engines Above 500 Horsepower Not Equipped with Fuel Meters. If reciprocating engines above 500 horsepower (site-rated) are not equipped with fuel flow meters during the test, emissions shall be calculated using the site-rated horsepower and default specific fuel consumption factors, based on the higher heating value of the fuel, of 9,400 Btu/hp-hr for 4-cycle engines (controlled and uncontrolled) and 2-cycle lean burn engines and 11,000 Btu/hp-hr for 2-cycle uncontrolled (non-lean burn) engines. The following equations shall be used to calculate emissions.

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$$\text{gm/hp} - \text{hr } NO_x = (\text{ppm } NO_{x \text{ corrected}})(1.19 \times 10^{-7})(F \text{ Factor }_{\text{Note 1}})\left(\frac{20.9}{20.9 - O_2\% \text{ corrected}}\right) \\ (\text{Specific Fuel Consumption }_{\text{Note 2}})(10^{-6})(454)$$

$$\text{lb/hr } NO_x = \frac{(\text{gm/hp} - \text{hr } NO_x)(\text{Engine Horsepower }_{\text{Note 3}})}{454}$$

$$\text{gm/hp} - \text{hr } CO = (\text{ppm } CO_{\text{corrected}})(7.27 \times 10^{-8})(F \text{ Factor }_{\text{Note 1}})\left(\frac{20.9}{20.9 - O_2\% \text{ corrected}}\right) \\ (\text{Specific Fuel Consumption }_{\text{Note 2}})(10^{-6})(454)$$

$$\text{lb/hr } CO = \frac{(\text{gm/hp} - \text{hr } CO)(\text{Engine Horsepower }_{\text{Note 3}})}{454}$$

Note 1 - Use 8710 dscf/MMBtu unless calculated based on actual fuel gas composition and higher heating value of the fuel.

Note 2 - Default Specific Fuel Consumption (Btu/hp-hr) shall be as defined above for the particular type of engine tested.

Note 3 - Site-rated engine horsepower.

10.1.2 Reciprocating Engines Below 500 Horsepower. Reciprocating engines below 500 horsepower may calculate emission rates using the derived horsepower for the operating conditions during the portable analyzer test (either from engine parameter measurements or calculated from compressor operating parameters) and the manufacturer's specific fuel consumption based on the higher heating value of the fuel consumed during the test. Information showing the derivation of the engine operating horsepower and manufacturer's specific fuel consumption shall be provided with the test results. The following equations shall be used to calculate emission rates.

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$$\text{gm/hp} - \text{hr } NO_x = (\text{ppm } NO_x \text{ corrected})(1.19 \times 10^{-7})(F \text{ Factor}_{\text{Note 1}})\left(\frac{20.9}{20.9 - O_2\% \text{ corrected}}\right) \\ (\text{Specific Fuel Consumption}_{\text{Note 2}})(10^{-6})(454)$$

$$\text{gm/hp} - \text{hr } CO = (\text{ppm } CO \text{ corrected})(7.27 \times 10^{-8})(F \text{ Factor}_{\text{Note 1}})\left(\frac{20.9}{20.9 - O_2\% \text{ corrected}}\right) \\ (\text{Specific Fuel Consumption}_{\text{Note 2}})(10^{-6})(454)$$

Note 1 - Use 8710 dscf/MMBtu unless calculated based on actual fuel gas composition and the higher heating value of the fuel.

Note 2 - Use manufacturer's specific fuel consumption based on the higher heating value of the fuel and include manufacturer's data with the test results. If the manufacturer reports the specific fuel consumption based on the lower heating value of the fuel, multiply by 1.11 to obtain the specific fuel consumption based on the higher heating value of the fuel.

Pound per hour emission rates shall be calculated using the gram per horsepower hour emission rates and the engine horsepower derived from engine or compressor operating parameter data. If engine horsepower data is not available, site-rated horsepower shall be used to calculate pound

$$\text{lb/hr } NO_x = \frac{(\text{gm/hp} - \text{hr } NO_x)(\text{Engine Horsepower}_{\text{Note 1}})}{(454)} \\ \text{lb/hr } CO = \frac{(\text{gm/hp} - \text{hr } CO)(\text{Engine Horsepower}_{\text{Note 1}})}{(454)}$$

per hour emissions. The following equations shall be used to calculate emission rates.

Note 1 - Use derived operating horsepower and include derivation method/calculations with the test results.

If a derived horsepower is not available or cannot be obtained, use site-rated horsepower.

10.2 Emission Calculations for Heaters/Boilers. For heaters and boilers, pound per million Btu (lb/MMBtu) emission rates shall be calculated based on EPA Reference Method 19. The pound per million Btu emission rates shall be converted to pound per hour emission rates using heat input per hour (MMBtu/hr). The heat input per hour shall be calculated using the average hourly fuel usage rate during test and the higher heating value of the fuel consumed or the permitted maximum heat input per hour for the boiler or heater. If a fuel meter is used to obtain heat input per hour data, the fuel meter shall be maintained and calibrated according to the manufacturer's recommendations. Records of all maintenance and calibrations shall be kept for five years. As an alternative, EPA Reference Methods 1-4 may be used to obtain a stack volumetric flow rate. The following equations shall be used to calculate emission rates.

$$lb/MMBtu NO_x = (ppm NO_x \text{ corrected})(1.19 \times 10^{-7})(F \text{ Factor}_{\text{Note 1}})\left(\frac{20.9}{20.9 - O_2\% \text{ corrected}}\right)$$

$$lb/MMBtu CO = (ppm CO \text{ corrected})(7.27 \times 10^{-8})(F \text{ Factor}_{\text{Note 1}})\left(\frac{20.9}{20.9 - O_2\% \text{ corrected}}\right)$$

$$lb/hr NO_x = (lb/MMBtu NO_x)(Heat Input_{\text{Note 2}})$$

$$lb/hr CO = (lb/MMBtu CO)(Heat Input_{\text{Note 2}})$$

Note 1 - Use 8710 dscf/MMBtu unless calculated based on actual fuel gas composition and the higher heating value of the fuel.

Note 2 - Heat input shall be based on the average hourly fuel usage rate during the test and the higher heating value of the fuel consumed if the boiler/heater is equipped with a fuel meter or the permitted maximum heat input if a fuel meter is not available.

11. REPORTING REQUIREMENTS AND RECORD KEEPING REQUIREMENTS

Test reports shall be submitted to the Air Quality Division within thirty (30) days of completing the test unless a specific reporting schedule is set by a condition of a permit. A separate test report shall be submitted for each emission source tested and, at a minimum, the following information shall be included:

- **Form A, Linearity Check Data Sheet**, Submit the linearity check as required by Section 6.2 for the nominal range tested.
- **Form B, Stability Check Data Sheet**, Submit the stability check as required by Section 6.4 for the nominal range tested.
- **Form C, Calibration Error Check Data Sheet**
- **Form D-1, D-2 or D-3**, Submit the appropriate test results form for type of source tested.
- If the manufacturer's specific fuel consumption is used, documentation from the manufacturer shall be submitted.
- If the horsepower is calculated during the test, information showing the derivation of the horsepower shall be included.

For sources subject to Section 30 of the Wyoming Air Quality Standards and Regulations, the submittal must be certified as truthful, accurate and complete by the facility's responsible official.

Records pertaining to the information above and supporting documentation shall be kept for five (5) years and made available upon request by this Division. Additionally, if the source is equipped with a fuel meter, records of all maintenance and calibrations of the fuel meter shall be kept for five (5) years from the date of the last maintenance or calibration.

Form A

Linearity Check Data Sheet

Date: _____

Analyst: _____

Analyzer Manufacturer/Model #: _____

Analyzer Serial #: _____

LINEARITY CHECK									
Pollutant		Calibration Gas Concentration (Indicate Units)	Analyzer Response ppm NO	Analyzer Response ppm NO ₂	Analyzer Response ppm CO	Analyzer Response % O ₂	Absolute Difference (Indicate Units)	Percent of Span	Linearity Valid (Yes or No)
NO	Zero								
	Mid								
	Span								
NO ₂	Zero								
	Mid								
	Span								
CO	Zero								
	Mid								
	Span								
O ₂	Zero								
	Mid								
	Span								

Form B Stability Check Data Sheet

Date: _____ Analyst: _____

Analyzer Manufacturer/Model #: _____

Analyzer Serial #: _____

Pollutant: NO, NO₂, CO (Circle One) Span Gas Concentration (ppm): _____

STABILITY CHECK					
Elapsed Time (Minutes)	Analyzer Response	Elapsed Time (Continued)	Analyzer Response	Elapsed Time (Continued)	Analyzer Response
1		17		33	
2		18		34	
3		19		35	
4		20		36	
5		21		37	
6		22		38	
7		23		39	
8		24		40	
9		25		41	
10		26		42	
11		27		43	
12		28		44	
13		29		45	
14		30		46	
15		31		47	
16		32		48	

For 30-minute Stability Check Period:

Maximum Concentration (ppm): _____ Minimum Concentration (ppm): _____

For 15-minute Stability Check Period:

Maximum Concentration (ppm): _____ Minimum Concentration (ppm): _____

Maximum Deviation = 100*(Max. Conc. - Min. Conc.)/Span Gas Conc. = _____ percent

Stability Time (minutes): _____

Form C Calibration Error Check Data Sheet

Company: _____ Facility: _____
 Source Tested: _____ Date: _____
 Analyst: _____ Analyzer Serial #: _____
 Analyzer Manufacturer/Model #: _____

PRETEST CALIBRATION ERROR CHECK								
			A	B	A-B	A-B /SG*100		
		Pump Flow Rate (Indicate Units)	Analyzer Reading (Indicate Units)	Calibration Gas Concentration (Indicate Units)	Absolute Difference (Indicate Units)	Percent of Span Note 1	Calibration Valid (Yes or No)	Response Time (Minutes)
NO	Zero							
	Span							
NO ₂	Zero							
	Span							
CO	Zero							
	Span							
O ₂	Zero							
	Span							
Pretest Calibration NO Cell Temperature (°F):								

SG = Span Gas

POST TEST CALIBRATION ERROR CHECK										
			A	B	A-B	A-B /SG*100		Interference Check		
		Pump Flow Rate (Indicate Units)	Analyzer Reading (Indicate Units)	Calibration Gas Concentration (Indicate Units)	Absolute Difference (Indicate Units)	Percent of Span Note 1	Calibration Valid (Yes or No)	Average of Pretest and Post Test Analyzer Readings (Indicate Units)	NO Monitor Response (ppm)	CO Monitor Response (ppm)
NO	Zero									
	Span									
NO ₂	Zero									
	Span									
CO	Zero									
	Span									
O ₂	Zero									
	Span									
Post Test Calibration NO Cell Temperature (°F):										
CO Interference Response (I _{CO} , %):					NO Interference Response (I _{NO} , %):					

SG= Span Gas

Note 1: The percent of span calculation is applicable to the NO, NO₂ and CO channels only.

Form D-1 Reciprocating Engine Test Results

Company: _____ Facility: _____
 Source Tested: _____ Date: _____
 Source Manufacturer/Model #: _____
 Site-rated Horsepower: _____ Source Serial #: _____
 Type of Emission Control: _____
 Analyst: _____ Analyzer Serial #: _____
 Analyzer Manufacturer/Model #: _____

Operating Conditions

Source operating at 90 percent or greater site-rated horsepower during testing? yes no

Suction/ Discharge Pressures (Indicate Units)	Engine RPM	Engine Gas Throughput (Indicate Units)	Engine Fuel Consumption (Indicate Units)	Fuel Heat Content (Btu/cf)	Engine Specific Fuel Consumption (Btu/hp-hr) ¹	Engine Tested Horsepower

¹ As reported by the Manufacturer

Test Results

Test Start Time: _____ NO Cell Temperature (°F) after 1/3 (e.g., 7 minutes) of the test: _____

Test End Time: _____ NO Cell Temperature (°F) after 2/3 (e.g., 14 minutes) of the test: _____

NO _x (NO + NO ₂)								
Avg. Tested NO ppm	NO _{corrected} ppm	Avg. Tested NO ₂ ppm	NO _{2 corrected} ppm	NO _{x corrected} ppm	Tested gm/hp-hr	Tested lb/hr	Allowable gm/hp-hr	Allowable lb/hr

O ₂		CO					
Avg. Tested O ₂ %	O _{2 corrected} %	Avg. Tested CO ppm	CO _{corrected} ppm	Tested gm/hp-hr	Tested lb/hr	Allowable gm/hp-hr	Allowable lb/hr

I certify to the best of my knowledge the test results are accurate and representative of the emissions from this source.

_____ **Print Name**

_____ **Signature**

Form D-2 Combustion Turbine Test Results

Company: _____ Facility: _____
 Source Tested: _____ Date: _____
 Source Manufacturer/Model #: _____
 Site-rated Horsepower: _____ Source Serial #: _____
 Type of Emission Control: _____
 Analyst: _____ Analyzer Serial #: _____
 Analyzer Manufacturer/Model #: _____

Operating Conditions

Source operating at 90 percent or greater site-rated horsepower during testing? yes no

Suction/ Discharge Pressures (Indicate Units)	Turbine T ₅ Temperature (°F)	Turbine RPM	Turbine Gas Throughput (Indicate Units)	Turbine Fuel Consumption (Indicate Units)	Fuel Heat Content (Btu/cf)	Turbine Specific Fuel Consumption (Btu/hp-hr) ¹	Turbine Tested Horsepower

¹ As reported by the Manufacturer

Test Results

Test Start Time: _____ NO Cell Temperature (°F) after 1/3 (e.g., 7 minutes) of the test: _____

Test End Time: _____ NO Cell Temperature (°F) after 2/3 (e.g., 14 minutes) of the test: _____

NO _x (NO + NO ₂)										
Avg. Tested NO ppm	NO _{corrected} ppm	Avg. Tested NO ₂ ppm	NO ₂ corrected ppm	NO _x corrected ppm	Tested gm/hp-hr	Tested lb/hr	Tested ppm @ 15% O ₂	Allowable gm/hp-hr	Allowable lb/hr	Allowable ppm @ 15% O ₂

O ₂		CO							
Avg. Tested O ₂ %	O ₂ corrected %	Avg. Tested CO ppm	CO _{corrected} ppm	Tested gm/hp-hr	Tested lb/hr	Tested ppm @ 15% O ₂	Allowable gm/hp-hr	Allowable lb/hr	Allowable ppm @ 15% O ₂

I certify to the best of my knowledge the test results are accurate and representative of the emissions from this source.

Print Name

Signature

Form D-3 Heater/Boiler Test Results

Company: _____ Facility: _____
 Source Tested: _____ Date: _____
 Source Manufacturer/Model #: _____
 Design Firing Rate (MMBtu/hr): _____ Source Serial #: _____
 Type of Emission Control: _____
 Analyst: _____ Analyzer Serial #: _____
 Analyzer Manufacturer/Model #: _____

Operating Conditions

Source operating at 90 percent or greater site-rated horsepower during testing? yes no

Fuel Consumption (cf/hr)	Fuel Heat Content (Btu/cf)	Heater/Boiler Tested Firing Rate (MMBtu/hr)

Test Results

Test Start Time: _____ NO Cell Temperature (°F) after 1/3 (e.g., 7 minutes) of the test: _____

Test End Time: _____ NO Cell Temperature (°F) after 2/3 (e.g., 14 minutes) of the test: _____

NO _x (NO + NO ₂)								
Avg. Tested NO ppm	NO _{corrected} ppm	Avg. Tested NO ₂ ppm	NO _{2 corrected} ppm	NO _{x corrected} ppm	Tested lb/MMBtu	Tested lb/hr	Allowable lb/MMBtu	Allowable lb/hr

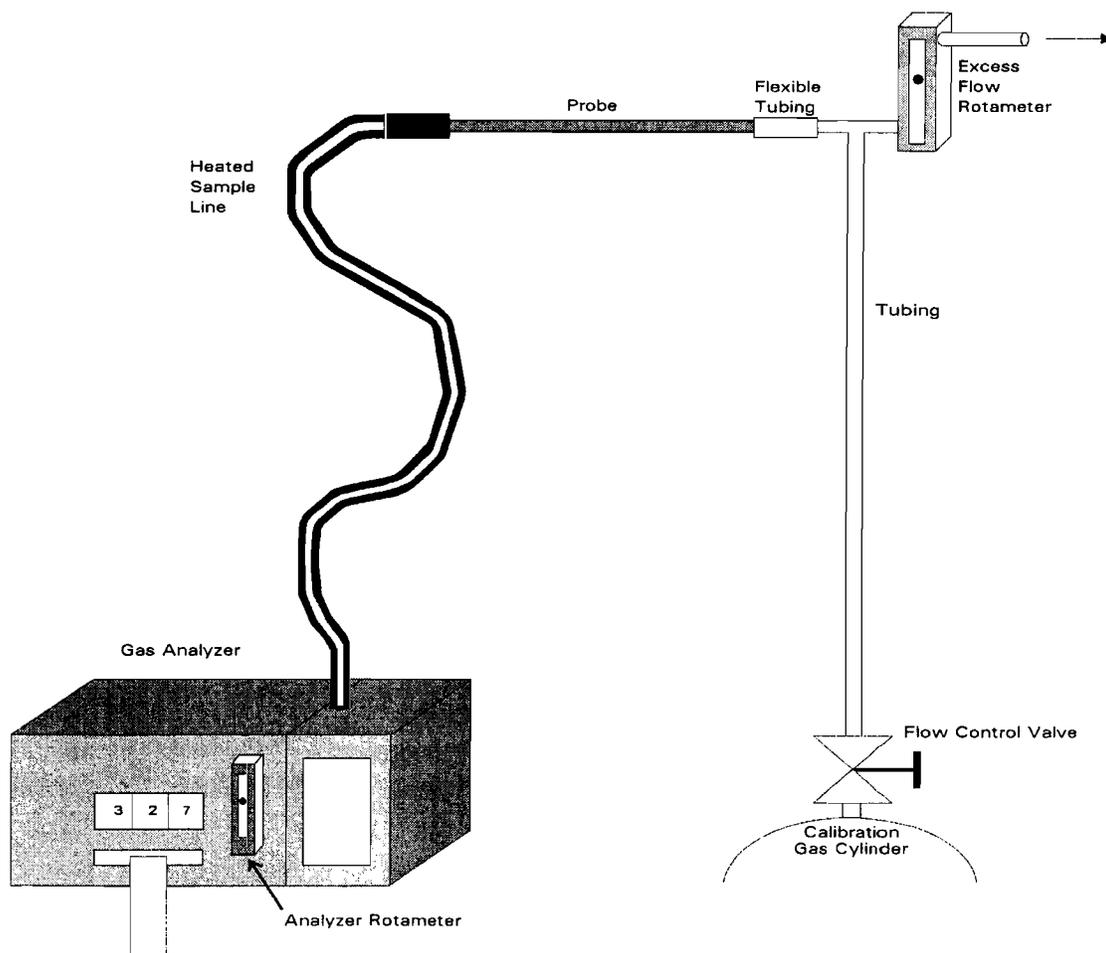
O ₂		CO					
Avg. Tested O ₂ %	O _{2 corrected} %	Avg. Tested CO ppm	CO _{corrected} ppm	Tested lb/MMBtu	Tested lb/hr	Allowable lb/MMBtu	Allowable lb/hr

I certify to the best of my knowledge the test results are accurate and representative of the emissions from this source.

Print Name

Signature

**FIGURE 1.
CALIBRATION SYSTEM SCHEMATIC**



Appendix B
40 CFR Part 63, Subpart ZZZZ

Subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

SOURCE: 69 FR 33506, June 15, 2004, unless otherwise noted.

What This Subpart Covers

§63.6580 What is the purpose of subpart ZZZZ?

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

§63.6585 Am I subject to this subpart?

You are subject to this subpart if you own or operate a stationary RICE at a major source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.

(a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

(b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.

§63.6590 What parts of my plant does this subpart cover?

This subpart applies to each affected source.

(a) *Affected source.* An affected source is any existing, new, or reconstructed stationary RICE with a site-rating of more than 500 brake horsepower located at a major source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

(1) *Existing stationary RICE.* A stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before December 19, 2002. A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

(2) *New stationary RICE.* A stationary RICE is new if you commenced construction of the stationary RICE on or after December 19, 2002.

(3) *Reconstructed stationary RICE.* A stationary RICE is reconstructed if you meet the definition of reconstruction in §63.2 and

reconstruction is commenced on or after December 19, 2002.

(b) *Stationary RICE subject to limited requirements.* (1) An affected source which meets either of the criteria in paragraph (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of §63.6645(d).

(i) The stationary RICE is a new or reconstructed emergency stationary RICE; or

(ii) The stationary RICE is a new or reconstructed limited use stationary RICE.

(2) A new or reconstructed stationary RICE which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of § 63.6645(d) and the requirements of §§ 63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart.

(3) A stationary RICE which is an existing spark ignition 2 stroke lean burn (2SLB) stationary RICE, an existing spark ignition 4 stroke lean burn (4SLB) stationary RICE, an existing compression ignition (CI) stationary RICE, an existing emergency stationary RICE, an existing limited use stationary RICE, or an existing stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, does not have to meet the requirements of this subpart and of subpart A of this part. No initial notification is necessary.

§ 63.6595 When do I have to comply with this subpart?

(a) *Affected sources.* (1) If you have an existing stationary RICE, you must comply with the applicable emission limitations and operating limitations no later than June 15, 2007.

(2) If you start up your new or reconstructed stationary RICE before August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart no later than August 16, 2004.

(3) If you start up your new or reconstructed stationary RICE after August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(b) *Area sources that become major sources.* If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the compliance dates in paragraphs (b)(1) and (2) of this section apply to you.

(1) Any stationary RICE for which construction or reconstruction is commenced after the date when your area source becomes

a major source of HAP must be in compliance with this subpart upon startup of your affected source.

(2) Any stationary RICE for which construction or reconstruction is commenced before your area source becomes a major source of HAP must be in compliance with this subpart within 3 years after your area source becomes a major source of HAP.

(c) If you own or operate an affected source, you must meet the applicable notification requirements in § 63.6645 and in 40 CFR part 63, subpart A.

Emission and Operating Limitations

§63.6600 What emission limitations and operating limitations must I meet?

(a) If you own or operate an existing, new, or reconstructed spark ignition 4 stroke rich burn (4SRB) stationary RICE located at a major source of HAP emissions, you must comply with the emission limitations in Table 1a of this subpart and the operating limitations in Table 1b of this subpart which apply to you.

(b) If you own or operate a new or reconstructed 2SLB or 4SLB stationary RICE or a new or reconstructed CI stationary RICE located at a major source of HAP emissions, you must comply with the emission limitations in Table 2a of this subpart and the operating limitations in Table 2b of this subpart which apply to you.

(c) If you own or operate: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, or an existing CI stationary RICE; a stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis; an emergency stationary RICE; or a limited use stationary RICE, you do not need to comply with the emission limitations in Tables 1a and 2a of this subpart or operating limitations in Tables 1b and 2b of this subpart.

General Compliance Requirements

§63.6605 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limitations and operating limitations in this subpart that apply to you at all times, except during periods of startup, shutdown, and malfunction.

(b) If you must comply with emission limitations and operating limitations, you must operate and maintain your stationary RICE, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at all times, including during startup, shutdown, and malfunction.

Testing and Initial Compliance Requirements

§63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations?

(a) You must conduct the initial performance test or other initial compliance demonstrations in Table 4 of this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in §63.6595 and according to the provisions in §63.7(a)(2).

(b) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you must demonstrate initial compliance with either the proposed emission limitations or the promulgated emission limitations no later than February 10, 2005 or no later than 180 days after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

(c) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, and you chose to comply with the proposed emission limitations when demonstrating initial compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emission limitations by December 13, 2007 or after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

(d) An owner or operator is not required to conduct an initial performance test on units for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (d)(1) through (5) of this section.

(1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.

(2) The test must not be older than 2 years.

(3) The test must be reviewed and accepted by the Administrator.

(4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

(5) The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load.

§63.6615 When must I conduct subsequent performance tests?

If you must comply with the emission limitations and operating limitations, you must conduct subsequent performance tests as specified in Table 3 of this subpart.

§63.6620 What performance tests and other procedures must I use?

(a) You must conduct each performance test in Tables 3 and 4 of this subpart that applies to you.

(b) Each performance test must be conducted according to the requirements in §63.7(e)(1) and under the specific conditions that this subpart specifies in Table 4. The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load.

(c) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §63.7(e)(1).

(d) You must conduct three separate test runs for each performance test required in this section, as specified in §63.7(e)(3). Each test run must last at least 1 hour.

(e)(1) You must use Equation 1 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \quad (\text{Eq. 1})$$

Where:

C_i = concentration of CO or formaldehyde at the control device inlet,

C_o = concentration of CO or formaldehyde at the control device outlet, and

R = percent reduction of CO or formaldehyde emissions.

(2) You must normalize the carbon monoxide (CO) or formaldehyde concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen, or an equivalent percent carbon dioxide (CO₂). If pollutant concentrations are to be corrected to 15 percent oxygen and CO₂ concentration is measured in lieu of oxygen concentration measurement, a CO₂ correction factor is needed. Calculate the CO₂ correction factor as described in paragraphs (e)(2)(i) through (iii) of this section.

(i) Calculate the fuel-specific Fo value for the fuel burned during the test using values obtained from Method 19, section 5.2, and the following equation:

$$F_o = 0.209 \frac{F_d}{F_c} \quad (\text{Eq. 2})$$

Where:

Fo = Fuel factor based on the ratio of oxygen volume to the ultimate CO₂ volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is oxygen, percent/100.

Fd = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, $\text{dscf}/10^6 \text{ Btu}$.

Fc = Ratio of the volume of CO₂ produced to the gross calorific value of the fuel from Method 19, $\text{dscf}/10^6 \text{ Btu}$.

(ii) Calculate the CO₂ correction factor for correcting measurement data to 15 percent oxygen, as follows:

$$X_{\text{CO}_2} = \frac{5.9}{F_o} \quad (\text{Eq. 3})$$

Where:

X_{CO_2} = CO₂ correction factor, percent.

5.9 = 20.9 percent O₂-15 percent O₂, the defined O₂ correction value, percent.

(iii) Calculate the NO_x and SO₂ gas concentrations adjusted to 15 percent O₂ using CO₂ as follows:

$$C_{\text{adj}} = C_d \frac{X_{\text{CO}_2}}{\% \text{CO}_2} \quad (\text{Eq. 4})$$

Where:

%CO₂ = Measured CO₂ concentration measured, dry basis, percent.

(f) If you comply with the emission limitation to reduce CO and you are not using an oxidation catalyst, if you comply with the emission limitation to reduce formaldehyde and you are not using NSCR, or if you comply with the emission limitation to limit the concentration of formaldehyde in the stationary RICE exhaust and you are not using an oxidation catalyst or NSCR, you must petition the Administrator for operating limitations to be established during the initial performance test and continuously monitored thereafter; or for approval of no operating limitations. You must not conduct the initial performance test until after the petition has been approved by the Administrator.

(g) If you petition the Administrator for approval of operating limitations, your petition must include the information described in paragraphs (g)(1) through (5) of this section.

(1) Identification of the specific parameters you propose to use as operating limitations;

(2) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with changes in these parameters, and how limitations on these parameters will serve to limit HAP emissions;

(3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;

(4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and

(5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

(h) If you petition the Administrator for approval of no operating limitations, your petition must include the information described in paragraphs (h)(1) through (7) of this section.

(1) Identification of the parameters associated with operation of the stationary RICE and any emission control device which could change intentionally (e.g., operator adjustment, automatic controller adjustment, etc.) or unintentionally (e.g., wear and tear, error, etc.) on a routine basis or over time;

(2) A discussion of the relationship, if any, between changes in the parameters and changes in HAP emissions;

(3) For the parameters which could change in such a way as to increase HAP emissions, a

discussion of whether establishing limitations on the parameters would serve to limit HAP emissions;

(4) For the parameters which could change in such a way as to increase HAP emissions, a discussion of how you could establish upper and/or lower values for the parameters which would establish limits on the parameters in operating limitations;

(5) For the parameters, a discussion identifying the methods you could use to measure them and the instruments you could use to monitor them, as well as the relative accuracy and precision of the methods and instruments;

(6) For the parameters, a discussion identifying the frequency and methods for recalibrating the instruments you could use to monitor them; and

(7) A discussion of why, from your point of view, it is infeasible or unreasonable to adopt the parameters as operating limitations.

(i) The engine percent load during a performance test must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site-rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.

§63.6625 What are my monitoring, installation, operation, and maintenance requirements?

(a) If you elect to install a CEMS as specified in Table 5 of this subpart, you must install, operate, and maintain a CEMS to monitor CO and either oxygen or CO₂ at both the inlet and the outlet of the control device according to the requirements in paragraphs (a)(1) through (4) of this section.

(1) Each CEMS must be installed, operated, and maintained according to the applicable performance specifications of 40 CFR part 60, appendix B.

(2) You must conduct an initial performance evaluation and an annual relative accuracy test audit (RATA) of each CEMS according to the requirements in §63.8 and according to the applicable performance specifications of 40 CFR part 60, appendix B as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.

(3) As specified in §63.8(c)(4)(ii), each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. You must have at least two data points, with each representing a different 15-minute period, to have a valid hour of data.

(4) The CEMS data must be reduced as specified in § 63.8(g)(2) and recorded in parts per million or parts per billion (as appropriate for the applicable limitation) at 15 percent oxygen or the equivalent CO₂ concentration.

(b) If you are required to install a continuous parameter monitoring system (CPMS) as specified in Table 5 of this subpart, you must install, operate, and maintain each CPMS according to the requirements in §63.8.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must monitor and record your fuel usage daily with separate fuel meters to measure the volumetric flow rate of each fuel. In addition, you must operate your stationary RICE in a manner which reasonably minimizes HAP emissions.

§63.6630 How do I demonstrate initial compliance with the emission limitations and operating limitations?

(a) You must demonstrate initial compliance with each emission and operating limitation that applies to you according to Table 5 of this subpart.

(b) During the initial performance test, you must establish each operating limitation in Tables 1b and 2b of this subpart that applies to you.

(c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in §63.6645.

Continuous Compliance Requirements

§63.6635 How do I monitor and collect data to demonstrate continuous compliance?

(a) If you must comply with emission and operating limitations, you must monitor and collect data according to this section.

(b) Except for monitor malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), you must monitor continuously at all times that the stationary RICE is operating.

(c) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must, however, use all the valid data collected during all other periods.

§63.6640 How do I demonstrate continuous compliance with the emission limitations and operating limitations?

(a) You must demonstrate continuous compliance with each emission limitation and operating limitation in Tables 1a and 1b and Tables 2a and 2b of this subpart that apply to you according to methods specified in Table 6 of this subpart.

(b) You must report each instance in which you did not meet each emission limitation or operating limitation in Tables 1a and 1b and Tables 2a and 2b of this subpart that apply to you. These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in §63.6650. If you change your catalyst, you must reestablish the values of the operating parameters measured during the initial performance test. When you reestablish the values of your operating parameters, you must also conduct a performance test to demonstrate that you are meeting the required emission limitation applicable to your stationary RICE.

(c) During periods of startup, shutdown, and malfunction, you must operate in accordance with your startup, shutdown, and malfunction plan.

(d) Consistent with §§63.6(e) and 63.7(e)(1), deviations from the emission or operating limitations that occur during a period of startup, shutdown, or malfunction are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with the startup, shutdown, and malfunction plan. For new, reconstructed, and rebuilt stationary RICE, deviations from the emission or operating limitations that occur during the first 200 hours of operation from engine startup (engine burn-in period) are not violations.

Rebuilt stationary RICE means a stationary RICE that has been rebuilt as that term is defined in 40 CFR §94.11(a).

(e) You must also report each instance in which you did not meet the requirements in Table 8 of this subpart that apply to you. If you own or operate an existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing CI stationary RICE, an existing emergency stationary RICE, an existing limited use emergency stationary RICE, or an existing stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you do not need to comply with the requirements in Table 8 of this subpart. If you own or operate a new or reconstructed stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new or reconstructed emergency stationary RICE, or a new or reconstructed limited use stationary RICE, you do not need to comply with the requirements in Table 8 of this subpart,

except for the initial notification requirements.

Notifications, Reports, and Records

§63.6645 What notifications must I submit and when?

(a) You must submit all of the notifications in §§63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) that apply to you by the dates specified.

(b) As specified in §63.9(b)(2), if you start up your stationary RICE before the effective date of this subpart, you must submit an Initial Notification not later than December 13, 2004.

(c) If you start up your new or reconstructed stationary RICE on or after August 16, 2004, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

(d) If you are required to submit an Initial Notification but are otherwise not affected by the requirements of this subpart, in accordance with §63.6590(b), your notification should include the information in § 63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE).

(e) If you are required to conduct a performance test, you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin as required in §63.7(b)(1).

(f) If you are required to conduct a performance test or other initial compliance demonstration as specified in Tables 4 and 5 to this subpart, you must submit a Notification of Compliance Status according to §63.9(h)(2)(ii).

(1) For each initial compliance demonstration required in Table 5 of this subpart that does not include a performance test, you must submit the Notification of Compliance Status before the close of business on the 30th day following the completion of the initial compliance demonstration.

(2) For each initial compliance demonstration required in Table 5 of this subpart that includes a performance test conducted according to the requirements in Table 4 to this subpart, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th day following the completion of the performance test according to §63.10(d)(2).

§63.6650 What reports must I submit and when?

(a) You must submit each report in Table 7 of this subpart that applies to you.

(b) Unless the Administrator has approved a different schedule for submission of reports under §63.10(a), you must submit each report

by the date in Table 7 of this subpart and according to the requirements in paragraphs (b)(1) through (5) of this section.

(1) The first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in §63.6595 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your source in §63.6595.

(2) The first Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for your affected source in §63.6595.

(3) Each subsequent Compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) Each subsequent Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(5) For each stationary RICE that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6 (a)(3)(iii)(A), you may submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (4) of this section.

(c) The Compliance report must contain the information in paragraphs (c)(1) through (6) of this section.

(1) Company name and address

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If you had a startup, shutdown, or malfunction during the reporting period, the compliance report must include the information in §63.10(d)(5)(i).

(5) If there are no deviations from any emission or operating limitations that apply to you, a statement that there were no deviations from the emission or operating limitations during the reporting period.

(6) If there were no periods during which the continuous monitoring system (CMS), including CEMS and CPMS, was out-of-control, as specified in §63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period.

(d) For each deviation from an emission or operating limitation that occurs for a stationary RICE where you are not using a

CMS to comply with the emission or operating limitations in this subpart, the Compliance report must contain the information in paragraphs (c)(1) through (4) of this section and the information in paragraphs (d)(1) and (2) of this section.

(1) The total operating time of the stationary RICE at which the deviation occurred during the reporting period.

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(e) For each deviation from an emission or operating limitation occurring for a stationary RICE where you are using a CMS to comply with the emission and operating limitations in this subpart, you must include information in paragraphs (c)(1) through (4) and (e)(1) through (12) of this section.

(1) The date and time that each malfunction started and stopped.

(2) The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration that each CMS was out-of-control, including the information in §63.8(c)(8).

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.

(5) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.

(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period.

(8) An identification of each parameter and pollutant (CO or formaldehyde) that was monitored at the stationary RICE.

(9) A brief description of the stationary RICE.

(10) A brief description of the CMS.

(11) The date of the latest CMS certification or audit.

(12) A description of any changes in CMS, processes, or controls since the last reporting period.

(f) Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6 (a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of this subpart along with, or as part of, the semiannual

monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6 (a)(3)(iii)(A), and the Compliance report includes all required information concerning deviations from any emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.

(g) If you are operating as a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must submit an annual report according to Table 7 of this subpart by the date specified unless the Administrator has approved a different schedule, according to the information described in paragraphs (b)(1) through (b)(5) of this section. You must report the data specified in (g)(1) through (g)(3) of this section.

(1) Fuel flow rate of each fuel and the heating values that were used in your calculations. You must also demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis.

(2) The operating limits provided in your federally enforceable permit, and any deviations from these limits.

(3) Any problems or errors suspected with the meters.

§63.6655 What records must I keep?

(a) If you must comply with the emission and operating limitations, you must keep the records described in paragraphs (a)(1) through (a)(3), (b)(1) through (b)(3) and (c) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in §63.10(b)(2)(xiv).

(2) The records in §63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(3) Records of performance tests and performance evaluations as required in §63.10(b)(2)(viii).

(b) For each CEMS or CPMS, you must keep the records listed in paragraphs (b)(1) through (3) of this section.

(1) Records described in § 63.10(b)(2)(vi) through (xi).

(2) Previous (*i.e.*, superseded) versions of the performance evaluation plan as required in §63.8(d)(3).

(3) Requests for alternatives to the relative accuracy test for CEMS or CPMS as required in §63.8(f)(6)(i), if applicable.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must keep the records of your daily fuel usage monitors.

(d) You must keep the records required in Table 6 of this subpart to show continuous compliance with each emission or operating limitation that applies to you.

§63.6660 In what form and how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review according to §63.10(b)(1).

(b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record readily accessible in hard copy or electronic form on-site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1). You can keep the records off-site for the remaining 3 years.

Other Requirements and Information

§63.6665 What parts of the General Provisions apply to me?

Table 8 of this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you. If you own or operate an existing 2SLB, an existing 4SLB stationary RICE, an existing CI stationary RICE, an existing stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, an existing emergency stationary RICE, or an existing limited use stationary RICE, you do not need to comply with any of the requirements of the General Provisions. If you own or operate a new stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new emergency stationary RICE, or a new limited use stationary RICE, you do not need to comply with the requirements in the General Provisions except for the initial notification requirements.

§63.6670 Who implements and enforces this subpart?

(a) This subpart is implemented and enforced by the U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as the U.S. EPA) has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out whether this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR

part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are:

(1) Approval of alternatives to the non-opacity emission limitations and operating limitations in §63.6600 under §63.6(g).

(2) Approval of major alternatives to test methods under §63.7(e)(2)(ii) and (f) and as defined in §63.90.

(3) Approval of major alternatives to monitoring under §63.8(f) and as defined in §63.90.

(4) Approval of major alternatives to recordkeeping and reporting under §63.10(f) and as defined in §63.90.

(5) Approval of a performance test which was conducted prior to the effective date of the rule, as specified in §63.6610(b).

§63.6675 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA); in 40 CFR 63.2, the General Provisions of this part; and in this section as follows:

Area source means any stationary source of HAP that is not a major source as defined in part 63.

Associated equipment as used in this subpart and as referred to in section 112(n)(4) of the CAA, means equipment associated with an oil or natural gas exploration or production well, and includes all equipment from the well bore to the point of custody transfer, except glycol dehydration units, storage vessels with potential for flash emissions, combustion turbines, and stationary RICE.

CAA means the Clean Air Act (42 U.S.C. 7401 *et seq.*, as amended by Public Law 101-549, 104 Stat. 2399).

Compression ignition engine means any stationary RICE in which a high boiling point liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition, including diesel engines, dual-fuel engines, and engines that are not spark ignition.

Custody transfer means the transfer of hydrocarbon liquids or natural gas: After processing and/or treatment in the producing operations, or from storage vessels or automatic transfer facilities or other such equipment, including product loading racks, to pipelines or any other forms of transportation. For the purposes of this subpart, the point at which such liquids or natural gas enters a natural gas processing plant is a point of custody transfer.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart,

including but not limited to any emission limitation or operating limitation;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limitation or operating limitation in this subpart during malfunction, regardless of whether or not such failure is permitted by this subpart.

(4) Fails to conform to any provision of the applicable startup, shutdown, or malfunction plan, or to satisfy the general duty to minimize emissions established by §63.6(e)(1)(i).

Diesel engine means any stationary RICE in which a high boiling point liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition. This process is also known as compression ignition.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is fuel oil number 2.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and CO₂.

Dual-fuel engine means any stationary RICE in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel.

Emergency stationary RICE means any stationary RICE that operates in an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc. Emergency stationary RICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by the manufacturer, the vendor, or the insurance company associated with the engine. Required testing of such units should be minimized, but there is no time limit on the use of emergency stationary RICE in emergency situations and for routine testing and maintenance. Emergency stationary RICE may also operate an additional 50 hours per year in non-emergency situations.

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Gaseous fuel means a material used for combustion which is in the gaseous state at standard atmospheric temperature and pressure conditions.

Glycol dehydration unit means a device in which a liquid glycol (including, but not limited to, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water in a contact tower or absorption column (absorber). The glycol contacts and absorbs water vapor and other gas stream constituents from the natural gas and becomes "rich" glycol. This glycol is then regenerated in the glycol dehydration unit reboiler. The "lean" glycol is then recycled.

Hazardous air pollutants (HAP) means any air pollutants listed in or pursuant to section 112(b) of the CAA.

ISO standard day conditions means 288 degrees Kelvin (15 degrees Celsius), 60 percent relative humidity and 101.3 kilopascals pressure.

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO₂.

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Limited use stationary RICE means any stationary RICE that operates less than 100 hours per year.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining of natural gas production

Liquid fuel means any fuel in liquid form at standard temperature and pressure, including but not limited to diesel, residual/crude oil, kerosene/ naphtha (jet fuel), and gasoline

Major Source, as used in this subpart, shall have the same meaning as in §63.2, except that:

(1) Emissions from any oil or gas exploration or production well (with its associated equipment (as defined in this section)) and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units, to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;

(2) For oil and gas production facilities, emissions from processes, operations, or equipment that are not part of the same oil and gas production facility, as defined in §63.1271 of subpart HHH of this part, shall not be aggregated;

(3) For production field facilities, only HAP emissions from glycol dehydration units, storage vessel with the potential for flash emissions, combustion turbines and reciprocating internal combustion engines shall be aggregated for a major source determination; and

(4) Emissions from processes, operations, and equipment that are not part of the same natural gas transmission and storage facility, as defined in §63.1271 of subpart HHH of this part, shall not be aggregated.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. May be field or pipeline quality.

Non-selective catalytic reduction (NSCR) means an add-on catalytic nitrogen oxides (NO_x) control device for rich burn engines that, in a two-step reaction, promotes the conversion of excess oxygen, NO_x, CO, and volatile organic compounds (VOC) into CO₂, nitrogen, and water.

Oil and gas production facility as used in this subpart means any grouping of equipment where hydrocarbon liquids are processed, upgraded (i.e., remove impurities or other constituents to meet contract specifications), or stored prior to the point of custody transfer; or where natural gas is processed, upgraded, or stored prior to entering the natural gas transmission and storage source category. For purposes of a major source determination, facility (including a building, structure, or installation) means oil and natural gas production and processing equipment that is located within the boundaries of an individual surface site as defined in this section. Equipment that is part of a facility will typically be located within close proximity to other equipment located at the same facility. Pieces of production equipment or groupings of equipment located on different oil and gas leases, mineral fee tracts, lease tracts, subsurface or surface unit areas, surface fee tracts, surface lease tracts, or separate surface sites, whether or not connected by a road, waterway, power line or pipeline, shall not be considered part of the same facility. Examples of facilities in the oil and natural gas production source category include, but are not limited to, well sites, satellite tank batteries, central tank batteries, a compressor station that transports natural gas to a natural gas processing plant, and natural gas processing plants.

Oxidation catalyst means an add-on catalytic control device that controls CO and VOC by oxidation.

Peaking unit or engine means any standby engine intended for use during periods of high demand that are not emergencies.

Percent load means the fractional power of an engine compared to its maximum manufacturer's design capacity at engine site conditions. Percent load may range between 0 percent to above 100 percent.

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a 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 or the effect it would have on emissions is federally enforceable. For oil and natural gas production facilities subject to subpart HH of this part, the potential to emit provisions in §63.760(a) may be used. For natural gas transmission and storage facilities subject to subpart HHH of this part, the maximum annual facility gas throughput for storage facilities may be determined according to §63.1270(a)(1) and the maximum annual throughput for transmission facilities may be determined according to §63.1270(a)(2).

Production field facility means those oil and gas production facilities located prior to the point of custody transfer.

Production well means any hole drilled in the earth from which crude oil, condensate, or field natural gas is extracted.

Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C₃H₈.

Responsible official means responsible official as defined in 40 CFR 70.2.

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to December 19, 2002 with passive emission control technology for NO_x (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Site-rated HP means the maximum manufacturer's design capacity at engine site conditions.

Spark ignition engine means a type of engine in which a compressed air/fuel mixture is ignited by a timed electric spark generated by a spark plug.

Stationary reciprocating internal combustion engine (RICE) means any reciprocating internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

Stationary RICE test cell/stand means an engine test cell/stand, as defined in subpart P of this part, that tests stationary RICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Storage vessel with the potential for flash emissions means any storage vessel that contains a hydrocarbon liquid with a stock tank gas-to-oil ratio equal to or greater than 0.31 cubic meters per liter and an American Petroleum Institute gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters per day. Flash emissions occur when dissolved hydrocarbons in the fluid evolve from solution when the fluid pressure is reduced.

Subpart means 40 CFR part 63, subpart ZZZZ.

Surface site means any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

TABLE 1a TO SUBPART ZZZZ OF PART 63 — EMISSION LIMITATIONS FOR EXISTING, NEW, AND RECONSTRUCTED SPARK IGNITION, 4SRB STATIONARY RICE

As stated in §§63.6600 and 63.6640, you must comply with the following emission limitations for existing, new and reconstructed 4SRB stationary RICE at 100 percent load plus or minus 10 percent:

For each . . .	You must meet <i>one</i> of the following emission limitations . . .
1. 4SRB RICE	<p>a. Reduce formaldehyde emissions by 76 percent or more. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may reduce formaldehyde emissions by 75 percent or more until June 15, 2007, or</p> <p>b. Limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O₂.</p>

TABLE 1B TO SUBPART ZZZZ OF PART 63 — OPERATING LIMITATIONS FOR EXISTING, NEW, AND RECONSTRUCTED SPARK IGNITION, 4SRB STATIONARY RICE

As stated in §§63.6600, 63.6630 and 63.6640, you must comply with the following operating emission limitations for existing, new and reconstructed 4SRB stationary RICE:

For each . . .	You must meet the following emission limitation . . .
1. 4SRB stationary RICE complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and using NSCR; or 4SRB stationary RICE complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O ₂ and using NSCR.	<p>a. Maintain your catalyst so that the pressure drop across the catalyst does not change by more than two inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst measured during the initial performance test; and</p> <p>b. Maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 750°F and less than or equal to 1250°F.</p>
2. 4SRB stationary RICE complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent if applicable) and not using NSCR; or 4SRB stationary RICE complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O ₂ and not using NSCR.	Comply with any operating limitations approved by the Administrator.

TABLE 2a TO SUBPART ZZZZ OF PART 63 — EMISSION LIMITATIONS FOR NEW AND RECONSTRUCTED LEAN BURN AND COMPRESSION IGNITION STATIONARY RICE

As stated in §§ 63.6600 and 63.6640, you must comply with the following emission limitations for new and reconstructed lean burn and new and reconstructed compression ignition stationary RICE at 100 percent load plus or minus 10 percent:

For each	You must meet the following emission limitation . . .
1. 2SLB stationary RICE . . .	<ul style="list-style-type: none"> a. Reduce CO emissions by 58 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 12 ppmvd or less at 15 percent O₂. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may limit concentration of formaldehyde to 17 ppmvd or less at 15 percent O₂ until June 15, 2007.
2. 4SLB stationary RICE . . .	<ul style="list-style-type: none"> a. Reduce CO emissions by 93 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 14 ppmvd or less at 15 percent O₂.
3. CI stationary RICE	<ul style="list-style-type: none"> a. Reduce CO emissions by 70 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 580 ppbvd or less at 15 percent O₂.

TABLE 2b TO SUBPART ZZZZ OF PART 63 — OPERATING LIMITATIONS FOR NEW AND RECONSTRUCTED LEAN BURN AND COMPRESSION IGNITION STATIONARY RICE

As stated in §§ 63.6600, 63.6630, and 63.6640, you must comply with the following operating limitations for new and reconstructed lean burn and new and reconstructed compression ignition stationary RICE:

For each	You must meet the following operating limitation
1. 2SLB and 4SLB stationary RICE and CI stationary RICE complying with the requirement to reduce CO emissions and using an oxidation catalyst, or 2SLB and 4SLB stationary RICE and CI stationary RICE complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and using an oxidation catalyst.	<ul style="list-style-type: none"> a. Maintain your catalyst so that the pressure drop across the catalyst does not change by more than two inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and b. Maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450°F and less than or equal to 1350°F.
2. 2SLB and 4SLB stationary RICE and CI stationary RICE complying with the requirement to reduce CO emissions and not using an oxidation catalyst, or 2SLB and 4SLB stationary RICE and CI stationary RICE complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and not using an oxidation catalyst.	Comply with any operating limitations approved by the Administrator.

TABLE 3 TO SUBPART ZZZZ OF PART 63 — SUBSEQUENT PERFORMANCE TESTS

As stated in §§ 63.6615 and 63.6620, you must comply with the following subsequent performance test requirements:

For each	Complying with the requirement to . . .	You must
1. 2SLB and 4SLB stationary RICE and CI stationary RICE.	Reduce CO emissions and not using a CEMS	Conduct subsequent performance tests semi-annually. ¹
2. 4SRB stationary RICE with a brake horsepower ≥ 5,000.	Reduce formaldehyde emissions	Conduct subsequent performance tests semi-annually. ¹
3. Stationary RICE (all stationary RICE subcategories and all brake horsepower ratings).	Limit the concentration of formaldehyde in the stationary RICE exhaust.	Conduct subsequent performance tests semi-annually. ¹

¹After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

TABLE 4 TO SUBPART ZZZZ OF PART 63 — REQUIREMENTS FOR PERFORMANCE TESTS

As stated in §§ 63.6610, 63.6620, and 63.6640, you must comply with the following requirements for performance tests:

For each . . .	Complying with the requirement to	You must . . .	Using . .	According to the following requirements
1. 2SLB and 4SLB stationary RICE and CI stationary RICE.	a. Reduce CO emissions	i. Measure the O ₂ at the inlet and outlet of the control device; and	(1) Portable CO and O ₂ analyzer.	(a) Using ASTM D6522-00 ¹ (incorporated by reference, see § 63.14). Measurements to determine O ₂ must be made at the same time as the measurements for CO concentration.
		ii. Measure the CO at the inlet and the outlet of the control device.	(1) Portable CO and O ₂ analyzer.	(a) Using ASTM D6522-00 ¹ (incorporated by reference, see § 63.14). The CO concentration must be at 15 percent O ₂ , dry basis.
2. 4SRB stationary RICE	a. Reduce formaldehyde emissions.	i. Select sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR part 60 appendix A § 63.7(d)(1)(i).	(a) Sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O ₂ at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A.	(a) Measurements to determine O ₂ concentration must be made at the same time as the measurements for formaldehyde concentration.
		iii. Measure moisture content at the inlet and outlet of the control device; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03.	(a) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde concentration.
		iv. Measure formaldehyde at the inlet and the outlet of the control device	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03 ² , provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130.	(a) Formaldehyde concentration must be at 15 percent O ₂ , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
3. Stationary RICE	a. Limit the concentration of formaldehyde in the stationary RICE exhaust.	i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR part 60, appendix A §63.7(d)(1)(i).	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O ₂ concentration of the stationary RICE exhaust at the sampling port location; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A.	(a) Measurements to determine O ₂ concentration must be made at the same time and location as the measurements for formaldehyde concentration.
		iii. Measure moisture content of the stationary RICE exhaust at the sampling port location; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03.	(a) Measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde concentration.
		iv. Measure formaldehyde at the exhaust of the stationary RICE	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03 ² , provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130.	(a) Formaldehyde concentration must be at 15 percent O ₂ , dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

¹ You may also use Methods 3A and 10 as options to ASTM-D6522-00. You may obtain a copy of ASTM-D6522-00 from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

² You may obtain a copy of ASTM-D6348-03 from at least one of the following addresses: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

TABLE 5 TO SUBPART ZZZZ OF PART 63 — INITIAL COMPLIANCE WITH EMISSION LIMITATIONS AND OPERATING LIMITATIONS

As stated in §§63.6625 and 63.6630, you must initially comply with the emission and operating limitations as required by the following:

For each	Complying with the requirement to	You have demonstrated initial compliance if
1. 2SLB and 4SLB stationary RICE and CI stationary RICE.	a. Reduce CO emissions and using oxidation catalyst, and using a CPMS.	<ul style="list-style-type: none"> i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
2. 2SLB and 4SLB stationary RICE and CI stationary RICE.	a. Reduce CO emissions and not using oxidation catalyst.	<ul style="list-style-type: none"> i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in §63.6625(b); and iii. You have recorded the approved operating parameters (if any) during the initial performance test.
3. 2SLB and 4SLB stationary RICE and CI stationary RICE.	a. Reduce CO emissions, and using a CEMS	<ul style="list-style-type: none"> i. You have installed a CEMS to continuously monitor CO and either O₂ or CO₂ at both the inlet and outlet of the oxidation catalyst according to the requirements in §63.6625(a); and ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and iii. The average reduction of CO calculated using §63.6620 equals or exceeds the required percent reduction. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average percent reduction achieved during the 4-hour period.
4. 4SRB stationary RICE	a. Reduce formaldehyde emissions and using NSCR.	<ul style="list-style-type: none"> i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
5. 4SRB stationary RICE	a. Reduce formaldehyde emissions and not using NSCR.	<ul style="list-style-type: none"> i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in §63.6625(b); and iii. You have recorded the approved operating parameters (if any) during the initial performance test.
6. Stationary RICE	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR.	<ul style="list-style-type: none"> i. The average formaldehyde concentration, corrected to 15 percent O₂, dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in §63.6625(b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
7. Stationary RICE	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR.	<ul style="list-style-type: none"> i. The average formaldehyde concentration, corrected to 15 percent O₂, dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in §63.6625(b); and iii. You have recorded the approved operating parameters (if any) during the initial performance test.

TABLE 6 TO SUBPART ZZZZ OF PART 63 — CONTINUOUS COMPLIANCE WITH EMISSION LIMITATIONS AND OPERATING LIMITATIONS

As stated in § 63.6640, you must continuously comply with the emissions and operating limitations as required by the following:

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
1. 2SLB and 4SLB stationary RICE and CI stationary RICE.	a. Reduce CO emissions and using an oxidation catalyst, and using a CPMS.	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved ¹ ; and ii. Collecting the catalyst inlet temperature data according to §63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
1. 2SLB and 4SLB stationary RICE and CI stationary RICE	a. Reduce CO emissions and not using an oxidation catalyst, and using a CPMS.	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved ¹ ; and ii. Collecting the approved operating parameter (if any) data according to §63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
2. 2SLB and 4SLB stationary RICE and CI stationary RICE.	a. Reduce CO emissions and using a CEMS	i. Collecting the monitoring data according to §63.6625(a), reducing the measurements to 1-hour averages, calculating the percent reduction of CO emissions according to §63.6620; and ii. Demonstrating that the catalyst achieves the required percent reduction of CO emissions over the 4-hour averaging period; and iii. Conducting an annual RATA of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B, as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.
4. 4SRB stationary RICE	a. Reduce formaldehyde emissions and using NSCR.	i. Collecting the catalyst inlet temperature data according to § 63.6625(b); and ii. Reducing these data to 4-hour rolling averages; and iii. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and iv. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
5. 4SRB stationary RICE	a. Reduce formaldehyde emissions and not using NSCR.	i. Collecting the approved operating parameter (if any) data according to §63.6625(b); and ii. Reducing these data to 4-hour rolling averages; iii. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
6. 4SRB stationary RICE with a brake horsepower ≥ 5,000.	a. Reduce formaldehyde emissions	Conducting semiannual performance tests for formaldehyde to demonstrate that the required formaldehyde percent reduction is achieved ¹ .
7. Stationary RICE	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR.	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit ¹ ; and ii. Collecting the catalyst inlet temperature data according to §63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
8. Stationary RICE	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR.	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit ¹ ; and ii. Collecting the approved operating parameter (if any) data according to §63.6625(b); and ii. Reducing these data to 4-hour rolling averages; and iii. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.

¹ After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

TABLE 7 TO SUBPART ZZZZ OF PART 63 — REQUIREMENTS FOR REPORTS

As stated in § 63.6650, you must comply with the following requirements for reports:

You must submit a(n)	The report must contain	You must submit the report
1. Compliance report.....	<p>a. If there are no deviations from any emission limitations or operating limitations that apply to you, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period. If there were no periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in §63.8(c)(7), a statement that there were not periods during which the CMS was out-of control during the reporting period; or</p> <p>b. If you had a deviation from any emission limitation or operating limitation during the reporting period, the information in §63.6650(d). If there were periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in §63.8(c)(7), the information in §63.6650(e), or</p> <p>c. If you had a startup, shutdown or malfunction during the reporting period, the information in §63.10(d)(5)(i).</p>	<p>i. Semiannually according to the requirements in §63.6650(b).</p>
2. An immediate startup, shutdown, and malfunction report if actions addressing the startup, shutdown, or malfunction were inconsistent with your startup, shutdown, or malfunction plan during the reporting period.	<p>a. Actions taken for the event; and</p> <p>b. The information in §63.10(d)(5)(ii).</p>	<p>i. Semiannually according to the requirements in §63.6650(b).</p> <p>ii. By fax or telephone within 2 working days after starting actions inconsistent with the plan.</p> <p>iii. By letter within 7 working days after the end of the event unless you have made alternative arrangements with the permitting authorities. (§63.10(d)(5)(ii))</p>
3. Report	<p>a. The fuel flow rate of each fuel and the heating values that were used in your calculations, and you must demonstrate that the percentage of heat input provided by landfill gas or digester gas, is equivalent to 10 percent or more of the gross heat input on an annual basis; and</p> <p>b. The operating limits provided in your federally enforceable permit, and any deviations from these limits; and</p> <p>c. Any problems or errors suspected with the meters.</p>	<p>i. Annually, according to the requirements in §63.6650.</p> <p>ii. See item 3.a.i.</p> <p>iii. See item 3.a.i.</p>

TABLE 8 TO SUBPART ZZZZ OF PART 63 — APPLICABILITY OF GENERAL PROVISIONS TO SUBPART ZZZ

As stated in § 63.6665, you must comply with the following applicable general provisions:

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.1	General applicability of the General Provisions	Yes.	
§ 63.2	Definitions	Yes.	Additional terms defined in §63.6675.
§ 63.3	Units and abbreviations	Yes.	
§ 63.4	Prohibited activities and circumvention	Yes.	
§ 63.5	Construction and reconstruction	Yes.	
§ 63.6(a)	Applicability	Yes.	
§ 63.6(b)(1)–(4)	Compliance dates for new and reconstructed sources	Yes.	
§ 63.6(b)(5)	Notification	Yes.	
§ 63.6(b)(6)	[Reserved].		
§ 63.6(b)(7).....	Compliance dates for new and reconstructed area sources that become major sources	Yes.	
§ 63.6(c)(1)–(2)	Compliance dates for existing sources.....	Yes.	
§ 63.6(c)(3)–(4)	[Reserved].		
§ 63.6(c)(5)	Compliance dates for existing area sources that become major sources.	Yes.	
§ 63.6(d)	[Reserved].		
§ 63.6(e)(1).....	Operation and maintenance	Yes.	
§ 63.6(e)(2)	[Reserved].		
§ 63.6(e)(3)	Startup, shutdown, and malfunction plan	Yes.	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.6(f)(1)	Applicability of standards except during startup shutdown malfunction (SSM).	Yes.	
§ 63.6(f)(2)	Methods for determining compliance	Yes.	
§ 63.6(f)(3)	Finding of compliance	Yes.	
§ 63.6(g)(1)–(3)	Use of alternate standard	Yes.	
§ 63.6(h)	Opacity and visible emission standards	No	Subpart ZZZZ does not contain opacity or visible emission standards.
§ 63.6(i)	Compliance extension procedures and criteria.	Yes.	
§ 63.6(j)	Presidential compliance exemption.....	Yes	
§ 63.7(a)(1)–(2).....	Performance test dates	Yes.....	Subpart ZZZZ contains performance test dates at §63.6610.
§ 63.7(a)(3)	CAA section 114 authority	Yes	
§ 63.7(b)(1)	Notification of performance test	Yes	
§ 63.7(b)(2)	Notification of rescheduling	Yes	
§ 63.7(c)	Quality assurance/test plan	Yes	
§ 63.7(d)	Testing facilities	Yes	
§ 63.7(e)(1)	Conditions for conducting performance tests.	Yes	
§ 63.7(e)(2)	Conduct of performance tests and reduction of data.	Yes	Subpart ZZZZ specifies test methods at §63.6620.
§ 63.7(e)(3)	Test run duration	Yes	
§ 63.7(e)(4)	Administrator may require other testing under section 114 of the CAA.	Yes	
§ 63.7(f)	Alternative test method provisions.....	Yes	
§ 63.7(g)	Performance test data analysis, recordkeeping, and reporting.	Yes	
§ 63.7(h)	Waiver of tests	Yes	
§ 63.8(a)(1)	Applicability of monitoring requirements	Yes	Subpart ZZZZ contains specific requirements for monitoring at §63.6625.
§ 63.8(a)(2)	Performance specifications	Yes	
§ 63.8(a)(3)	[Reserved]	
§ 63.8(a)(4)	Monitoring for control devices	No	
§ 63.8(b)(1)	Monitoring	Yes	
§ 63.8(b)(2)–(3)	Multiple effluents and multiple monitoring systems.	Yes	
§ 63.8(c)(1)	Monitoring system operation and maintenance.	Yes	
§ 63.8(c)(1)(i)	Routine and predictable SSM	Yes	
§ 63.8(c)(1)(ii)	SSM not in Startup Shutdown Malfunction Plan.	Yes	
§ 63.8(c)(1)(iii)	Compliance with operation and maintenance requirements.	Yes	
§ 63.8(c)(2)–(3)	Monitoring system installation	Yes	
§ 63.8(c)(4)	Continuous monitoring system (CMS) requirements.	Yes	Except that subpart ZZZZ does not require Continuous Opacity Monitoring System (COMS).
§ 63.8(c)(5)	COMS minimum procedures	No.....	Subpart ZZZZ does not require COMS.
§ 63.8(c)(6)–(8)	CMS requirements	Yes.....	Except that subpart ZZZZ does not require COMS.
§ 63.8(d)	CMS quality control	Yes	
§ 63.8(e)	CMS performance evaluation	Yes	Except for §63.8(e)(5)(ii), which applies to COMS.
§ 63.8(f)(1)–(5)	Alternative monitoring method	Yes	
§ 63.8(f)(6)	Alternative to relative accuracy test	Yes	
§ 63.8(g)	Data reduction	Yes	Except that provisions for COMS are not applicable. Averaging periods for demonstrating compliance are specified at §§ 63.6635 and 63.6640.
§ 63.9(a)	Applicability and State delegation of notification requirements.	Yes	
§ 63.9(b)(1)–(5)	Initial notifications	Yes	Except that §63.9(b)(3) is reserved.
§ 63.9(c)	Request for compliance extension.....	Yes	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.9(d)	Notification of special compliance requirements for new sources.	Yes	
§ 63.9(e)	Notification of performance test	Yes	
§ 63.9(f)	Notification of visible emission (VE)/opacity test.	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.9(g)(1)	Notification of performance evaluation	Yes	
§ 63.9(g)(2)	Notification of use of COMS data	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.9(g)(3)	Notification that criterion for alternative to RATA is exceeded.	Yes	If alternative is in use.
§ 63.9(h)(1)-(6)	Notification of compliance status	Yes	Except that notifications for sources using a CEMS are due 30 days after completion of performance evaluations. §63.9(h)(4) is reserved.
§ 63.9(i)	Adjustment of submittal deadlines	Yes	
§ 63.9(j)	Change in previous information	Yes	
§ 63.10(a)	Administrative provisions for record keeping/reporting.	Yes.	
§ 63.10(b)(1)	Record retention	Yes.	
§ 63.10(b)(2)(i)-(v)	Records related to SSM	Yes.	
§ 63.10(b)(2)(vi)-(xi)	Records	Yes.	
§ 63.10(b)(2)(xii)	Record when under waiver	Yes	
§ 63.10(b)(2)(xiii)	Records when using alternative to RATA	Yes	For CO standard if using RATA alternative
§ 63.10(b)(2)(xiv)	Records of supporting documentation	Yes.	
§ 63.10(b)(3)	Records of applicability determination	Yes.	
§ 63.10(c)	Additional records for sources using CEMS.	Yes	Except that §63.10(c)(2)-(4) and (9) are reserved.
§ 63.10(d)(1)	General reporting requirements	Yes.	
§ 63.10(d)(2)	Report of performance test results	Yes.	
§ 63.10(d)(3)	Reporting opacity or VE observations	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.10(d)(4)	Progress reports	Yes.	
§ 63.10(d)(5)	Startup, shutdown, and malfunction reports	Yes.	
§ 63.10(e)(1) and (2)(i)	Additional CMS reports	Yes.	
§ 63.10(e)(2)(ii)	COMS-related report	No	Subpart ZZZZ does not require COMS
§ 63.10(e)(3)	Excess emission and parameter exceedances reports.	Yes	Except that §63.10(e)(3)(i)(C) is reserved.
§ 63.10(e)(4)	Reporting COMS data	No	Subpart ZZZZ does not require COMS.
§ 63.10(f)	Waiver for recordkeeping/reporting	Yes.	
§ 63.11	Flares	No.	
§ 63.12	State authority and delegations	Yes.	
§ 63.13	Addresses	Yes.	
§ 63.14	Incorporation by reference	Yes.	
§ 63.15	Availability of information	Yes.	