B6230

DEPARTMENT OF ENVIRONMENTAL QUALITY Manila
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

B623064268

FACILITY: FORD MOTOR CO RESEARCH & DEV CTR		**SRN / ID:** B6230
LOCATION: 1701 Village Road, DEARBORN		**DISTRICT:** Detroit
CITY: DEARBORN		**COUNTY:** WAYNE
CONTACT: Tim Pokoyoway , Environmental Control Engineer		**ACTIVITY DATE:** 08/15/2022
STAFF: Jorge Acevedo	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Ford R&E Center		
RESOLVED COMPLAINTS:		

COMPANY NAME : **Ford R&E Center**

FACILITY ADDRESS : **21500 Oakwood Blvd, Dearborn 48124**

STATE REGISTRAT. NUMBER : **B6230**

NAICS CODE : **541712**

LEVEL OF INSPECTION : **PCE**

DATE OF INSPECTION : **8/15/22**

TIME OF INSPECTION : **09:00**

DATE OF REPORT : **9/30/22**

REASON FOR INSPECTION : **Annual Compliance Inspection**

INSPECTED BY : **Jorge Acevedo**

PERSONNEL PRESENT : **Rob Frew, Tim Pokoyoway**

FACILITY PHONE NUMBER : **(313) 248-1334**

FACILITY FAX NUMBER : **(313) 323-0559**

FACILITY BACKGROUND:

The R&E Center is a 40 building research and development complex engaged in testing various automobile engines and components. Approximately 25000 are employed at the complex including all shift workers and salaried personnel. Wayne County was redesignated to attainment for PM 2.5 on August 29, 2013. Wayne County was designated moderate non-attainment for Ozone on September 15, 2022. Portions of Wayne County are designated as non-attainment for Sulfur Dioxide.

The R & E Center is a major source under the following programs:

Renewable Operating Permit (ROP) program and Prevention of Significant Deterioration program.

INSPECTION NARRATIVE:

On August 15, 2022, I conducted an annual compliance inspection of the Ford Motor – Research and Engineering Center (R&E Center). I met with Tim Pokoyoway and Robert Frew. We started by going through the "E" wing. There are 19 "E" wing cells. There were 17 active and two inactive cells. We then walked out of the building and observed the Gas Turbine Laboratory. There is a liquid hydrogen fueling station and some battery testing that occurs in the building.

We then went into the "D" Wing. Durability testing occurs in this wing. We then went into the "A" Wing. This is the newest wing for the dynamometer laboratory. The rooms in the wing are used to test durability of the engines. It is the engine only that is tested. Emissions from the "A" wing are controlled by a thermal oxidizer. Several rooms in the "D" wing were decommissioned when the "A" wing was constructed. Exhaust from the "A" Wing test cells goes through the basement and a quench tank before sent to the oxidizers. We walked by the "C" Wing which houses several grandfathered test cells.

Next, we walked through the engine prep room. Engines are worked on in preparation for testing in one of the test cells. There are some machining operations which are exempt. I observed a cold cleaner. The cleaner was not in operation and the lid was closed.

We walked through the "F" Wing and "G" Wing. The two wings were built in the early nineties. The wings are used for development of engines and emissions from the engines are evaluated. Tim and Rob indicated that the interlock test was performed in June and July of 2022. The interlock system is designed to cut off use of the dynamometers in the event that the temperatures of the thermal oxidizers fall below the set point.

The next stop was to observe the Oxidizers for both the "A" Wing and "F" and "G" Wing. We first went into the control room to see the temperatures.

All four of the oxidizers for the F and G wing were currently operating above 1400°F. I observed the computer system monitoring the oxidizer operations.

Oxidizer #1 1481 °F

Oxidizer #2 1444 °F

Oxidizer #3 1451 °F

Oxidizer #4 14549 °F

For the "A" Wing Thermal Oxidizers, they were reading:

RTO 1000-1596 °F

RTO 2000-1612 °F

RTO 3000-1635 °F

Prior to the inspection, I was present at the stack test for the F and G Wing Oxidizers. I did not observe any opacity at that time. The oxidizers appeared to be in good working condition. I did not see a lot of rust or leaks.

After the viewing the oxidizers at the Dynamometer Laboratory, we went to the Research Innovation Center(RIC). There are ten cells at the RIC. There is mostly developmental testing that occurs here. The RIC cells are uncontrolled and emissions are minimal. They are tested periodically to ensure that controls are not needed.

Next we went to the Safety Innovation Laboratory. I observed four small boilers. Each had a heat input capacity of 2 mmBTU/hr. The next stop was the driving dynamics laboratory. I observed an emergency generator. The generator(GTE-31001) is natural-gas fired and had an hour cout of 227.3 hours.

Also, I observed a diesel engine fire pump that serve two water tanks of 300000 gallons each. The hour meter on the engine read 119.9.

Finally, we went into the Crash Barrier Building. I observed two cleaver brooks boilers, each with a capacity of 2 mmbtu/hr heat input capacity.

I did not inspect the rotunda center, which has several small boilers and is used for administrative purposes.

I left the facility at Noon. Records were received via email on August 24, 2022.

COMPLAINT/COMPLIANCE HISTORY:

There have not been any citizen complaints registered against Ford.

OUTSTANDING CONSENT ORDERS:

None

OUTSTANDING LOVs

None

OPERATING SCHEDULE/PRODUCTION RATE:

The Dynamometer Building is a 24-hour per day, 7days per week, 8760 hours per year operation. The RIC is an 8-hour per day, 5 days per week, 2080 hours per year operation.

PROCESS DESCRIPTION:

In the Dynamometer Building, Ford has six wings (A, C, D, E, F, G) and tests internal combustion engines in dynamometer cells. The dynamometers are electrical diagnostics devices measuring mechanical performance of the engines. All dynamometers are interfaced with personal computers that continuously monitor engine feedback parameters. Emissions result from the combustion of gasoline by the engines. The typical engine tests are as follows:

- Engine Durability – The durability test evaluates the effect of running the engine under harsh conditions for extended period of time. This is accomplished by operating the engine for extended period while varying engine speeds.
- Engine Performance- The performance test takes the engine to a particular speed, stops the engine for several minutes, takes the engine to the next speed, stops for several minutes, etc;

- Engine Break-in- During the engine break–in test, speed and load points are varied to "break-in" the engine;
- Transient Emissions- The transient emissions test operates the engine for a period, then stops and allows the engine to return to ambient temperature;
- Transient Performance Test- This test takes the engine from zero revolutions per minute (RPM) to maximum horsepower in few seconds. The engine is then stopped and the test is immediately repeated;
- Engine component Testing- Some of the test cells evaluate the performance of specific engine components (oil pump, throttle body, etc.), often times without actually running the engine under its own power and;
- Engine Mapping test- Consists of running engine at various speed, load, spark and fuel set points where data is taken to determine engine performance, fuel economy, exhaust emission, etc. according to engine program

In the RIC, Ford tests internal combustion engines in 10 dynamometer cells. The focus in the SRL is not that much different than in the Dynamometer Building. Rather than focusing on endurance as in the Dynamometer Building, the focus in the SRL is on how the engines and their components react with different fuels. Also, the focus is on projects that are in the development stages and 3-10 years from production.

The Rotunda Center is used for administrative purposes.

EQUIPMENT AND PROCESS CONTROLS

16 test cells are located in the "A Wing". The test cells in the "A Wing" are the newest cell in the dynamometer labororatory. The wing is controlled by three oxidizers.

14 test cells are located in the "C Wing". 7 are currently inactive. The test cells in the "C Wing" are grandfathered. The wing has two stacks and does not have any add on controls.

18 test cells are located in the "D Wing". The test cells in the "D Wing" are grandfathered. The wing has two stacks and does not have any add on controls.

19 test cells are located in the "E Wing". None are currently inactive. The test cells in the "E Wing" were built in 1979 and 1980 and are exempt. The facility was able to use the Rule 285 (g) exemption because rule 278 was not promulgated until 1993. The wing has two stacks and does not have any add on controls.

13 test cells are located in the "F Wing" and 17 are located in the "G Wing." The test cells are controlled by four thermal oxidizers. The exhaust loading supplied by the cells under test automatically activates the oxidizer's variable fan speed. Each oxidizer is equipped with tube heat exchangers for some recuperative potential. Each oxidizer maintains a minimum temperature of 1400° F with a minimum retention time of .5 seconds. The test cells' ability to run is dependent on the temperature. If the oxidizer temperature falls below 1400°, the test cells will not be able to run. Average volumetric air flow rate is 16000 acfm. There are four stacks, one for each oxidizer. Each oxidizer stack is 2.2' internal diameter and 57' high.

10 test cells are located in the RIC and are uncontrolled. The amount of time they are used does not justify the cost for controls.

APPLICABLE RULES/PERMIT CONDITIONS:

ROP MI-ROP-B6230-2022 was finalized on April 28, 2022.

Permit conditions are evaluated in Appendix A. (Appendix A)

The following conditions apply Source-Wide to: FGTHERDYNO-S1

DESCRIPTION

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This flexible group represents the 30 Dynamometer Test Cells located in the Dynamometer Laboratory (F&G Wings). The dynamometers are controlled with four oxidizers.

Emission Units: EUTHERDYNO1-S1 through EUTHERDYNO30-S1

POLLUTION CONTROL EQUIPMENT

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Four Thermal Oxidizers

I. EMISSION LIMIT(S)

Pollutant	Limit	Compliance Status	Comments
1. Carbon Monoxide	1416 pounds/day[2]	Compliance	Records are provided quarterly. The highest emissions of CO did not exceed 1416 pounds.
2. Carbon Monoxide	44.3 Tons/year[2]	Compliance	Records are provided Quarterly. Emissions have been below 44.3 tons per year.
3. Nitrogen Oxides	1200 pounds/day[2]	Compliance	Records are provided quarterly. NOx emissions have been less than 1200 pounds/day.
4. Nitrogen Oxides	37.5 Tons/year[2]	Compliance	Records are provided quarterly. NOx emissions have been less than 37.5 tons per year.
5. 1,3-Butadiene	32.6 Pounds/day[1]	Compliance	Records are provided quarterly. Emissions of 1,3-Butadiene are well below 32.6 pounds per day.

II. MATERIAL LIMIT(S)

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Material	Limit	Compliance Status	Comments
1. Fuel	75,000 MMBTU/year[2]	Compliance	Records are provided quarterly. Fuel is well

Material	Limit	Compliance Status	Comments
			below 75000 MMBTU/year that is consumed.
2. Fuel	1200 MMBTU/day[2]	Compliance	Records are provided quarterly. The amount of fuel consumed has been less than 1200 MMBTU/day
3. Lead	7 kilograms of lead in the engine test cells/week[2]	Compliance	Leaded fuel is no longer used. Records are provided quarterly.

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate FGTHERDYNO unless the group of four (4) thermal oxidizers are installed, maintained and operated in a satisfactory manner. Satisfactory operation of the thermal oxidizer includes maintaining a minimum combustion chamber temperature above the most recent acceptable performance test value less 50 degrees Fahrenheit and a minimum design retention time of 0.5 seconds.[2] (R 336.1205, R 336.1225, R 336.1901, R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d), 40 CFR 64.6(c)(1)(i and ii))

Compliance- Oxidizers appeared to be working correctly. Inspection of the temperature indicated that it was above 1400 degrees.

2. Permittee shall develop a test protocol to ensure that representative uncontrolled and controlled emissions can be determined. This protocol must be submitted to the AQD at least 30 days prior to the proposed test date and approved by AQD. Emissions information gathered testing FGTHERDYNO-S1 can be used to show compliance for FGC10759-S2. (R 336.1201)

Compliance- Test protocol was submitted 30 days prior to testing.

IV. DESIGN/EQUIPMENT PARAMETER(S)

N/A

V. TESTING/SAMPLING

The permittee shall verify the CO and VOC reduction efficiency rates of each thermal oxidizer portion of FGTHERDYNO once every five years from the previous test, by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.[2] (R 336.1205, R 336.1910, R 336.2804, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(d))

COMPLIANCE- Stack testing was conducted in August 2022.

2. The permittee shall verify the NOx and CO emission factors from FGTHERDYNO prior to control by its thermal oxidizer once every five years from the previous test, by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.[2] (R 336.1205, R 336.1225, R 336.1910, R 336.2803, R 336.2804, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))

COMPLIANCE - Stack testing was conducted in August 2022.

3. Upon AQD request, the permittee shall verify the 1,3 Butadiene concentration from FGTHERDYNO, by testing at owner's expense, in accordance with EPA Federal Reference Test Method 18. No less than 30 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.2004(1)(o), R 336.1213(3))**

Compliance- 1,3 Butadiene may be requested to test in the future.

4. Whenever leaded fuel is used, the permittee shall verify the lead usage emission rate from FGTHERDYNO, in accordance with Appendix 7-1.[1] (R 336.1225, R 336.1901)

COMPLIANCE- Records are kept regarding leaded fuel usage. According to facility staff, no leaded fuel is being used.

5. Whenever leaded fuel is used, the permittee shall verify the lead content of the fuel used in FGTHERDYNO, in accordance with Method 2.[2] (R 336.1225, R 336.1901, 40 CFR Part 80, Appendix B)

COMPLIANCE- According to Ford, no leaded fuel is being used. Records are kept regarding leaded fuel usage.

6. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor not less than 7 days of the time and place before performance tests are conducted. **(R 336.1213(3), R 336.2001(4))**

COMPLIANCE- Ford notified AQD more than 7 days prior to testing.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a temperature monitoring device in the combustion chamber of the thermal oxidizers for FGTHERDYNO-S1 to monitor and record the combustion temperature on a continuous basis during operation. Temperature data recording shall consist of measurements made at equally spaced intervals, not to exceed 15 minutes per interval. (R 336.1225, R 336.1901, R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d), 40 CFR 64.6(c)(1)(I and ii))

COMPLIANCE-The temperature of the combustion chamber is monitored continuously.

2. The permittee shall properly maintain the monitoring system including keeping ready access parts for routine repair of the monitoring equipment. (R 336.1225, R 336.1901, R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d), 40 CFR 64.7(b))

COMPLIANCE- Monitoring system appeared to be working correctly. Dynos are interlocked with the thermal oxidizers, therefore, dynos are shut down if temperature goes below 1400.

3. The permittee shall calculate the daily heat input rate in million BTU based upon monthly recordkeeping prorated to a daily rate. Should the prorated daily rate exceed 90 percent of the daily limit, the permittee shall commence daily recordkeeping for a minimum of two months until the daily rate falls below 90 percent of the daily limit. (See Appendix 7-S1) (R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))

Compliance- Records are provided monthly.

4. The permittee shall keep a record of the heat input rate in million BTU per calendar month, and the annual heat input usage rate in million BTU per 12-month rolling time period as determined at the end of each calendar month. **(R 336.2803, R 336.2804, 40 CFR 52.21 (c) & (d))**

COMPLIANCE- Records are provided monthly.

5. The permittee shall keep the following information on a monthly basis for FGTHERDYNO-S1:

a) A record of the days of operation.

b) The amount and type of each fuel used, per calendar day, per month and per 12-month rolling time period.

c) NO_x emission calculations determining the daily emission rate in pounds per calendar day.

d) NO_x emission calculations determining the monthly emission rate in tons per calendar month.

e) NO_x emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

f) CO emission calculations determining the daily emission rate in pounds per calendar day.

g) CO emission calculations determining the monthly emission rate in tons per calendar month.

h) CO emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

i) 1,3-Butadiene emission calculations determining the daily emission rate in pounds per calendar day.

The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file for a period of at least five years and make them available to the Department upon request. (R 336.1205, R336.1225, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))

COMPLIANCE- Records are provided quarterly.

6. The permittee shall calculate and maintain a record of the weekly lead emissions. (R 336.1225, R 336.1901)

COMPLIANCE- Records are provided monthly.

7. The permittee shall continuously monitor and record the combustion chamber temperature as an indicator of proper operation of the thermal oxidizers. The minimum combustion chamber temperature is what is established during the most recent acceptable performance test value, less 50 degrees Fahrenheit, and outlined in the CAM plan. (40 CFR 64.4(c)(1)(i) and (ii))

COMPLIANCE- A preventative maintenance plan and CAM plan is implemented and maintained.

8. An excursion is a departure from the indicator range of established during the most recent acceptable performance test, less 50 degrees Fahrenheit, and is outlined in the CAM plan. (40 CFR 64.6(c)(2))

COMPLIANCE- Monitoring is conducted continuously and temperatures have remained above 1400 degrees F.

9. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). (40 CFR 64.7(d))

COMPLIANCE- Facility has not had any issues with meeting temperature setting. Facility has interlocks that are routinely challenged.

10. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. (40 CFR 64.6(c)(3), 40 CFR 64.7 (c))

COMPLIANCE- Facility conducts continuous monitoring for the temperature of the oxidizers.

11. The permittee shall properly maintain the monitoring system, including keeping necessary parts for routine repair of the monitoring equipment. (40 CFR 64.7(b))

COMPLIANCE- Facility maintains monitoring system and keeps necessary parts onsite.

12. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. (40 CFR 64.9(b)(1))

COMPLIANCE- Facility maintains records and maintenance records.

13. The permittee shall implement a Preventative Maintenance Plan for oxidizer combustion chamber temperature monitoring and recording equipment. (R 336.1910, R 336.1213(3))

COMPLIANCE- Facility maintains Preventive Maintenance Plan and CAM Plan.

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213(3)(c)(ii))

COMPLIANCE- Facility reports deviations in a timely manner.

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))

COMPLIANCE- Facility submits semi-annual ROP Certification in a timely manner.

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

COMPLIANCE- Facility submits Annual Compliance Certification in a timely manner.

4. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.1213(3)(c), R 336.2001(5))**

COMPLIANCE- Facility submits performance test reports in a timely manner.

5. Each semiannual report of monitoring and deviations shall include summary information on the number, duration and cause of excursions and/or exceedances and the corrective actions taken. If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. (40 CFR 64.9(a)(2)(i))

COMPLIANCE- Facility reports appropriate information regarding monitoring and deviations from the CAM plan.

6. Each semiannual report of monitoring and deviations shall include summary information on monitor downtime. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime. (40 CFR 64.9(a)(2)(ii))

COMPLIANCE- Facility includes appropriate information during each semiannual report.

7. The permittee shall submit quarterly reports of the records required by SC VI.5 to the AQD District Supervisor in a format acceptable to the AQD District Supervisor. Reports shall be submitted within 21 days following the end of each calendar quarter, for the previous calendar quarter.[2] **(R 336.1205, R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))**

COMPLIANCE- Facility submits quarterly reports in a timely manner.

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1.SVDYNO-OXIDIZER	34^2	65^2	R 336.1225 R 336.1901 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)
2.SVDYNO-OXIDIZER2	34^2	65^2	R 336.1225 R 336.1901 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)
3.SVDYNO-OXIDIZER3	34^2	65^2	R 336.1225 R 336.1901 R 336.2803 R 336.2804

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
			40 CFR 52.21 (c) & (d)
4.SVDYNO-OXIDIZER4	34^2	65^2	R 336.1225 R 336.1901 R 336.2803 R 336.2804 40 CFR 52.21 (c) & (d)

COMPLIANCE- Stack heights appeared correct. Measurements were not taken.

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable requirements of 40 CFR Part 64. (40 CFR Part 64)

2. If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the AQD and if necessary, submit a proposed modification of the ROP and CAM Plan to address the necessary monitoring changes. Such a modification may include but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. (40 CFR 64.7(e))

COMPLIANCE- Quality assurance is conducted on monitoring equipment. Temperature monitoring is done continuously and appeared to be working correctly and in the right range. The dynos are interlocked and if there is a drop in temperature- the dynos are automatically shut down.

Footnotes:

[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

- FGWINGA

FLEXIBLE GROUP CONDITIONS

DESCRIPTION

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Sixteen (16) Engine Durability Dynamometer Tests Cells located in Wing A. The dynamometers are controlled by three (3) oxidizers.

Emission Units: EU1A, EU2A, EU3A, EU4A, EU5A, EU6A, EU7A, EU8A, EU9A, EU10A, EU11A, EU12A, E13A, EU14A, EU15A, EU16A

POLLUTION CONTROL EQUIPMENT

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Single stack for all test cells equipped with a thermal oxidizer system

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Compliance Determination
1. CO	3.0308 lb/MMBTU[2]	3-hour average	FGWINGA	Compliance- Testing was completed in July 2020. Results were 1.1525 lb/MMBTU
2. VOC		3-hour average	FGWINGA	

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Compliance Determination
	0.0569 lb/MMBTU[2]			Compliance- Testing was completed in July 2020. Results were <0.0501 lb/MMBTU

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate FGWINGA unless a malfunction abatement plan (MAP) as described in Rule 911(2), for the thermal oxidizer system, has been submitted 60 days prior to operation, and is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits.[2] (R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(d))

Compliance- MAP was submitted prior to thermal oxidizer system operating. The plan was submitted in August 2018.

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate FGWINGA unless the thermal oxidizer system is installed, maintained and operated in a satisfactory manner. Satisfactory operation of the thermal oxidizer includes maintaining a minimum combustion zone temperature of 1400° F or the minimum

combustion zone temperature from the most recent acceptable stack test, and a minimum retention time of 0.5 second.[2] (R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), R 336.1910, 40 CFR 52.21(d))

Compliance- Temperatures were around 1600°F during the inspection.

2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a temperature monitoring device in the thermal oxidizer near the combustion chamber outlet to monitor and record the temperature on a continuous basis, during operation of FGWINGA.[2] (R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), R 336.1910, 40 CFR 52.21(d))

Compliance- Facility has monitoring device which continuously measures temperature.

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall verify CO and VOC emission rates from FGWINGA by testing at the owner's expense, in accordance with the Department requirements. Testing shall be performed using an approved USEPA Method listed in 40 CFR Part 60, Appendix A. An alternate method, or a modification to the approved USEPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)**

Compliance- Testing was conducted July 7-9, 2020. Results showed that emissions were below permit limits.

2. The permittee shall verify the CO and VOC emission rates from FGWINGA, at a minimum, every five years from the date of the last test. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)**

Compliance- Testing was conducted July 7-9, 2020. Results showed that emissions were below permit limits.

3. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor not less than 7 days of the time and place before performance tests are conducted. **(R 336.1213(3))**

Compliance- Testing was conducted July 7-9, 2020. Results showed that emissions were below permit limits. Notification was submitted more than 7 days prior to the test.

See Appendix 5-1

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall complete all required records in a format acceptable to the AQD District Supervisor by the 30th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.[2] (R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), 40 CFR 52.21(d))

Compliance- Records were kept and received upon request.

2. The permittee shall monitor and record the temperature in the thermal oxidizer near the combustion chamber outlet, on a continuous basis, during operation of FGWINGA. Temperature data recording shall consist of measurements made at equally spaced intervals, not to exceed 15 minutes per interval. (R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), R 336.1910, 40 CFR 52.21(d)), 40 CFR 64.4(c)(1)(i) and (ii))

Compliance- Monitoring device records and stores temperatures of the oxidizer.

3. The permittee shall keep, in a satisfactory manner, records of the temperature in the thermal oxidizer near the combustion chamber outlet on a continuous basis, as required by SC VI.2.

The permittee shall keep all records on file and make them available to the Department upon request.[2] **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), R 336.1910, 40 CFR 52.21(d))**

Compliance- Monitoring device records and stores temperatures of the oxidizer.

4. An excursion is a departure from the indicator range established during the most recent acceptable performance testing, less 50 degrees Fahrenheit, and is outlined in the CAM plan. **(40 CFR 64.6(c)(2))**

Compliance- Temperature is recorded and monitored on a continuous manner.

5. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). **(40 CFR 64.7(d))**

Compliance- Temperature is recorded and monitored on a continuous manner.

6. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. **(40 CFR 64.6(c)(3), 40 CFR 64.7 (c))**

Compliance- Monitoring is done on a continuous manner.

7. The permittee shall properly maintain the monitoring system, including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 64.7(b))**

Compliance- Facility maintains monitoring system and stores parts necessary to replace key components.

8. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(40 CFR 64.9(b)(1))**

Compliance- Records of monitoring data are kept onsite and available on request.

9. The permittee shall implement a Preventative Maintenance Plan for oxidizer combustion chamber temperature monitoring and recording equipment. **(R 336.1910, R 336.1213(3))**

Compliance- Facility has Preventative Maintenance Plan in place and maintains oxidizer in order to meet emission limits.

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213 (3)(c)(ii))

COMPLIANCE- Facility reports deviations in a timely manner.

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))

COMPLIANCE- Facility submits semi-annual ROP Certification in a timely manner.

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

COMPLIANCE- Facility submits Annual Compliance Certification in a timely manner.

4. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.1213(3)(c), R 336.2001(5))**

COMPLIANCE- Facility submits performance test reports in a timely manner.

5. Each semiannual report of monitoring and deviations shall include summary information on the number, duration and cause of excursions and/or exceedances and the corrective actions taken. If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. **(40 CFR 64.9(a)(2)(i))**

COMPLIANCE- Facility reports appropriate information regarding monitoring and deviations from the CAM plan.

6. Each semiannual report of monitoring and deviations shall include summary information on monitor downtime. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime. **(40 CFR 64.9(a)(2)(ii))**

COMPLIANCE- Facility includes appropriate information during each semiannual report.

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/ Dimensions (inches)	Minimum Height Above Ground (feet)	Compliance Determination
1. SVWINGA	34[2]	85.75[2]	Undetermined but stack appeared to be appropriate height and diameter. There are actually three stacks. This will be discussed with facility so they can revise permit to make correction.

IX. OTHER REQUIREMENTS

NA

Footnotes:

[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGTESTCELLS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

All Engine Dynamometer Test Cells located in Wings A, C, D, E, and three (3) eddy current durability cells in the Dynamometer Building. The eddy current durability cells are EU35D, EU37D, and EU38D.

Emission Units: EU1A, EU2A, EU3A, EU4A, EU5A, EU6A, EU7A, EU8A, EU9A, EU10A, EU11A, EU12A, EU13A, EU14A, EU15A, EU16A, EU1C, EU3C, EU5C, EU6C, EU8C, EU11C, EU16C, EU18C, EU1D, EU2D, EU3D, EU5D, EU6D, EU8D, EU9D, EU10D, EU11D, EU13D, EU14D, EU16D, EU35D, EU37D, EU38D, EU39D, EU41D, EU42D, EU1E, EU2E, EU3E, EU4E, EU5E, EU6E, EU7E, EU8E, EU9E, EU10E, EU11E, EU12E, EU13E, EU14E, EU15E, EU16E, EU17E, EU18E, EU19E

POLLUTION CONTROL EQUIPMENT

-

FGWINGA has a thermal oxidizer system.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Compliance Determination
1. NO_x	101.2 tpy[2]	12-month rolling time period as determined at the end of each calendar month.	FGTESTCELLS	Compliance- Emissions from Aug '21 to July '22 have been less than 50 TPY or roughly half of the permit limit.
2. CO	1,028.7 tpy[2]	12-month rolling time period as determined at the end of each calendar month.	FGTESTCELLS	Compliance- Emissions from Aug '21 to July '22 have been less than 700 TPY.

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Compliance Determination
3. VOC	1,730.4 lbs/day[2]	Daily	FGTESTCELLS	Compliance- Emissions of VOC are around 2.88 Tons per Month at the highest.
4. VOC	35.5 tpy[2]	12-month rolling time period as determined at the end of each calendar month.	FGTESTCELLS	Compliance- VOC emissions from Aug'21 to July '22 have been less than 35.5 tpy. The highest monthly 12 month rolling total was 24.09 TPY.
5. 1,3-Butadiene	22.4 lbs/day[1]	Daily	FGTESTCELLS	Compliance- 1,3 - Butadiene was assumed to be in compliance with the daily limit as the rolling 12 month total was below 0.5 tpy.
6. 1,3-Butadiene	0.5 tpy[1]	12-month rolling time period as determined at the end of each calendar month.	FGTESTCELLS	Compliance- 1,3 - Butadiene emissions have been less than 0.5 TPY on a 12 month rolling average for the time period of Aug '21 to July '22
7. Acetaldehyde	8.3 tpy[1]	12-month rolling time period as determined at the	FGTESTCELLS	Compliance- Acetaldehyde emissions have been less than

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Compliance Determination
		end of each calendar month.		8.3 tpy on a 12 month rolling average for the time period of Aug '21 to July '22.

II. MATERIAL LIMIT(S)

1. The permittee shall only burn unleaded gasoline, methanol/gasoline fuel blends, ethanol/gasoline fuel blends, alcohols, diesel, LPG (or propane), and natural gas in FGTESTCELLS.[2] (R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, R 336.1702, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))

Compliance- Facility is only using compliant fuels.

2. Upon initial operation of the first new test cell in Wing A, the maximum total fuel usage for FGTESTCELLS shall not exceed 31,849 MMBTU per calendar day and the maximum total uncontrolled fuel usage for FGTESTCELLS-S1 shall not exceed 1,451 MMBTU per calendar day. When burning both controlled and uncontrolled in a calendar day, the following equation shall be used to determine maximum allowed total fuel usage:

Total Fuel Usage in MMBTU/day = 31,849 MMBTU/day - 20*U

Where U is the total uncontrolled fuel in MMBTU per calendar day.[2] (R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d))

Compliance- A wing for the period of August '21 through July '22 did not exceed 31,849 MMBTU per calendar day and did not exceed 1,451 MMBTU per calendar day for the uncontrolled period.

3. The total fuel usage for FGTESTCELLS shall not exceed 167,198 MMBTU per 12-month rolling time period as determined at the end of each calendar month.[2] (R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))

a. Of the 167,198 MMBTU, the permittee shall not burn more than 56,847 MMBTU of total uncontrolled fuel per 12-month rolling time period as determined at the end of each calendar month.

b. Of the 167,198 MMBTU, the permittee shall not burn more than 19,435 MMBTU of total diesel fuel per 12-month rolling time period as determined at the end of each calendar month.

c. Of the 167,198 MMBTU, the permittee shall not burn more than 147,000 MMBTU of total alcohol fuel per 12-month rolling time period as determined at the end of each calendar month.

d. Included in the 147,000 MMBTU of total alcohol fuel and the 56,847 MMBTU of total uncontrolled fuel, the permittee shall not burn more than 49,980 MMBTU of total uncontrolled alcohol fuel per 12-month rolling time period as determined at the end of each calendar month.

Compliance-Records were received for the time period August '21 through July '22. Records show that facility did not exceed the 12 month rolling totals specified in the limits 3.a through 3.d.

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Within 90 days after completion of the installation of each new test cell in A wing of FGTESTCELLS, the permittee shall remove a corresponding test cell from the durability section of the Dynamometer Building. Completion of the installation is considered to occur not later than commencement of trial operation of the test cell.[2] (R 336.1201(7)(a))

Compliance- Notice was provided for each new test cell installed in the "A" wing.

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the fuel usage rates for FGTESTCELLS on a continuous basis.[2] (R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1702, R 336.1910, R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))

Compliance-Fuel usage is monitored on a continuous basis.

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall verify NOx emission rates from FGTESTCELLS by testing at the owner's expense, in accordance with the Department requirements. Testing shall be performed using an approved USEPA Method listed in 40 CFR Part 60, Appendix A. An alternate method, or a modification to the approved USEPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)**

Compliance- Testing was conducted on July 7-9, 2020.

2. The permittee shall verify the NOx emission rates from FGTESTCELLS, at a minimum, every five years from the date of the last test. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)**

Compliance- Testing was conducted on July 7-9, 2020.

3. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor not less than 7 days of the time and place before performance tests are conducted. **(R 336.1213(3))**

Compliance- Proper notification was done prior to testing.

See Appendix 5-1

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 30th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.[2] (R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d))

Compliance- Required calculations are kept and were provided upon request.

2. The permittee shall keep the following information on a monthly basis for FGTESTCELLS:

   a. A record of the days of operation.

   b. MMBTU of each fuel, total and uncontrolled, used per month and 12-month rolling time period.

   c. Total and uncontrolled combined fuel use calculations determining the annual usage rate in MMBTU per 12-month rolling time period as determined at the end of each calendar month.

   d. NO_x, CO, VOC, 1,3-butadiene, and acetaldehyde emission calculations determining the monthly emission rate in tons per calendar month.

   e. NO_x, CO, VOC, 1,3-butadiene, and acetaldehyde emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request.[2] (R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d))

Compliance- The aforementioned records are kept on a monthly basis. Records were provided upon request.

3. Upon initial operation of the first new test cell in Wing A, the permittee shall keep the following information on a daily basis for FGTESTCELLS:

   a. Daily total fuel and total uncontrolled fuel use.

   b. VOC and 1,3-butadiene emission calculations determining the daily emission rate in pounds per calendar day.

The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request.[2] (R 336.1205(1)(a) & (3), R 336.1224, R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d))

Compliance-Fuel usage and total uncontrolled fuel use is recorded. VOC and 1,3- butadiene emission calculations are being kept.

4. The permittee shall keep a record of all gasoline deliveries to confirm that no leaded gasoline was used. The permittee shall keep all records on file and make them available to the Department upon request.[2] (R 336.1205(1)(a) & (3), 40 CFR 52.21(d))

Compliance- Records are kept of fuel deliveries. A review of the records indicated that no leaded gasoline was delivered and subsequently used for the time period of August '21 through July '22.

5. The permittee shall keep, in a satisfactory manner, records of the maximum sulfur content in the diesel fuel for each delivery. The permittee shall keep all records on file and make them available to the Department upon request.[2] (R 336.1205(1)(a) & (3), R 336.1402(3) 40 CFR 52.21(c) & (d))

Compliance- Diesel fuel records are being kept and were received upon request.

6. The permittee shall keep, in a satisfactory manner, records of the dates of installation and removal of each test cell as required by SC III.1. The permittee shall keep all records on file and make them available to the Department upon request.[2] (R 336.1201(7)(a), 40 CFR 52.21(c) & (d))

Compliance- Records of installation were kept and submitted in a timely manner.

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213 (3)(c)(ii))

Compliance- Reporting of deviations are promptly reported.

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))

Compliance- Semi-annual reporting was submitted in a timely manner.

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

Compliance- Annual certification was submitted in a timely manner.

4. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.1213(3)(c), R 336.2001(5))**

Compliance- Reports were submitted in a timely manner.

See Appendix 8-1

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SV_WINGA	34^2	85.75^2	R 336.1225, 40 CFR 52.21(c) & (d)
2. SV_WINGC1	20^2	85.75^2	R 336.1225, 40 CFR 52.21(c) & (d)
3. SV_WINGC2	20^2	85.75^2	R 336.1225, 40 CFR 52.21(c) & (d)

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
4. SV_WINGD1	20^2	85.75^2	R 336.1225, 40 CFR 52.21(c) & (d)
5. SV_WINGD2	20^2	85.75^2	R 336.1225, 40 CFR 52.21(c) & (d)
6. SV_WINGE	18^2	85.75^2	R 336.1225, 40 CFR 52.21(c) & (d)

Compliance- Assumed as no measurements were taken but stacks appeared to be correct height and diameter.

IX. <u>OTHER REQUIREMENT(S)</u>

NA

FGCLDCLNRS-1

Compliance- The one cold cleaner in the dynamometer wing was observed and was not operating. The cover was closed. The cold cleaner had instructions posted on it.

FGRULE287

Undetermined- The equipment that is exempt under Rule 287 c was not examined during this inspection. The equipment is reported in MAERS.

FGRULE290

Undetermined- The equipment that is exempt under Rule 290 was not examined during this inspection. The equipment is reported in MAERS.

- FGC10759-S2

FLEXIBLE GROUP CONDITIONS

DESCRIPTION

10 Dynamometer Test Cells located in the Research Innovation Center

EMISSION UNITS: EUC10759D1-S2 THROUGH EUC10759D10-S2

NA

POLLUTION CONTROL EQUIPMENT

I. EMISSION LIMIT(S)

Pollutant	Limit	Compliance Status & Date	Comments
1.Carbon Monoxide*	28.62 lbs/mmBTU	COMPLIANCE	Records provided

Pollutant	Limit	Compliance Status & Date	Comments
	of heat input2.		indicate that emission limit was not exceeded. Stack Testing was conducted in April 2015. Testing was conducted in September 2022. Results have not been submitted.
2. Volatile Organic Compounds (VOC) **	1.69 lbs/mmBTU of heat input2	COMPLIANCE	Records provided indicate that emission limit was not exceeded. Stack Testing was conducted in April 2015. Testing was conducted in September 2022. Results have not been submitted
3. 1,3 butadiene (corrected to 70°F and 29.92 inches Hg)1	11.9 milligrams per cubic meter of exhaust air1	COMPLIANCE-	AQD may request testing

* This is equivalent to a carbon monoxide emission rate of 149 pounds per hour and 63.29 tons per year, based on a maximum gasoline usage of 39 gallons per hour.

** This is equivalent to a VOC emission rate of 10 pounds per hour and 3.76 tons per year, based on a maximum gasoline usage of 39 gallons per hour

II. MATERIAL LIMIT(S)

Material	Limit	Compliance Status & Date	Comments
1. fuel	121.68 million BTUs/day2	COMPLIANCE-	Records provided show that daily fuel usage did not exceed permit limit. Highest usage over past year was 10.11 mmBTU/day.
2. fuel	4.42 billion BTUs/year2	COMPLIANCE-	Records provided show that12 month rolling fuel usage did not exceed permit limit. Highest amount over past year was 2.2 billion BTU/year
3. lead	4.0 kilograms/week2	COMPLIANCE	Records were provided. No unleaded fuel was consumed.

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Permittee shall develop a test protocol to ensure that representative uncontrolled and controlled emissions can be determined. This protocol must be submitted to the AQD at least 60 days prior to the proposed test date and approved by AQD. Emissions information gathered testing FGTHERDYNO-S1 can be used to show compliance for FGC10759-S2
(R336.1201(3))

Compliance- Facility conducted testing on April 2015. Testing was conducted in September 2022.

IV. DESIGN/EQUIPMENT PARAMETER(S)

1.NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. Every five years, the permittee shall verify the Carbon Monoxide emission rates from FGC10759-S2, by testing at owner's expense, in accordance with EPA Federal Reference Test Method 10. No less than 60 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. (R336.2004(1)(m), R336.1213(3))

Compliance- Facility conducted testing on April 2015. Testing was conducted in September 2022.

2. Every five years, the permittee shall verify the Volatile Organic Compound emission rates from FGC10759-S2, by testing at owner's expense, in accordance with EPA Federal Reference Test Method 25A. No less than 60 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. (R336.2004(1)(t), R336.1213(3))

Compliance- Facility conducted testing on April 2015. Testing was conducted in September 2022.

3. Upon MDEQ request, the permittee shall verify the 1,3 Butadiene concentration from FGC10759-S2, by testing at owner's expense, in accordance with EPA Federal Reference Test Method 18. No less than 60 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. (R 336.2004(1)(o), R 336.1213(3)

Compliance- Facility will test if requested by AQD. Testing was conducted in September 2022.

4. Whenever leaded fuel is used, the permittee shall verify the lead usage emission rate from FGC10759-S2, in accordance with Appendix 7-S1. (R336.1213(3))

UNDETERMINED- Leaded fuel does not appear to be used.

5. Whenever leaded fuel is used, the permittee shall verify the lead content of the fuel used in FGC10759-S2, in accordance with Method 2. (40 CFR Part 80, Appendix B, R336.1213(3))

UNDETERMINED- Leaded fuel does not appear to be used.

See Appendix 5-S2

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall calculate the daily heat input rate in million BTU based upon monthly recordkeeping prorated to a daily rate. Should the prorated daily rate exceed 90 percent of the daily limit, the permittee shall commence daily recordkeeping for a minimum of two months until the daily rate falls below 90 percent of the daily limit. (See Appendix 7-S2) (R336.1201(3))

COMPLIANCE- Records are kept.

2. The permittee shall keep a record of the heat input rate in million BTU per calendar month, and the annual heat input usage rate in million BTU per 12-month rolling time period as determined at the end of each calendar month.

COMPLIANCE- Records are kept. (R336.1201(3)

3. Weekly lead usage rates shall be determined from the lead content and the amount of each fuel used in the test cells2. (See Appendix 7-S2) R336.1201(3)

COMPLIANCE- It appears that leaded fuel is not used.

See Appendix 7-S2

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213 (3)(c)(ii))

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be

postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year.

(R 336.1213

(4)(c))

See Appendix 8-S2

Compliance- Semi Annual and Annual Compliance Certifications are submitted.

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
SVDYNO-01	162	592	(R336.1201 (3))
SVDYNO-02	162	592	(R336.1201 (3))

COMPLIANCE- It appears that stack heights are correct. Measurements were not taken.

IX. OTHER REQUIREMENT(S)

1.NA

Footnotes:

1This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

2This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGEMERGRICE-S3

FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Existing CI and SI engines at a major source, Emergency

Compliance date – May 3, 2013 for CI Engines

Compliance date – October 19, 2013 for SI Engines

Emission Units: EUEMERGRICECECGEN-S3, EUEMERGRICEDYNOGEN-S3, EUEMERGRICEEVBGEN-S3, EUEMERGRICEGTL1GEN-S3, EUEMERGRICEGTL2GEN-S3, EUEMERGRICERIC1GEN-S3, EUEMERGRICERIC2GEN-S3, EUEMERGRICERIC4GEN-S3, EUEMERGRICERIC5GEN-S3, EUEMERGRICEPFSL1GEN-S3, EUEMERGRICEPFSL2GEN-S3, EUEMERGRICEBLG6GEN-S3, EUEMERGRICEAECGEN-S3, EUEMERGRICECFDSGEN-S3, EUEMERGRICERCGEN-S3, EUEMERGRICEWT2FP-S3, EUEMERGRICERICFP-S3, EUEMERGRICEOAKFP-S3, EUEMERGRICEPDCFP-S3, EUEMERGRICEBLG3FP-S3, EUEMERGRICEAECFP-S3, EUEMERGRICEPOEEFP-S3, EUEMERGRICERC1FP-S3, EUEMERGRICERC2FP-S3

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

1. The permittee shall burn only diesel fuel in each CI engine with a maximum sulfur content of 15 ppm (0.0015 percent) by weight and a minimum Cetane index of 40 or a maximum aromatic content of 35 volume percent. **(40 CFR 63.6604(b), 40 CFR 1090.305)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall operate and maintain any affected RICE, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. (40 CFR 63.6605 (b) R 336.1910)

Compliance assumed- The engines are run infrequently. Records regarding hour logs were provided along with maintenance records.

2. The permittee shall comply with the following requirements, except during periods of startup: (40 CFR 63.6602, 40 CFR 63.6640(a))

For CI Engines: (40 CFR 63.6602, Table 2c item 1)

a) Change oil and filter every 500 hours of operation or annually, whichever comes first, except as allowed in SC III.5.

b) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.

c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

Compliance- All engines are used approximately several hours per year and are not used frequently.

3. The permittee shall comply with the following requirements, except during periods of startup: (40 CFR 63.6602, 40 CFR 63.6640(a))

For SI Engines: (40 CFR 63.6602, Table 2c item 6)

a) Change oil and filter every 500 hours of operation or annually, whichever comes first, except as allowed in SC III.5.

b) Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.

c) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

Compliance- All engines are used approximately several hours per year and are not used frequently.

4. The permittee shall operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop you own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air-pollution control practice for minimizing emissions.

(40 CFR 63.6625(e)(2), R336.910)

Compliance- No after treatment control device is used.

5. The permittee may utilize an oil analysis program in order to extend the specified oil change requirement in 40 CFR 63.6602 and as listed in SC III.2. The oil analysis program must be performed at the same frequency as oil changes are required. The analysis program must analyze the parameters and keep records as required in 63.6625(i).

(40 CFR 63.6625 (i))

Compliance- The facility may use this but based on usage, the facility will rarely meet the 500 hours.

6. The permittee may utilize an oil analysis program in order to extend the specified oil change requirement in 40 CFR 63.6602 and as listed in SC III.3. The oil analysis program must be performed at the same frequency as oil changes are required. The analysis program must analyze the parameters and keep records as required in 63.6625(j). (40 CFR 63.6625(j))

Compliance- The facility may use this but based on usage, the facility will rarely meet the 500 hours.

7. The permittee shall operate FGEMERGRICE according to the requirements specified in 40 CFR 63.6640(f)(1) through 63.6640(f)(4). In order for the engine to be considered an emergency stationary RICE under 40 CFR 63, Subpart ZZZZ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs 40 CFR 63.6640(f)(1) through 63.6640 (f)(4), is prohibited. If the permittee does not operate FGEMERGRICE according to the requirements in paragraphs 40 CFR 63.6640(f)(1) through 63.6640(f)(4), the engine will not be considered an emergency engine under 40 CFR 63, Subpart ZZZZ and must meet all requirements for non-emergency engines.

Compliance- Facility uses engines solely for emergency purposes.

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain FGEMERGRICE with a non-resettable hour meter. (40 CFR 63.6625(f))

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. If using the oil analysis program for CI Engine(s), the permittee shall test for Total Base Number, viscosity and percent water content. (40 CFR 63.6625(i))

Not applicable because oil analysis is not used.

2. If using oil analysis program for SI Engines, the permittee shall test for Total Acid, viscosity, and percent water content. (40 CFR 63.6625 (j))

Not applicable because oil analysis is not used.

See Appendix 5-3

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. For each RICE engine, the permittee shall keep records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment.

(40 CFR 63.6655(a)(2), 63.6660)

Compliance- Facility keeps maintenance records for engines and copies were received.

2. The permittee shall keep records of all required maintenance performed on the air pollution control and monitoring equipment.
(40 CFR 63.6655(a)(4), 63.6660)

Compliance- Facility keeps maintenance records for engines and copies were received.

3. The permittee shall keep records of actions taken during periods of malfunction to minimize emissions in accordance with 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(40 CFR 63.6655(a)(5), 63.6660)

Compliance- Facility keeps maintenance records for engines and copies were received.

4. The permittee shall keep records as required in SC III.3 and SC III.4 to show continuous compliance with each emission or operating limit that applies.
(40 CFR 63.6655(d), 63.6660)

Compliance- Facility keeps maintenance records for engines and copies were received.

5. The permittee shall keep records of the maintenance conducted on the stationary RICE in order to demonstrate that permittee operated and maintained the stationary RICE and after-treatment control device (if any) according to permittee's maintenance plan.

(40 CFR 63.6655(d), 63.6660)

Compliance- Facility keeps maintenance records for engines and copies were received.

6. The permittee shall keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engines are used for demand response operation, the owner or operator must keep records of the notification of the emergency situation, and the time the engine was operated as part of demand response. (40 CFR 63.6655(f), 63.6660)

Compliance- Facility keeps hour log records for engines and copies were received.

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213 (3)(c)(ii))

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

Compliance- Facility submits semi-annual and annual compliance certifications.

See Appendix 8-3

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subparts A and Subpart ZZZZ, as they apply to FG-EMERGENCYRICE.
(40 CFR 63 Subparts A and ZZZZ)

Compliance- Based on a review of hour logs and maintenance records, it appears that facility is complying with applicable subpart.

Footnotes:

1 This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

2 This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGEMERG-IIII
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

FGEMERG-IIII consists of emergency, stationary, compression ignition (CI) internal combustion engines (ICE), which commenced construction after July 11, 2005, where the stationary, CI ICE are manufactured after April 1, 2006, and are not fire pump engines or manufactured as a certified NEPA fire pump engine after July 1, 2006, which are subject to 40 CFR Part 60, Subpart IIII-The Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. For the purpose of Subpart IIII, the date that construction commences is the date the engine is ordered by the owner or operator.

Emission Units: EUEMERGRICEDDCFP, EUEMERGRICECFPH1FP, EUEMERGRICECFPH2FP, and EUEMERGRICECFPH3FP

POLLUTION CONTROL EQUIPMENT

-

NA

I. EMISSION LIMIT(S)

-

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Compliance Determination
1. NOx	9.2 g/kW-hr 6.9 g/hp-hr	Hourly	EUEMERGRICEDDCFP	Undetermined- Facility operates a handful of engines but they don't operate frequently. Inspection of the certification status will occur during the next inspection cycle.
2. HC	1.3 g/kW-hr 1.0 g/hp-hr	Hourly	EUEMERGRICEDDCFP	Undetermined- Facility operates a handful of engines but they don't operate frequently. Inspection of the certification status will occur during the next inspection cycle.
3. CO	11.4 g/kW-hr 8.5 g/hp-hr	Hourly	EUEMERGRICEDDCFP	Undetermined- Facility operates a handful of engines but they don't operate frequently. Inspection of the certification status will

				occur during the next inspection cycle.
4. PM	**0.54 g/kW-hr** **0.40 g/hp -hr**	**Hourly**	**EUEMERGRICEDDCFP**	**Undetermined- Facility operates a handful of engines but they don't operate frequently. Inspection of the certification status will occur during the next inspection cycle.**

II. MATERIAL LIMIT(S)

1. The permittee shall burn only diesel fuel, in FGEMERG-IIII with the maximum sulfur content of 15 ppm (0.0015 percent) by weight and a minimum Cetane index of 40 or a maximum aromatic content of 35 volume percent. **(40 CFR 60.4207, 40 CFR 1090.305))**

Compliance- Diesel analysis shows that the sulfur content is less than 15 ppm.

III. PROCESS/OPERATIONAL RESTRICTION(S)

-

1. The permittee may operate each engine in FGEMERG-IIII for no more than 100 hours per calendar year for the purpose of necessary maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing. A petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency internal combustion engines beyond 100 hours per calendar year. **(40 CFR 60.4211(f)(2))**

Compliance- Engines are run infrequently. Records regarding hour logs were provided along with maintenance records.

2. Each engine in FGEMERG-IIII may operate up to 50 hours per calendar year in non-emergency situations, but those 50 hours are counted towards the 100 hours per calendar year provided for maintenance and testing as provided in 40 CFR 60.4211(f)(2). Except as provided in 40 CFR 60.4211(f)(3)(i), the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for the permittee to supply non-emergency power as part of a financial arrangement with another entity. **(40 CFR 60.4211(f)(3))**

Compliance- Engines are run infrequently. Records regarding hour logs were provided along with maintenance records.

3. If the permittee purchased a certified engine, according to procedures specified in 40 CFR Part 60, Subpart IIII, for the same model year, the permittee shall meet the following requirements for each engine of FGEMERG-IIII:

a. Operate and maintain the certified engine and control device according to the manufacturer's emission-related written instructions,
b. Change only those emission related settings that are permitted by the manufacturer, and
c. Meet the requirements as specified in 40 CFR 89, 94, and/or 1068, as it applies to you.

If you do not operate and maintain the certified engine and control device according to the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine. (40 CFR 60.4211(a))

Compliance- Maintenance is performed on engines on a periodic frequency. Maintenance Records were provided along with hour logs.

4. If the permittee purchased a non-certified engine or a certified engine operating in a non-certified manner, the permittee shall keep a maintenance plan for each engine of FGEMERG-IIII and shall, to the extent practicable, maintain and operate each engine in a manner consistent with good air pollution control practice for minimizing emissions. **(40 CFR 60.4211(g)(3))**

Compliance- Maintenance records were provided.

5. Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local governments, manufacturer, the vender, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. Emergency stationary ICE may operate up to 50 hours per year in non-emergency

situations, those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. For owners and operators of emergency engines, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year as permitted in this section, is prohibited. **(40 CFR 60.4211(f)**

Compliance- Engines are used infrequently. Records regarding hour logs were provided along with maintenance records.

6. The owner or operator must purchase an engine certified to the emission standards in 40 CFR 60.4204 (b) or 40 CFR 60.4205(b) or (c) as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications. **(40 CFR 60.4211(c)**

Undetermined- Facility operates a handful of engines but they don't operate frequently. Inspection of the certification status will occur during the next inspection cycle.

7. The owner or operator must operate and maintain the stationary CI ICE and control device according to the manufacturer's emission-related written instructions; change only those emission-related settings that are permitted by the manufacturer; and meet the requirements of 40 CFR Parts 89, 94 and/or 1068, as they apply to you. **(40 CFR 60.4211(a)(1), (2), and (3))**

Compliance- Maintenance is done and records were provided.

8. Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in 40 CFR 60.4204 and 40 CFR 60.4205 over the entire life of the engine. **(40 CFR 60.4206)**

Compliance- Engines are maintained on a periodic basis. Records of maintenance were provided.

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The owner or operator shall equip and maintain each engine in FGEMERG-IIII with non-resettable hour meters to track the operating hours. **(40 CFR 60.4209(a))**

Compliance- Non-resettable hour meters were observed during the inspection. Records of hours of operation were kept and provided.

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall conduct an initial performance test for EUENGINE1 within one year after startup of the engine to demonstrate compliance with the emission limits in 40 CFR 60.4205 unless the engines have been certified by the manufacturer and the permittee maintains the engine as required by 40 CFR Part 60, Subpart IIII. If a performance test is required, the performance tests shall be conducted according to 40 CFR 60.4212. No less than 30 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. Subsequent performance testing shall be conducted every 8,760 hours of engine operation or 3 years, whichever comes first. **(40 CFR 60.4211, 40 CFR 60.4212, 40 CFR Part 60, Subpart IIII)**

Undetermined- Certification for the engines were not requested. Will request at the next inspection. The minimal use of engines was observed and records were provided.

2. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor not less than 30 days of the time and place before performance tests are conducted. **(R 336.1213(3))**

Undetermined- Certification for the engines were not requested. Will request at the next inspection. The minimal use of engines was observed and records were provided.

See Appendix 5-3

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall keep, in a satisfactory manner, a record of testing required in SC V.1 or manufacturer certification documentation indicating that each engine in FGEMERG-IIII meets the applicable emission limitations contained in the federal Standards of Performance for New Stationary Sources 40 CFR Part 60, Subpart IIII. The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.4211)**

Certification for the engines were not requested. Will request at the next inspection. The minimal use of engines was observed and records were provided.

2. The permittee shall monitor and record the total hours of operation and the hours of operation during non-emergencies for each engine in FGEMERG-IIII, on a monthly and 12-month rolling time period basis, in a manner acceptable to the AQD District Supervisor. The permittee shall document how many hours are spent for emergency operation of each engine in FGEMERG-IIII, including what classified the operation as emergency and how many hours are spent for maintenance or readiness testing and non-emergency operation. **(40 CFR 60.4211(f), 40 CFR 60.4214(b))**

Compliance- Hours of operation are monitored and recorded. Records of hours of operation were provided.

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213 (3)(c)(ii))

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

Compliance- Semi-Annual and ROP certifications have been submitted in a timely matter.

See Appendix 8-3

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all provisions of 40 CFR Part 60, Subparts A and IIII, as they apply to FGEMERG-IIII. **(40 CFR Part 60, Subparts A and IIII)**

Compliance - It appears that the facility is in compliance with the applicable Subparts A and IIII.

2. The permittee shall comply with all provisions of 40 CFR Part 63, Subparts A and ZZZZ as they apply to FGEMERG-IIII. **(40 CFR Part 63, Subparts A and ZZZZ)**

Compliance- It appears that the facility is in compliance with the applicable Subparts A and ZZZZ.

Footnotes:

[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGEMERG-JJJJ **FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

FGEMERG-JJJJ consists of emergency, stationary, spark ignition (SI) internal combustion engines (ICE) with a maximum engine power greater than 19 KW (25 HP) that commence construction on and after January 1, 2009, which are subject to 40 CFR Part 60, Subpart JJJJ-The Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. For the purposes of this Subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

Emission Units: EUEMERGRICEMOB, EUEMERGRICEPD300, EUEMERGRICEPD400, EUEMERGRICEDDLE, EUEMERGRICECECGEN, EUEMERGRICECCPGEN, EUEMERGRICERCGEN, and EUEMERGRICERIC2GEN

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Compliance Determination
1. NOx	2.0 g/hp-hr 160 ppmvd at 15% O2	Hourly	Each Engine in FGEMERG-JJJJ	Undetermined- Facility operates a handful of engines but they don't operate frequently. Inspection of the certification status will occur during the next inspection cycle.
2. CO	4.0 g/hp-hr 540 ppmvd at 15% O2	Hourly	Each Engine in FGEMERG-JJJJ	Undetermined- Facility operates a handful of engines but they don't operate frequently. Inspection of the certification status will occur during the next inspection cycle.
3. VOC	1.0 g/hp-hr	Hourly	Each Engine in FGEMERG-JJJJ	Undetermined- Facility operates a handful of engines but they don't

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Compliance Determination
	86 ppmvd at 15% O2			**operate frequently. Inspection of the certification status will occur during the next inspection cycle.**

II. MATERIAL LIMIT(S)

1. The permittee shall only burn pipeline quality natural gas in each engine in FGEMERG-JJJJ. **40 CFR 60.4230)**

Undetermined- Engines are not used that frequently. Local utility provides gas so pipeline quality natural gas usage is assumed.

III. PROCESS/OPERATIONAL RESTRICTION(S)

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1. There is no time limit on the use of emergency stationary RICE in emergency situations. **(40 CFR 60.4243(d)(1))**

2. The permittee may operate each engine in FGEMERG-JJJJ for no more than 100 hours per calendar year for the purpose of necessary maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing. A petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency internal combustion engines beyond 100 hours per calendar year. **(40 CFR 60.4243(d)(2))**

Compliance- Engines are used sparingly. Records of hours of operation are kept and maintained.

3. Each engine in FGEMERG-JJJJ may operate up to 50 hours per calendar year in non-emergency situations, but those 50 hours are counted towards the 100 hours per calendar year provided for maintenance and testing as provided in SC III.4. Except as provided in 40 CFR 60.4243(d)(3)(i), the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or demand response, or to generate income for the permittee to supply non-emergency power as part of a financial arrangement with another entity. (40 CFR 60.4243(d)(3)

Compliance- Engines are used sparingly. Records of hours of operation are kept and maintained.

4. The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: **(40 CFR 60.4243(d)(3)(i))**

a. The engine is dispatched by the local balancing authority or local transmission and distribution system operator.
b. The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
c. The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
d. The power is provided only to the facility itself or to support the local transmission and distribution system.
e. The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching.

Compliance- Engines are used sparingly. Records of hours of operation are kept and maintained.

5. The permittee shall operate and maintain each engine included for each engine in FGEMERG-JJJJ such that it meets the emission limits in SC I.1, I.2, and I.3 over the entire life of the engine. (40 CFR 60.4234, 40 CFR 60.4243(b))

Compliance- Facility maintains engines according to manufacturer's recommendation.

6. If the permittee purchased a certified engine, according to procedures specified in 40 CFR Part 60, Subpart JJJJ, for the same model year, the permittee shall meet the following requirements for each engine in FGEMERG-JJJJ:

a. Operate and maintain the certified engine and control device according to the manufacturer's emission-related written instructions,
b. May only adjust engine settings according to and consistent with the manufacturer's emission-related written instructions,
c. Meet the requirements as specified in 40 CFR 1068 Subparts A through D.

If the permittee does not operate and maintain the certified engine and control device according to the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine and be subject to SC III.5. (40 CFR 60.4243(b)(1))

Undetermined-Did not request certification information but engines are used sparingly. Will follow up with regards to the certification during the next inspection.

7. If the permittee purchased a non-certified engine or a certified engine operating in a non-certified manner, the permittee shall keep a maintenance plan for FGEMERG-JJJJ and shall, to the extent practicable, maintain and operate each engine in a manner consistent with good air pollution control practice for minimizing emissions. **(40 CFR 60.4243(b)(2))**

Compliance- Facility maintains engines that are onsite. Engines are used sparingly. Records regarding hours of the operation are kept.

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. Each engine in FGEMERG-JJJJ shall be certified to meet the applicable emission standard of 40 CFR 60.4233. The permittee shall install and configure each engine according to the manufacturer's specifications. **(40 CFR 60.4243)**

Undetermined-Did not request certification information but engines are used sparingly. Will follow up with regards to the certification during the next inspection.

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall conduct an initial performance test for engine in FGEMERG-JJJJ within one year after startup of the engine to demonstrate compliance with the emission limits in 40 CFR 60.4231 unless the engine has been certified by the manufacturer and the permittee maintains the engine as required by 40 CFR Part 60, Subpart JJJJ. If a performance test is required, the performance test shall be conducted at the owner's expense, in accordance with Department requirements and according to 40 CFR 60.4244. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(40 CFR 60.4244)**

Undetermined-Did not request certification information but engines are used sparingly. Will follow up with regards to the certification during the next inspection.

2. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor not less than 7 days of the time and place before performance tests are conducted. **(R 336.1213(3))**

See Appendix 5-3

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee shall keep in a satisfactory manner, records of all maintenance conducted on each engine in FGEMERG-JJJJ. The permittee shall keep all records on file and make them available to the department upon request. **(40 CFR 60.4245(a)(2))**

Compliance- Maintenance is performed as necessary and according to manufacturer's recommendation.

2. The permittee shall keep, in a satisfactory manner, a record of testing required in SC V.1 or manufacturer certification documentation indicating that each engine in FGEMERG-JJJJ meets the applicable emission limitations contained in the federal Standards of Performance for New Stationary

Sources 40 CFR Part 60, Subpart JJJJ. The permittee shall keep all records on file and make them available to the Department upon request. (40 CFR 60.4245)

Undetermined-Did not request certification information but engines are used sparingly. Will follow up with regards to the certification during the next inspection.

3. The permittee shall monitor and record the hours of operation of each engine in FGEMERG-JJJJ during emergencies and non-emergencies, on a calendar year basis, in a manner acceptable to the AQD District Supervisor. The permittee shall record the time of operation of each engine in FGEMERG-JJJJ and the reason it was in operation during that time. **(40 CFR 60.4243)**

Compliance- Records for hours of operation are kept and were provided upon request.

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213 (3)(c)(ii))

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

Compliance- Semi-Annual and Annual ROP certifications were submitted timely.

See Appendix 8-3

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of 40 CFR Part 60, Subparts A and JJJJ as they apply to FGEMERG-JJJJ. **(40 CFR Part 60, Subpart JJJJ)**

2. The permittee shall comply with all applicable provisions of 40 CFR Part 63, Subparts A and ZZZZ as they apply to FGEMERG-JJJJ. **(40 CFR Part 63, Subpart ZZZZ)**

Footnotes:

[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGBOILERS

FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Requirements for existing boilers and process heater(s) with a heat input capacity of <10 MMBTU/hr for major sources of HAP emissions per 40 CFR Part 63, Subpart DDDDD (Boiler MACT). These boilers or process heaters are designed to burn solid, liquid, or gaseous fuels.

Emission Units:

Equal to or less than 5 MMBTU/hr and only burns gaseous or light liquid fuels	**EUBOIL116207, EUBOIL116208, EUBOIL116323, EUBOIL116324, EUBOIL116325, EUBOIL116326, EUBOIL610003, and EUBOIL610004**

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee must, for boilers or process heaters installed after June 4, 2010 with a heat input capacity of less than or equal to 5 MMBTU/hr complete an initial tune-up as specified in SC III.3 by no later 61 months after installation. **(40 CFR 63.7510(g))**

Compliance- Boilers were subject to initial tune-up. Records were provided showing dates of tune ups.

2. The permittee must, for boilers or process heaters with a heat input capacity of less than or equal to 5 MMBTU/hr, conduct a 5-year tune-up according to 40 CFR 63.7540(a)(12). Each 5-year tune-up must be conducted no more than 61 months after the previous tune-up. The

burner inspection may be delayed until the next scheduled or unscheduled unit shutdown, but each burner must be inspected at least once every 72 months. **(40 CFR 63.7500(d) or (e), 40 CFR 63.7515(d), 40 CFR 63.7540(a)(12), 40 CFR Part 63, Subpart DDDDD, Table 3.1)**

Compliance- Boilers were subject to initial tune-up. Records were provided showing dates of tune ups.

3. The permittee must conduct a tune-up of each boiler or process heater as specified in the following: **(40 CFR 63.7540(a)(11) or (12))**

a. As applicable, inspect the burner and clean or replace any components of the burner as necessary. The permittee may perform the burner inspection any time prior to the tune-up or may delay the burner inspection until the next scheduled unit shutdown. At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment. **(40 CFR 63.7540(a)(10)(i))**
b. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available. **(40 CFR 63.7540(a)(10)(ii))**
c. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly. The permittee may delay the inspection until the next scheduled unit shutdown. **(40 CFR 63.7540(a)(10)(iii))**
d. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_X requirement to which the unit is subject. **(40 CFR 63.7540(a)(10)(iv))**
e. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. **(40 CFR 63.7540(a)(10)(v))**

Compliance- Boilers were subject to initial tune-up. Records were provided showing dates of tune ups.

4. If the unit is not operated on the required date for the tune-up, the tune-up must be conducted within 30 calendar days of startup. **(40 CFR 63.7540(a)(13))**

5. At all times, the permittee must operate and maintain each existing small boiler or process heater, including associated air pollution control equipment and monitoring equipment, in a manner

consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. **(40 CFR 63.7500(a)(3))**

Compliance- Boilers observed during the inspection appeared to be operating properly. Most if not all had boiler inspection by the State Licensing and Regulatory Affairs.

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. The permittee must keep a copy of each notification and report submitted to comply with 40 CFR Part 63, Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or 2 or 5 year compliance report or one-time energy assessment, as applicable, that the permittee submitted. **(40 CFR 63.7555(a)(1))**

Compliance- Periodic Reports are submitted regarding tune-ups.

2. The permittee must keep the records in a form suitable and readily available for expeditious review. **(40 CFR 63.7560(a))**

Compliance- Records are kept.

3. The permittee must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. **(40 CFR 63.7560(b))**

Compliance- Records are kept.

4. The permittee must keep each record on site, or they must be accessible from on-site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record. The permittee can keep the records off site for the remaining 3 years. **(40 CFR 63.7560(c))**

Compliance- Records are kept.

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. (R 336.1213 (3)(c)(ii))

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. (R 336.1213(3)(c)(i))

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. (R 336.1213(4)(c))

4. The permittee must submit boiler or process heater tune-up compliance reports to the appropriate AQD District Office and must be postmarked or submitted by March 15 of the year following the applicable 2 or 5-year period starting from January 1 of the year following the previous tune-up to December 31 (of the latest tune-up year). Compliance reports must also be submitted to EPA using the Compliance and Emissions Data Reporting Interface (CEDRI) which is accessed through the EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). If the reporting form is not available in CEDRI at the time the compliance report is due, a hardcopy of the compliance report shall be submitted to EPA Region 5. **(40 CFR 63.7550(b), 40 CFR 63.7550(h)(3))**

5. The permittee must include the following information in the compliance report. **(40 CFR 63.7550(c)(1))**

a. Company and Facility name and address. **(40 CFR 63.7550(c)(5)(i))**
b. Process unit information, emissions limitations, and operating parameter limitations. **(40 CFR 63.7550 (c)(5)(ii))**
c. Date of report and beginning and ending dates of the reporting period. **(40 CFR 63.7550(c)(5)(iii))**
d. Include the date of the most recent tune-up for each unit. Include the date of the most recent burner inspection if it was not done biennially or on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown. **(40 CFR 63.7550(c)(5)(xiv))**
e. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report. **(40 CFR 63.7550(c)(5)(xvii))**

Compliance- Semi-Annual and Annual ROP Certifications are submitted timely. Facility has submitted reports regarding tune-ups on a periodic basis.

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable requirements of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subparts A and DDDDD for Industrial, Commercial, and Institutional Boilers and Process Heaters. **(40 CFR Part 63, Subparts A and DDDDD)**

Compliance- Facility appears to be in compliance with Subparts A and DDDDD.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:

N/A

MAERS REPORT REVIEW

(These figures include grandfathered test cells.)

Pollutant	2021 Emissions (TPY)
CO	563.56
NOx	59.2
PM	4
Sox	3.59
VOC	25.84

FINAL COMPLIANCE DETERMINATION:

It appears that the Ford R&E Center is operating in compliance with MI-ROP-B6230-2022.

NAME _____ DATE 9-30-22 SUPERVISOR April L. Wendling 10-10-22