DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

K127122859

FACILITY: HENRY FORD HOSPITAL		**SRN / ID:** K1271
LOCATION: 2799 W GRAND BLVD, DETROIT		**DISTRICT:** Detroit
CITY: DETROIT		**COUNTY:** WAYNE
CONTACT: Dan Murakami , Director, Plant Operations		**ACTIVITY DATE:** 08/20/2013
STAFF: Terseer Hemben	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Scheduled Level 2 Compliance Inspection: ETOs, Boilers and Generators		
RESOLVED COMPLAINTS:		

INSPECTED BY : Terseer Hemben, MDEQ
PERSONNEL PRESENT : Daniel Murakumi, Ford Hospital
Catherine Semer, HFH
Charles Barker, LH Associates
FACILITY PHONE NUMBER : (313)-916-2204
FACILITY FAX : (313) -916-4319
DATES OF INSPECTION : 8/20/2013

FACILITY BACKGROUND:

Henry Ford Hospital is a full service/teaching hospital. The Henry Ford Hospital (HFH) utilizes a sterilizing system to reduce levels of medical wastes, especially contaminated fabrics, paper and cleaning materials. The purpose for waste sterilization is to reduce the level of illness and disease transmission within the hospital traffic. The system requires adequate power supply to sustain the waste reduction processes. Boiler systems serving the HFH systems have the combined capacity to deliver 1500 pounds of steam per hour. The hospital waste processor at Henry Ford Hospital Campus, in Detroit, Michigan, was designed to operate a continuous Emissions Monitoring System (CEMS) for monitoring the NOX emissions. Literature providing details of the CEMS applications are on file.

Henry Ford Hospital upgraded the boilers to 3 Nebraska types and removed the generators from systems site. The boilers are rated at 86.4 MMBtu/hr. each, and operable using natural gas or No. 2 fuel oil. Logistically, only two boilers are permitted to operate simultaneously, and each is limited to 1000 hours per year or fuel oil gallon equivalent, or 1,234,000 gallons per year for the whole boiler group. The HFH operates three supplementary engines (generators) rated 750 kW, 1500 kW, 1600 kW, respectively, and three others at 2000 kW each. The engines are used only for emergency electrical purposes and standard operating tests. HFH environmental team informed some of the engines will be replaced, and details of modifications will be furnished soon.

Calculations of NOx and CO emissions for the facility boilers were based on vendor guarantees on equipment's efficiency. The remaining criteria emissions were based on AP 42 factors from Chapter 1.3, with the SO2 emission factor incorporating the sulfur content of 0.03%. Calculations of emissions for the emergency generators were based on tier 1 and 2 stationary diesel engine standard promulgated by USEP, with the exception of lead and SO2, which are both based on the fuel analysis. All diesel used on site were permitted to have a sulfur content of no greater than 0.03%.

The system uses one common stack for the three boilers and each generator has its own stack. The applicable rules for the equipment are Rule 201, 301, and 901. Additionally, NSPS subpart Dc requires sulfur content of no greater than 0.5 %, PM emissions of no greater than 0.1 lb/MMBtu, and opacity of no greater than 20% on a six-minute average, except for one 6-minute average per hour of no greater than 27%. DEQ-AQD determines compliance based on emission limits, operational, and fuel limits that are maintained through recordkeeping. The NSPS compliance is demonstrated through fuel restrictions, NAAQS, increment, and Rule 225 compliance is demonstrated through modeling.

The HFH operates two ethylene Oxide Sterilizers. One oxidizer has a capacity of 6.4 cubic feet, and the second has a capacity of 4.6 cubic feet. Power supply configuration is mapped to handle unforeseen power needs. Generators listed in the report explain details of power supply mapping. Conditions of the operating permit were incorporated into the initial ROP application that was recently modified.

Inspection Narrative

[illegible] at 1320 hours. Temperature at the hour was 85 F, with wind speed 10 mph [illegible] scheduled annual

compliance inspection. I was admitted onto the site by Ms. Catherine Semer. Mr. Dan Murakami and Charles Barker (Environmental consultant) joined us for the pre-inspection conference. Mr. Murakami informed the facility had made modifications to equipment or system for the last 12 months, and the modifications were communicated through ROP application. We went through the inspection agenda and set the time line for the Company to submit requested records to the AQD office. We concluded the meeting with a post-inspection conference and left the facility at 1440 hours. Requested records were submitted on September 10, 2013. Mr. Dan Murakami submitted two tickets to offset the parking fee; however staff refused to apply the Valet tickets. Staff redeemed the parking fees with cash and saved the retrieved tickets as exhibits. The unused tickets are attached to report as highlights of HFH team's expression of hospitality while on the facility premises for business.

COMPLAINT/COMPLIANCE HISTORY:

The Henry Ford Hospital (HFH) facility has a past history of violations dating back to August, 1988, when citizens complained about smoke from the incinerator stack. In September, 1988, a PM fall out/opacity complaint was registered against the facility. In January, 1990, a letter of violation was issued to the facility for failing to administer opacity monitoring procedure. In July 1996, a letter of violation was issued to HFH for failing to monitor opacity. In August, November, and December months of 1996, high opacity was observed from HFH stacks. There have not been recent complaints involving the Henry Ford Hospital operations since incineration was replaced with sterilization process. The HFH environmental team showed appreciable sensitivity to compliance requirements.

OUTSTANDING CONSENT ORDERS:

None

OUTSTANDING LOV'S:

None

OPERATING SCHEDULE/PRODUCTION RATE:

Henry Ford Hospital boilers are configured to operate 24 hours per day, and 7 days a week. The facility delivers an output of 15,000 pounds of steam per hour per boiler. Logistically, two Nebraska boilers are regularly scheduled to deliver the designed load simultaneously.

PROCESS DESCRIPTION:

As described in the facility background.

EQUIPMENT AND PROCESS CONTROL:

Table 1. lists the equipment and process conditions:

EMISSION Unit/Group ID	EU Description	Installation Date	ControlDevice	STACK ID
EUENGINE9	1600 kW diesel fried reciprocating engine.	September 2006	Operating limits/Material limits	SVENGINE9
EUENGINE10	750kw diesel fired reciprocating engine generator	September, 2006	Operating limits/Material limits	SVENGINE10
EUENGINE 11	900 kW diesel fired reciprocating engine generator.	March 2007	Operating limits/Material limits	SVENGINE11
EUENGINE	2000kW diesel	Yet to be	NA	SVENGINE 12a

	engine generator.			
EUENGINE 12b	2000 kW diesel fired reciprocating engine generator	Yet to be Installed	NA	SVENGINE 12b
EUENGINE 14	2000 kW diesel fired reciprocating engine generator	Yet to be Installed	NA	SVEENGINE 14

APPLICABLE RULES/RO PERMIT# MI-ROP-K1271-2012 CONDITIONS:

The information collected during HFH inspection was evaluated consistent with the permit conditions. The following observations were made:-

1. **In compliance - HFH demonstrated there has been no modification to EUENGINES system or process at the facility in the last 12 months. However, the response received from inspection indicated the company raised the stack height, [Page 2, Item# 1].**
2. **In compliance-HFH demonstrated the emission of NOx in the EUENGINE12a system did not exceed 9.2 g/kw-hr.hr [SC. 1.1]. Emission records for the last 12 months indicated the highest NOx emission per hour was 7.10 g/kw.hr.r. based on Engine specification data [Attachment #1].**
3. **In compliance - HFH demonstrated the maximum CO emissions in EUENGINE12a did not exceed 11.4 g/kw-hr.hr [SC. 1.2]. Emission records covering the last 12 months indicated the highest CO emission was 1.0 g/kw.hr.hr., based on Engine specification data [Attachment # 1].**
4. **In compliance - HFH demonstrated the maximum PM emissions in EUENGINE12a did not exceed 0.54 g/kw-hr.hr [SC. 1.3]. Records covering the last 12 months indicated the highest PM highest emission was 0.21 g/kw.hr.hr., based on engine specification data [Attachment#1].**
5. **In compliance - HFH demonstrated the maximum HC emissions in EUENGINE12a did not exceed 1.3 g/kw-hr.hr [SC. 1.4]. Records covering the last 12 months indicated the highest HC emission was 0.5 g/kw.hr.hr., based on engine specification data [Attachment # 1].**
6. **In compliance - HFH demonstrated permittee met the specifications and requirements of 40 CFR 80.510 for all current diesel fuels [SC II.1]. Records for the last 12 months indicated the transportation grade diesel specification is 15 ppm [Attachment# 2].**
7. **In compliance - HFH demonstrated the permittee burned only diesel fuel with a maximum sulfur content of 15 ppm in EUENGINE12a [SC. I1.2]. The response is same as in item # 6.**
8. **In compliance – HFH demonstrated the permittee operated EUENGINE12a in accordance with its manufacturer's written instructions or by operating procedures developed by the permittee that are approved by the manufacturer [SC. III.1]. Records highlighting standards of operation stated HFH operates and maintains procedures that meet and exceed the manufacturer's instructions [Attachment# 3].**
9. **In compliance – HFH demonstrated the permittee did not change or revised the operating instructions, procedures or settings for EUENGINE12a unless permitted by the manufacturer in writing [SC.III.2]. Response supporting records stated the HFH did not change the setting [Page 3. Item# 9].**
10. **In compliance – HFH demonstrated the permittee did not operate EUENGINE12a for more than 100 hours per engine per 12-month rolling time period as determined at the end of each calendar month during maintenance checks and readiness testing, and not more than a total of 500 hours of operation per 12 - month rolling time period as determined at the end of each calendar month [SC. III.3]. Records for the last 12 months indicated the engine12a was run for 49.1 hours [Attachment 4].**
11. **In compliance-HFH demonstrated permittee operated EUENGINE12a in accordance with manufacturer's recommendations for safe and proper operation to maximize emissions [illegible] start-up, shut down and malfunction [SC. III.4]. Response supporting the**

records stated HFH operated and maintained the unit by procedures that met or exceeded the manufacturer's instructions [Attachment # 3].

12. In compliance- HFH demonstrated the nameplate capacity from EUENGINE12a did not exceed 2000 kW with heat input of 20 MMBtu/hr.hr [SC. III.5]. Response from HFH is attached per equipment sheet [Attachment# 1].
13. In compliance - HFH demonstrated permittee equipped the EUENGINE12a with a non-resettable hour meter to track the number of operating hours [SC. VI.1]. Response supporting records is located in Attachment# 5.
14. In compliance – HFH did not need to demonstrate permittee ensured the EUENGINE12a particulate filter complied with SC I.3, and was installed with a backpressure monitor that notifies the owner/operator when the high backpressure limit of the engine was approached [SC. VI.2]]. Response received from HFH indicated the condition was not applicable to HFH system [Page 4, item# 10].
15. In compliance – HFH demonstrated permittee monitored the hours of operation of EUENGINE12a on monthly basis in a manner that is acceptable to the District Supervisor, Air Quality Division [SC. VI.3]. Supporting records are listed in attachment # 4.
16. In compliance – HFH demonstrated permittee kept, in satisfactory manner, the following records on file and ready to make it available to the Department upon request. Permittee provided manufacturer's guarantee's in attachment# 6:
    (a) Engine certification according to 40 CFR Part 89 or Part 94, as applicable, for the same engine model year and maximum and engine power. The engine must be installed and configured according to the manufacturer's specifications. [SC. VI.4a]. As applied in attachment# 6.
    (b) Records of performance test results for each pollutant for a test conducted on a similar engine, and the test must have been conducted correctly using the same methods specified in 40 CFR part 60, Subpart IIII [SC. VI.4b]. Response is same as in (a).
    (c) Records of engine manufacturer data indicating compliance with these standards [SC. VI.4c]. Response is same as in (a).
    (d) Records of control device vendor data indicating compliance with these standards, as applicable [SC. VI.4d]. Response is same as in (a).
    (e) Conduct an initial test to demonstrate compliance with emission standards according to the requirements of 60.4212, as applicable [SC. VI.4e]. Response is same as in (a).
17. In compliance -HFH demonstrated permittee kept records of sulfur content, in percent by weight, of the fuel oil; and permittee kept a separate record of the sulfur content for each shipment of the fuel oil received; all records were kept on file for a period of at least five years and available at the Department upon request [SC.VI.5]. Fuel receipts from vendors reflect the affirmation [Attachment# 2].
18. In compliance - HFH demonstrated permittee promptly reported deviations pursuant to general Conditions 21 and 22 part A [SC.VII.1]. ROP Certifications and Deviation reports are located in attachment# 7.
19. In compliance - HFH demonstrated permittee performed Semiannual reporting of monitoring and deviations pursuant to general Condition 23 of Part; the report was postmarked or received by 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 [SC. VII.2]. Response is same as in # 18.
20. In compliance –HFH demonstrated permittee performed Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A; the report was postmarked or received by appropriate AQD District office by March 15 for the previous calendar year [SC. VII.3]. Response is same as in #18.
21. In compliance – HFH demonstrated within 30 days of after completion of the installation, construction, reconstruction, relocation, or modification authorized by the Permit to Install, the permittee or the authorized agent pursuant to Rule 204 notified the AQD District Supervisor, in writing of the composition of the activity, and the completion of installation, construction, reconstruction, relocation, or modification occurred not later than commencement of trial operation of EUENGINE12a [SC. VII.4]. Response from HFH stated the condition from previous permit was incorporated into ROP [Page 5, item# 17].
22. In compliance - HFH demonstrated exhaust gases from stack SVENGINE12a were discharged [illegible] to the ambient air unless otherwise noted [SC. VIII.1]. Visual

23. In compliance -HFH demonstrated permittee complied with all applicable requirements of New Source Performance Standards for Diesel Fired reciprocating Internal Combustion Engines by compliance date(s) specified in the standards [SC. IX]. Manufacturer's summary sheet is located in attachment# 8.

EUTOSTER1

24. In compliance - HFH demonstrated the emission of Ethylene Oxide NOx in the EUTOSTER1 did not exceed 0.006 lb./hr. based on hourly averaging [SC. I.1]. Calculations provided indicated the amount of ethylene emission was 0.00014 lbs./hr. [Page 6, Item# 20].
25. In compliance – HFH demonstrated the emission of Ethylene Oxide in the EUTOSTER1 did not exceed 0.0001 ton/month based on monthly combination of all sterilization process [SC. I.2]. Calculations provided indicated the emission was 0.00000143 ton per month [Page 6, item# 21].
26. In compliance - HFH demonstrated the emission of Ethylene Oxide in the EUTOSTER did not exceed 0.141 lb./month based on monthly combination of all sterilization processes [SC. I.3]. Records for the last 12 months indicated the emission was 0.00286 lbs./month [Attachment# 10].
27. In compliance - HFH demonstrated the emission of HCFC in the EUTOSTER1 did not exceed 62.3 lbs./hr. based on monthly combination of all sterilization processes [SC. I.4]. Response from HFH indicated the condition was not applicable since sterilizer uses 100% ETO [Page 6, item# 23].
28. In compliance – HFH demonstrated the emission of HCFC in the EUEUTOSTER1 did not exceed 0.75 tons/hr. based on monthly combination of all sterilization processes [SC. I.5]. Response is same as in # 26.
29. In compliance – HFH demonstrated the use of Ethylene Oxide in the EUTOSTER1 did not exceed 6.5 lbs./day based on daily basis [SC. II.1]. Records for the last 12 months indicated daily maximum use of 0.22 lbs./day [Page 6, item# 25].
30. In compliance – HFH demonstrated the use of Ethylene Oxide in the EUTOSTER1 did not exceed 141.1lbs./month based on monthly combination of all sterilization processes [SC. II.2]. Records for the last 12 months indicated daily maximum use of ETO as 2.86 lbs./month [Page 6, item# 26].
31. In compliance – HFH demonstrated the use of HCFC in the EUTOSTER1 did not exceed 69.23 lb. /day based on daily basis [SC. II.3]. Response received from HFH indicated the condition was not applicable since sterilizer uses only 100% ETO [Page 6, item# 27].
32. In compliance – HFH demonstrated the use of HCFC in the EUTOSTER1 did not exceed 1,500 lb. /month based on monthly combination of all sterilization processes [SC. II.4]. The response is same as in # 31.
33. In compliance - HFH demonstrated the permittee did not operate the EUTOSTER1 or AERATOR(s) unless the catalytic oxidizer was installed, maintained, and operated properly according to the manufacturer's specifications. Note that proper required a minimum of 99% reduction by weight of ethylene oxide emissions to the atmosphere, and a copy of the manufacturer's specifications for the control device should be maintained on file [SC. III.1]. Response received from HFH stated the ETO sterilizer will not operate unless the catalytic oxidizer is functional [Page 7, item# 28].
34. In compliance – HFH demonstrated the permittee did not operate the sterilizer (s) and/or aerator unless a closed loop recirculating fluid vacuum pump, an air ejector system or other method of drawing a vacuum and evacuating the sterilizer chamber that prevented the discharge of any ethylene oxide to a waste water stream, was installed and operating properly [SC. III.2]. Response from HFH stated the sterilizer is an AMSCO Eagle model 3017 that does not use water. Hence there were no wastewater discharges from unit [Page 7, item# 30].
35. In compliance - HFH demonstrated permittee used a sterilant gas, which consisted of 100% ethylene oxide or an ethylene oxide/inert gas mixture. Note that acceptable inert gases include 2-chloro-1, 1, 1, 2-tetrafluoroethane (HCFC-124, carbon dioxide, or and HCFC blend, which included only toxic air contaminants for which the initial threshold screening level (ITSL) was equal to or greater than 5000 micrograms per cubic meter on a 24 hour average [SC. III.3]. Response from HFH indicated the hospital uses canisters marked with 100% ETO [Page 7, item# 31].
36. In compliance - HFH demonstrated the permittee operated Ethylene oxide sterilizers with a capacity that did not exceed 30 cu. ft. associated aeration equipment and a pollution control

device [SC. IV.1]. Response from HFH confirmed the compliance through ETO sterilizer specifications showing capacity of 4.8 cubic feet [Attachment # 9].

37. In compliance – HFH demonstrated the permittee operated catalytic oxidizer that was guaranteed by the manufacturer to reduce ethylene oxide emissions by at least 99.9% [SC. IV.2]. Response from HFH indicated a single AMSCO 50 CFM Disposer serves EUTOSTER1 as specified in manufacture's specifications [Attachment 11].
38. In compliance – HFH demonstrated permittee tested ethylene oxide emissions and control device efficiency within 60 days as requested by AQD (if applicable), and tests results were submitted to the Division within 60 days following the last date of the test [SC. V.1]. The Department (AQD) did not request for testing...
39. In compliance - HFH demonstrated permittee maintained daily and monthly sterilant usage data including the amount in pounds per cycle of ethylene oxide and any inert gas used [SC. VI.1]. Records for the last 12 months present daily and monthly tracking of materials used [Attachment# 10].
40. In compliance – HFH demonstrated permittee calculated monthly emissions of ethylene oxide in pounds as outlined in Appendix 7 [SC. VI.2]. Response is same as in item# 39.
41. In compliance – HFH demonstrated permittee monitored an operating parameter of the control device, based on either manufacturer/s specifications or performance test, which assured at least 99.9% reduction of ethylene oxide emissions and a copy, was maintained on file [SC. VI.3]. Response informed the ETO catalytic oxidizer was installed and operational when the ETO was in use, hence the configuration will not operate unless the catalytic is functional. Specifics of the system are provided [Attachment# 12].
42. In compliance - HFH demonstrated, for processes controlled by a catalytic oxidizer, permittee continuously monitored the oxidation temperature at the outlet to the catalyst bed [SC. VIa]. Response stated the format of special conditions in general permit of 2004 was changed by MDEQ removing requirements for recording and reporting temperature of catalyst bed as control for RTO operations. [Page 8, item# 38].
43. In compliance - HFH demonstrated permittee recorded date, duration, and description of any malfunction of the equipment of the control equipment, any maintenance performed, any replacement of catalyst or scrubber liquor, or any testing results [SC. VI.4]. Response is same as in item # 37.
44. In compliance – HFH demonstrated permittee recorded the date and description of any malfunction or new installation of a sterilizer, aerator or control device [SC. VI.5]. Records of ETO maintenance for the last 12 months are presented [Attachment# 12].
45. In compliance - HFH demonstrated the permittee kept, in a satisfactory manner, operating records on file and made available to the AQD Supervisor upon request [SC. VI.6]. Operating records are provided [Attachment# 10 and 12].
46. In compliance – HFH demonstrated permittee promptly reported deviations pursuant to general Conditions 21 and 22 of part A [SC. VII.1]. Records referencing ROP certification and deviation reports are listed [Attachment# 7].
47. In compliance - HFH demonstrated permittee reported Semiannual monitoring and deviations pursuant to general Condition 23 of Part A, and report should have been postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 [SC. VII.2] Response is same as in item# 46.
48. In compliance - HFH demonstrated permittee reported Annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and the report should have been postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year [SC. VII.3]. Response is same as in item# 46.
49. In compliance - HFH demonstrated the exhaust stack gases from stack SVSTACK listed in the ROP were discharged unobstructed vertically upwards to the ambient air unless otherwise noted [SC. VIII.1]. Visual inspection confirmed compliance.

EUWPAVGEN8

50. In compliance - HFH demonstrated the maximum amount of SO2 emission from EUWPAVGEN8 did not exceed 0.33 lb. /MMBTU heat input based on instantaneous assessment [SC. I.1]. Response indicated that HFH uses Ultra low sulfur that meets the sulfur requirements [Page 10, item# 46].
51. In compliance – HFH demonstrated the permittee burned distillate oil with a maximum sulfur. Fuel vendors' receipts are presented [Attachment# 2].
52. In compliance - HFH demonstrated content of sulfur in the fuel oil used in EUWPAVGEN8 did

53. In compliance – HFH demonstrated permittee did not use more than 58,500 gallons of distillate oil per 12-month rolling time period as determined at the end of each calendar month, and a written record of the fuel usage was kept on file for a period of at least five years to be made available to the AQD upon request [SC. II.2]. Records for the last 12 months indicated the facility used 4410 gallons of distillate [Page 10, Item# 49].
54. In compliance – HFH demonstrated permittee did not operate EUWPAVGEN8 for more than 500 hours per 12 month rolling time period as determined at the end of each calendar month, and a written log of hours of operation were kept on file for a period of at least five years to be made available to the AQD upon request [SC. III.1]. Records for the past 12 months indicated the facility operated 42 hours for testing [Attachment# 4].
55. In compliance – HFH demonstrated permittee operated the emergency generator only at such times when all or portion of the normal electric power was interrupted or during periods of maintenance checks and operator training [SC. III.2]. Response is same as in Item# 54.
56. In compliance - HFH demonstrated permittee maintained monthly records of the sulfur content of distillate oil on file [SC. VI.1]. Fuel vendors' receipts are presented [Attachment# 2].
57. In compliance – HFH demonstrated permittee promptly reported deviations pursuant to General Conditions 21 and 22 of Part A [SC. VII.1]. Records for the last 12 months are presented [Attachment# 7].
58. In compliance - HFH demonstrated permittee reported Semiannual monitoring and deviations pursuant to Condition 23 of Part A, the report postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 [SC. VII.2] Response is same as in item # 57.
59. In compliance – HFH demonstrated permittee reported annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and report postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year [SC. VII.3]. Response is same as in Item# 57.
60. In compliance - HFH demonstrated the exhaust gases from SVSTACK in EUWPAVGEN8 were discharged unobstructed vertically upwards to the ambient air unless otherwise noted [SC. VIII.1]. Visual inspection confirmed

EUBUNITGEN

61. In compliance – HFH demonstrated the maximum emissions of NOx in EUBUNITGEN were 13.8 lb. /hr. based on hourly emissions [SC. I.1]. Records submitted for the last 12 months indicated the total NOx emission was 8.8 lb./hr. [Attachment# 15].
62. In compliance – HFH demonstrated the maximum emission of NOx in EUBUNITGEN was 3.5 tpy based on annually emissions [SC. I.2]. Records for the last12 months indicate highest emission was 0.258 tpy [Attachment# 4].
63. In compliance – HFH demonstrated the maximum emissions of SO2 in EUBUNITGEN were 1.0 lb. /hr. based on hourly emissions [SC. I.3]. Response based estimation on manufacturer's specifications [Attachment# 15].
64. In compliance – HFH demonstrated the maximum emissions of SO2 in EUBUNITGEN were 0.25 lb. /hr. based on annually emissions [SC. I.4]. Response is same as in Item# 63.
65. In compliance – HFH demonstrated the permitttee met the specifications and requirements of 40 CFR 80.510(b) for all current diesel fuels [SC. II.1]. Fuel vendors' receipts are presented [Attachment# 2].
66. In compliance – HFH demonstrated the permitttee only burned diesel fuel with a maximum sulfur content of 15 ppm in EUBUNITGEN [SC. II.2]. Response is presented [Attachment# 2].
67. In compliance - HFH demonstrated the permitttee did not generate electricity for more than 500 hours per 12-month rolling time period, and every month's hours of electrical generation was kept on file for a period of five years and available to the AQD upon request [SC. III.1]. Records for the last 12 months indicated the facility generated 40 hours of electricity [Attachment# 4].
68. In compliance - HFH demonstrated the permitttee maintained records of sulfur content on file for every shipment [SC. VI.1]. Vendor's receipts are listed [Attachment# 2].
69. In compliance –HFH demonstrated permittee promptly reported deviations pursuant to General Conditions 21 and 22 of Part A [SC. VII.1]. Response is same as in Item# 57.
70. In compliance - HFH demonstrated permittee reported Semiannual monitoring and deviations pursuant to Condition 23 of Part A, the report postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for

71. In compliance - HFH demonstrated permittee reported annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and report postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year [SC. VII.3]. Response is same as in item# 57.
72. In compliance – HFH demonstrated the exhaust gases from SVSTACK in EUBUNITGEN were discharged unobstructed vertically upwards to the ambient air unless otherwise noted [SC. VIII.1]. Visual inspection confirmed compliance.

EUCLVBOILER [EUnit is currently removed from facility. EPA and MDEQ were notified- Appendix 19]

73. In compliance – HFH demonstrated the maximum emissions of NOx in EUCLVBOILER was 7.15 tpy based on 12-month rolling time period as determined at the end of each calendar year [SC. I.1]. Records for the last 12 months indicated the NOx emissions were 0.98 tons per month [Attachment# 4].
74. In compliance - HFH demonstrated the maximum use of Natural Gas usage in EUCLVBOILER was 143 MMCF/yr. based on 12-month rolling time period as determined at the end of each calendar year [SC. II.1]. Records for the last 12 months indicated the amount of natural gas used was 19.7 MMCF [Attachment# 4].
75. In compliance - HFH demonstrated the permittee burned only natural gas in EUCLVBOILER [Sc. III.1]. Response confirmed the unit is capable of burning only natural gas, and not configured to burn any other fuel [Page 13, item# 71].
76. In compliance – HFH demonstrated permittee kept monthly natural gas usage records in a format acceptable to the AQD District Supervisor, indicating the amount of natural gas used, in cubic feet, on a calendar month basis and a 12-month rolling time period basis, and records indicated the total amount of natural gas used in EUCLVBOILER [SC. VI.1]. Response indicated natural gas usage was recorded monthly [Attachment# 4].
77. In compliance – HFH demonstrated permittee kept records of emissions and operating information for EUCLVBOILER to comply with the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and Dc, and all source emissions data and operating information were kept for the purpose of compliance demonstration [SC. VI.2]. Records of emissions for the last 12 months are listed [Attachment# 4].
78. In compliance – HFH demonstrated permittee promptly reported deviations pursuant to General Conditions 21 and 22 of Part A [SC. VII.1]. Response is same as in item# 57.
79. In compliance – HFH demonstrated permittee reported Semiannual monitoring and deviations pursuant to Condition 23 of Part A, the report postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 [SC. VII.2]. Response is same as in item# 57.
80. In compliance – HFH demonstrated permittee reported annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and report postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year [SC. VII.3]. Response is same as in item# 57.

FGPEAKSHAVERS

81. In compliance – HFH demonstrated the maximum emissions of NOx in FGPEAKSVAVERS did not exceed 13.5 tpy based on 12-month rolling time period as determined at the end of each calendar year [SC. I.1]. Records for the last 12 months indicated NOx emission was 0.11 tons per month [Attachment# 4].
82. In compliance – HFH demonstrated the sulfur content of fuel oil used in FGPEAKSHAVERS did not exceed 0.05 percent by weight based on instantaneous assessment. [SC. II.1]. Response is located in Attachment# 2.
83. In compliance – HFH demonstrated permittee did not operate engines included in FGPEAKSHAVERS for more than a combined total of 1,500 hours per 12-month rolling time period as determined at the end of each calendar month [SC. III.1]. Records covering the last 12 months indicated the facility operated the engines for 11 hours [Attachment# 4].
84. In compliance – HFH demonstrated permittee analyzed the following once during any calendar year where the fuel oil usage exceeded 5000 gallons:
    (a) Sulfur content of fuel oil [SC. V.1a]. The condition was not applicable (N/A). The units were removed from service since May, 2013 [Page 15, item# 80(a), and 80(b)].
    (b) Fuel oil heating value [SC. V.1b]. Same as above.

85. In compliance – HFH demonstrated within 12 months of ROP issuance the permittee verified the NOx emission rates from one generator by testing at owner's expense in accordance with EPA Federal Reference Test Methods; and maintained plans to conduct second test before the end of permit term if the first test showed NOx emissions greater than 90% of the emission limit [SC. V.2]. Response is same as in item# 80.
86. In compliance – HFH demonstrated permittee monitored and recorded in a satisfactory manner the hours of operation for the FGPEAKSHAVERS on a monthly basis [SC. VI.1]. Records for the last 12 months indicated the units for 11 hours. Details of the records are included [Attachment# 4].
87. In compliance – HFH demonstrated that for each of the following fuel shipment permittee maintained monthly records as presented in the attached vendor's receipts [Attachment# 2]:
    (a) Quantity of No. 2 fuel oil received in gallons [SC. VI.2a]. As stated above.
    (b) Quantity of No. 2 fuel oil individual boiler usage in gallons [SC. VI.2b]. Response is same as in (a).
    (c) Fuel supplier certification records listing sulfur content, in weight percent, and heating value for all fuel shipments received [SC. VI.2c]. Response is same as in (a).
88. In compliance – HFH demonstrated permittee promptly reported deviations pursuant to General Conditions 21 and 22 of Part A [SC. VII.1]. Response is same as in item# 57.
89. In compliance - HFH demonstrated permittee reported Semiannual monitoring and deviations pursuant to Condition 23 of Part A, the report postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 [SC. VII.2] Response is same as in item# 57.
90. In compliance - HFH demonstrated permittee reported annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and report postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year [SC. VII.3]. Response is same as in item# 57.
91. In compliance – HFH demonstrated the exhaust gases from SVSTACK in EUWPAVGEN8 were discharged unobstructed vertically upwards to the ambient air unless otherwise noted [SC. VIII.1]. Visual inspection confirmed compliance.

FENGINES

92. In compliance – HFH demonstrated the maximum emissions of NOx in FGENGINES were 41.1tpy based on hourly emissions [SC. I.1]. Records for the last 12 months indicated NOx emission was 1.57 tpy [Attachment# 4].
93. In compliance – HFH demonstrated the permittee did not operate EUENGINE9, EUENGINE10, and EUENGINE11 for more than 300 hours each per 12-month rolling time period as determined at the end of each calendar month [SC. III.1]. Records for the last 12 months confirmed the assessment [Attachment# 4].
94. In compliance - HFH demonstrated permittee did not operate EUENGINE12a for more than 500 hours per 12 month rolling time period as determined at the end of each calendar month [SC. III.2]. Records for the last 12 months indicated the unit ran for 49.1 hours [Page 16, item# 90].
95. In compliance – HFH did not need to demonstrate permittee did not operate EUENGINE 12b, EUENGINE14 for more than 500 hours each per 12-month rolling time period as determined at the end of each calendar month [SC. III.3]. The generators are yet to be installed [Page 17, item# 91].
96. In compliance – HFH demonstrated permittee monitored in a satisfactory manner the hours of operation for FGENGINES on a monthly basis [SCVI.1]. Records submitted confirm [Attachment# 4].
97. In compliance – HFH demonstrated permittee completed all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition [SC. VI.2]. Records submitted confirm [Attachment# 4].
98. In compliance – HFH demonstrated permittee kept in a satisfactory manner, monthly and previous 12-month NOx emission calculation records for ENGINES as required by SC1.1, and permittee kept all records on file for a period of at least 5 years and make them available to the Department upon request. [SC. VI.3]. Response is same as in item# 97.
99. In response – HFH demonstrated permittee kept, in a satisfactory manner, a written log of the monthly hours of operation of FENGINES, and made it available to Department of upon request [SC. VI.4]. Response is same as in item# 97.

100. In compliance – HFH demonstrated permittee promptly reported deviations pursuant to General Conditions 21 and 22 of Part A [SC. VII.1]. Response is same as in item# 57.
101. In compliance - HFH demonstrated permittee reported Semiannual monitoring and deviations pursuant to Condition 23 of Part A, the report postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 [SC. VII.2] Response is same as in item# 57.
102. In compliance – HFH demonstrated permittee reported annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and report postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year [SC. VII.3]. Response is same as in item# 57.

FGENGINES 9-10-11

103. In compliance – HFH demonstrated the maximum fuel oil used contained maximum sulfur content of 0.05 percent by weight based on instantaneous assessment [SC. I.1]. Records are presented [Attachment# 2].
104. In compliance - HFH demonstrated permittee operated FGENGINES9-10-11 in accordance with the manufacturer's written instruction or by operating procedures developed by the permittee that are approved by the manufacturer [SC. III.1]. Records submitted confirm compliance [Attachment# 3].
105. In compliance – HFH demonstrated permittee did not operate FGENGINES9-10-11 for more than 100 hours per 12-month rolling time period as determined at the end of each calendar month during maintenance and readiness testing, and not more than a total of 300 hours of operation per rolling 12-month rolling time period as determined at the end of each calendar month. [SC. III.2]. Details of compliance are attached [Attachment# 4].
106. In compliance - HFH demonstrated permittee operated each generator of FGENGINES9-10-11 in accordance with manufacturer's recommendations for safe and proper operation to minimize emissions during periods of start-up, shutdown and malfunction [SC III.3]. Details of maintenance are provided [Attachment# 3].
107. In compliance – HFH demonstrated the nameplate capacity from EUENGINE9 did not exceed 1600 Kw with heat input of 15 MMBtu/hr.hr [SC. III.4]. HFH explained the name plate is yet to be delivered by manufacturer [Attachment# 16].
108. In compliance – HFH demonstrated the nameplate capacity from EUENGINE10 did not exceed 750 Kw with heat input of 7 MMBtu/hr.hr [SC. III.5]. Confirmation is provided [Attachment# 17.
109. In compliance – HFH demonstrated the nameplate capacity from EUENGINE11 did not exceed 1600 Kw with heat input of 900 MMBtu/hr.hr [SC. III.6]. Confirmation is presented [Attachment# 18].
110. In compliance – HFH demonstrated permittee equipped each generator of FGENGINES9-10-11 with a non-resettable hour meter to track the number of operating hours [SC. VI.1]. Visual inspection confirmed the units were installed with non-resettable meters [Page 19, item# 106].
111. In compliance – HFH demonstrated permittee promptly reported deviations pursuant to General Conditions 21 and 22 of Part A [SC. VII.1]. Response is same as in item# 57.
112. In compliance – HFH demonstrated permittee reported Semiannual monitoring and deviations pursuant to Condition 23 of Part A, the report postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 [SC. VII.2] Response is same as in item# 57.
113. In compliance – HFH demonstrated permittee reported annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and report postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year [SC. VII.3]. Response is same as in item# 57.
114. In compliance – HFH demonstrated permittee notified the AQD District Supervisor in writing of completion of the installation, construction, reconstruction, relocation, or modification authorized by this permit within 30 days after completion [SC. VII.4]. Response confirmed compliance [Page 20, item# 110].
115. In compliance – HFH demonstrated the exhaust gases from SVSTACK in FGENGINES were discharged unobstructed vertically upwards to the ambient air unless otherwise noted [SC. VIII.1]. Visual inspection confirmed compliance.

FGENGINES12b & 14

116. In compliance – HFH did not need to demonstrate the maximum emissions of NMHC +NOx in FGENGINES12b & 14 did not exceed 6.4 g/Kw-hr.hr based on emissions test method [SC. I.1]. The units are yet to be installed [Page 20, item# 112].
117. In compliance – HFH did not need to demonstrate the maximum emissions of CO in FGENGINES12b & 14 did not exceed 3.5 g/Kw-hr.hr based on emissions test method [SC. I.2]. Response is same as in item# 116.
118. In compliance – HFH did not need to demonstrate the maximum emissions of PM in FGENGINES12b & 14 did not exceed 0.2 g/Kw-hr.hr based on emissions test method [SC. I.3]. Response is same as in item# 116.
119. In compliance – HFH did not need to demonstrate permittee met the specifications and requirements of 40 CFR 80.510 for the entire current diesel fuels use [SC. II.1]. Response is same as in item# 116.
120. In compliance – HFH did not need to demonstrate permittee burned only diesel fuel with a maximum sulfur content of 15 ppm in FENGINES12b & 14 [SC. II.2]. Response is same as in item# 116.
121. In compliance – HFH did not need to demonstrate permittee operated EUENGINES12b & 14 in accordance with its manufacturer's written instructions or by operating procedures developed by the permittee that are approved by the manufacturer [SC. III.1]. Response is same as in item# 116.
122. In compliance – HFH did not need to demonstrate permittee did not change or revise the operating instructions, procedures or settings for EUENGINES12b & 14 unless permitted by the manufacturer in writing [SC. III.2]. Response is same as in item# 116.
123. In compliance – HFH did not need to demonstrate permittee did not operate FGENGINES12b & 14 for more than 100 hours per engine per 12-month rolling time period as determined at the end of each calendar month during maintenance checks and readiness testing and not more than a total of 500 hours of operation per rolling time period as determined at the end of each calendar month [SC. III.3]. Response is same as in item# 116.
124. In compliance – HFH did not need to demonstrate permittee operated FGENGINES12b & 14 in accordance with manufacturer's recommendations for safe and proper operation to minimize emissions during periods of start-up, shutdown and malfunction [SC. III.4]. Response is same as in item# 116.
125. In compliance – HFH did not need to demonstrate the nameplate capacity from EUENGINE12b did not exceed 2000 Kw with heat input of 20 MMBtu/hr.hr [SC. III.5]. Response is same as in item# 116.
126. In compliance – HFH did not need to demonstrate the nameplate capacity from EUENGINE14 did not exceed 2000 Kw with heat input of 20 MMBtu/hr.hr [SC. III.6]. Response is same as in item# 116.
127. In compliance – HFH did not need to demonstrate permittee equipped each generator of FGENGINES12b & 14 with a non-resettable hour meter to track the number of operating hours [SC. VI.1]. Response is same as in item # 116.
128. In compliance – HFH did not need to demonstrate if FGENGINES12b & 14 contained a diesel particulate filter to comply with SC. 1.3 the filter was installed with a backpressure monitor that notified the owner/operator when the high backpressure limit of the engine was approached [SC. VI.2]. Response is same as in item# 116.
129. In compliance – HFH did not need to demonstrate permittee monitored the hours of operation of EUENGINE12b and 14 on a monthly basis in a manner that was acceptable to the District Supervisor, Air Quality Division [SC. VI.3]. Response is same as in item# 116.
130. In compliance - HFH did not need to demonstrate permittee kept in a satisfactory manner, the following records on file and made available to the Department upon request based on the established response in item# 116:
    (a) Engine certification according to 40 CFR Part 89 or Part 94, as applicable, for the same engine model year and maximum engine power; and the engine must have been installed and configured according to the manufacturer's specifications [SC. VI.4a]. Response is same as above.
    (b) Records of performance test results for each pollutant for a test conducted on a similar engine; and the test must have been conducted correctly and using the same methods specified in 40 CFR Part 60, Subpart IIII [SC. VI.4b]. Response is same as above
    (c) Records of engine manufacturer data indicating compliance with these standards [SC. VI.4c]. Response is same as above.

(d) Records of control device vendor data indicating compliance with these standards as applicable [SC. VI.4d]. Response is same as above.
(e) Conduct an initial test to demonstrate compliance with the emission standards according to the requirements of 60.4212, as applicable [SC. VI.4e]. Response is same as above

131. In compliance – HFH did not need to demonstrate permittee kept records of the sulfur content in percent by weight of the fuel oil; and permittee kept a separate record of the sulfur content for each shipment of the fuel oil received; and all records were kept on file for a period of at least five years to be made available to the Department upon request [SC. VI.5]. Response is same as in item# 116.
132. In compliance - HFH did not need to demonstrate permittee promptly reported deviations pursuant to General Conditions 21 and 22 of Part A [SC. VII.1]. Response is same as in item# 116.
133. In compliance – HFH did not need to demonstrate permittee reported Semiannual monitoring and deviations pursuant to Condition 23 of Part A, the report postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 [SC. VII.2] Response is same as in item# 116.
134. In compliance - HFH did not need to demonstrate permittee reported annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and report postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year [SC. VII.3]. Response is same as in item# 116.
135. In compliance- HFH did not need to demonstrate permittee notified the AQD District Supervisor in writing of completion of the installation, construction, reconstruction, relocation, or modification authorized by this permit within 30 days after completion [SC. VII.4]. Response is same as in item# 116.
136. In compliance - HFH did not need to demonstrate the exhaust gases from SVSTACK in FGENGINES were discharged unobstructed vertically upwards to the ambient air unless otherwise noted [SC. VIII.1]. Response is same as in item# 116.

FGBOILERS

137. In compliance - HFH demonstrated the maximum NOx emissions in FGBOILERS did not exceed 35.4 tpy based on emissions 12-month rolling time period as determined at the end of each calendar month [SC. I.1]. Records for the last 12 months indicated NOx emission was 2.9 tons per month [Attachment# 4].
138. In compliance – HFH demonstrated the fuel oil burned in FGBOILERS had maximum sulfur content of that did not exceed 0.03 percent by weight based on instantaneous assessment [SC. II.1]. Fuel vendor receipts confirm compliance [Attachment# 2].
139. In compliance - HFH demonstrated the amount of fuel oil burned in FGBOILERS did not exceed 1,234,000 gallons/yr. based on 12-month rolling time period [SC. II.2]. Records for the last 12 months indicated the amount of fuel oil burned was 1 gallon [Page 24, item# 135].
140. In compliance – HFH demonstrated the amount of natural Gas burned in FGBOILERS did not exceed 1,515,480,000 cut/yr. based on 12-month rolling time period [SC. II.3]. Records for the last 12 months indicated the amount of natural gas burned was 283,000,000 cu. feet. [Page 24, Item# 136]
141. In compliance – HFH demonstrated permittee monitored in a satisfactory manner the natural gas and fuel oil usage from FGBOILERS on a monthly basis [SC. VI.1]. Records for the last 12 months that were provided confirmed compliance [Attachment# 4].
142. In compliance – HFH demonstrated permittee kept, in a satisfactory manner the monthly and previous 12-month NOx emission calculation records for FGBOILERS, as required by 1.1; and permittee kept all records on file for at least a period of five years for making it available to the Department upon request [SC. VI.2]. Response is same as in item# 141.
143. In compliance - HFH demonstrated permittee kept, in a satisfactory manner the monthly natural gas and fuel oil records for FGBOILERS for a period of at least five years for making it available to the Department upon request [SC. VI.3]. Response is same as in item# 141.
144. In compliance – HFH demonstrated the permittee kept, in a satisfactory manner, fuel oil Supply certification for each delivery of fuel. The certification included the name of the fuel oil supplier and a statement from the fuel oil supplier; and the fuel oil complied with the specifications under the definitions of distillate oil in 40 CFR 60.41c [SC. 2.9]. Records for the last 12 months confirmed compliance [Attachment# 2].
145. In compliance – HFH demonstrated permittee promptly reported deviations pursuant to

146. **In compliance - HFH demonstrated permittee reported Semiannual monitoring and deviations pursuant to Condition 23 of Part A, the report postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 [SC. VII.2]. Response is same as in item# 57.**
147. **In compliance – HFH demonstrated permittee reported annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and report postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year [SC. VII.3]. Response is same as in item# 57.**
148. **In compliance – HFH demonstrated permittee notified the AQD District Supervisor in writing of completion of the installation, construction, reconstruction, relocation, or modification authorized by this permit within 30 days after completion [SC. VII.4]. Information is on AQD file and MACES.**
149. **In compliance – HFH confirmed the Stack height for SVBOILERS is 75.8 feet above ground level [SC. VIII.1]. Shop drawings indicated stack height was 75 feet, 10 inches [Page 25, item# 145].**

Inspection Areas of Focus:

1. Boilers –Boilers were operated in a satisfactory manner.
2. Stacks/Main stack opacity-Stacks had the opacity 0.
3. No. 2 Fuel oil storage tanks - The fuel oil tanks and dispensing area had a pool of fuel oil on the floor. The attention of the Director and Environmental coordinator was raised to the issue. It was a safety/hygiene issue.
4. Record keeping- recordkeeping was in digital form. The form of recordkeeping met compliance requirements.
5. Emission Units –the units were satisfactorily maintained. Some EUs were dismantled, and some were yet to be installed.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS

This facility did not have nor indicated the need for fugitive dust plan.

MAERS REPORT REVIEW:

The Henry Ford Hospital facility's 2012 MAERS was reviewed and found in compliance with reporting requirements.

FINAL COMPLIANCE DETERMINATION

A level 2 inspection performed at HFH was well accomplished. The facility operated the permitted processes in satisfactorily manner. The company management showed commitment to maintaining compliance with permit conditions. Records submitted by the Company, and the on-site inspection indicated the facility is dedicated to programs for emissions reduction. The HFH was in compliance with the permit ROP# MI-ROP-K1271-2012 conditions at the time of inspection.

NAME fh DATE 9/17/13 SUPERVISOR W. M.

Response to August 20, 2013 information request for
HENRY FORD HOSPITAL PERMIT # MI-ROP-K1271-2012
SRN: K1271 2799 West Grand Blvd, Detroit, MI 48202.

Prepared for:
Mr. Terseer Hemben
MDNRE - Air Quality Division
Detroit Office
Cadillac Place, Suite 2-300
3058 West Grand Blvd.
Detroit, MI 48202-6058

September 2013

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RECEIVED
SEP 10 2013
Air Quality Division
Detroit Office

Daniel Murakami, Director
Plant Operations & Support Services
Henry Ford Hospital
2799 West Grand Boulevard
Detroit, MI 48202
(313) 916-2202

September 10, 2013

Mr. Terseer Hemben
MDNRE - Air Quality Division
Detroit Office
Cadillac Place, Suite 2-300
3058 West Grand Blvd.
Detroit, MI 48202-6058

Subject: Response to August 20, 2013 information request for
HENRY FORD HOSPITAL PERMIT # MI-ROP-K1271-2012 SRN: K1271
2799 West Grand Blvd, Detroit, MI 48202.

Dear Mr. Hemben:

Henry Ford Hospital is pleased to present this response to your information request of August 20, 2013. We have provided responses to the items that were highlighted in bold as requested in your memorandum. These responses are found in the following table, with supporting information in the attachments section.

Thank you and please call if you have any questions regarding these responses.

Sincerely,

Dan Murakami
Director Support Services/Plant Operations
Henry Ford Hospital

TABLE OF EMISSION UNITS REFERENCED

Emission Unit ID	HFHS Common Name/ status	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EUENGINE1	Disengaged May 2013	GSPS PEAK SHAVER #1- One of three electrical generators used for peak shaving or emergencies	1/1/67	FGPEAKSHAVERS
EUENGINE2	Disengaged May 2013	GSPS PEAK SHAVER #2- One of three electrical generators used for peak shaving or emergencies	1/1/67	FGPEAKSHAVERS
EUENGINE3	Disengaged May 2013	GSPS PEAK SHAVER #3- One of three electrical generators used for peak shaving or emergencies	1/1/67	FGPEAKSHAVERS
EUTOSTER1		AMSCO Model 3017 Ethylene oxide sterilizer on 5th floor	1/1/99	NA
EUWPAVGEN8		West pavilion Emergency Generator HFHS No. 8	1/1/98	NA
EUBUNITGEN		Emergency Generator at B unit – HFHS No.9	1/1/99	NA
EUENGINE9	EP Cath Lab Outside, 10	A nameplate capacity of 1600 KW with heat capacity input of 15 MMBtu/hr diesel fired reciprocation engine generator	1/1/01	FGENGINES 9-10- 11
EUENGINE10	Clinic Outside, 4	A nameplate capacity of 750 KW with heat capacity input of 7 MMBtu/hr diesel fired reciprocation engine generator	1/1/06	FGENGINES 9- 10-11
EUENGINE11	IPD outside, 11	A nameplate capacity of 900 KW with heat capacity input of 9 MMBtu/hr diesel fired reciprocation engine generator	3/1/07	FGENGINES 9-10-11
EUENGINE12A	Boiler plant, 12	A nameplate capacity of 2000 KW with heat capacity input of 20 MMBtu/hr diesel fired reciprocation engine generator	8/1/08	FGENGINES
EUNGINE12b	(Not installed)	A name plate capacity of 2000 KW with heat input of 20 MMBtu/hr diesel fired reciprocating engine generator	Not Installed	FGENGINES
EUENGINE14	(Not installed)	A name plate capacity of 2000 KW with heat input of 20 MMBtu/hr diesel fired reciprocating engine generator	Not Installed	FGENGINES
EUCLVBOILER	Boiler 3 (Dismantled/removed 4/15/13)	Cleaver Brooks 16.3 MMBtu/hr natural gas fired boiler	12/18/01	NA
EUBOILER4	Boiler 1	88.4 MMBtu/hr Nebraska Boiler, #2 fuel oil and natural gas fired	8/1/08	FGBOILERS
EUBOILER5	Boiler 2	88.4 MMBtu/hr Nebraska Boiler, #2 fuel oil and natural gas fired	9/1/08	FGBOILERS
EUBOILER6	Boiler 4	88.4 MMBtu/hr Nebraska Boiler, #2 fuel oil and natural gas fired	4/1/13	FGBOILERS

LIST OF ATTACHMENTS

Number	Description
1	Engine 12a specification sheet
2	Fuel receipts and certification
3	Generator maintenance procedures
4	Emission Unit Recordkeeping forms
5	Non-resettable meter info
6	Engine 12a manufacturers certification
7	ROP Deviation and Annual Certification report and certified mail receipts
8	MDEQ NSPS information sheet
9	ETO unit specification sheet
10	ETO Recordkeeping forms
11	ETO control device specification sheet
12	ETO Maintenance records
13	EUPAVGEN8 specification sheet
14	Emergency Generators Operators log form
15	EUBUNITGEN specification sheet
16	EUENGINE9 Specification sheet
17	EUENGINE10 Specification sheet
18	EUGEN11 Specification Sheet
19	Notification of Change Form and certified mail receipts

Question	HFH Response
1. Please demonstrate there has not been any modification to any EUENGINES system or process at the facility in the last 12 months.	EUENGINES (FGENGINES and FGENGINES9-10-11 in permit) have not undergone any modifications to systems or processes (other than raising the stack height of EUENGINE12A in December, 2012 when it was found to be 3.7 feet shorter than specified – this was explained in the Deviation report of March 2013)
2. Please demonstrate the emission of NOx in the EUENGINE12a system did not exceed 9.2 g/kw-hr.hr [SC. 1.1]. **Request records for the last 12 months**.	Condition met. See **Attachment 1** EUENGINE12a specification sheet which lists manufacturer's emissions information.
3. Please demonstrate the maximum CO emissions in EUENGINE12a did not exceed 11.4 g/kw-hr.hr [SC. 1.2]. **Request records covering the last 12 months**.	Condition met. See **Attachment 1** EUENGINE12a specification sheet which lists manufacturer's emissions information.
4. Please demonstrate the maximum PM emissions in EUENGINE12a did not exceed 0.54 g/kw-hr.hr [SC. 1.3]. **Request records covering the last 12 months**.	Condition met. See **Attachment 1** EUENGINE12a specification sheet which lists manufacturer's emissions information.
5. Please demonstrate the maximum HC emissions in EUENGINE12a did not exceed 1.3 g/kw-hr.hr [SC. 1.4]. **Request records covering the last 12 months**.	Condition met. See **Attachment 1** EUENGINE12a specification sheet which lists manufacturer's emissions information.
6. Please demonstrate permittee met the specifications and requirements of 40 CFR 80.510 for all current diesel fuels [SC II.1]. **Request records for the last 12 months**.	Condition met. Please see **Attachment 2** for fuel vendor's receipts indicating deliveries of dyed ultra low sulfur fuel oil. Fuel is transportation grade diesel fuel which has specifications that are well below the maximum sulfur content limit. Current transportation grade diesel is 15 ppm sulfur.
7. Please demonstrate the permittee burned only diesel fuel with a maximum sulfur content of 15 ppm in EUENGINE12a [SC. I1.2]. **Request records**.	Condition met. Please see **Attachment 2** for fuel vendor's receipts indicating deliveries of dyed ultra low sulfur fuel oil. Fuel is transportation grade diesel fuel which has specifications that are well below the maximum sulfur content limit. Current transportation grade diesel is 15 ppm sulfur.
8. Please demonstrate the permittee operated EUENGINE12a in accordance with its manufacturer's written instructions or by operating procedures developed by the permittee that are approved by the manufacturer [SC. III.1]. **Request records highlighting standards of operation.**	HFHS operates and maintains this unit by procedures that meet or exceed the manufacturer's instructions. **Attachment 3** shows the preventative maintenance procedures.

9. Please demonstrate the permittee did not change or revised the operating instructions, procedures or settings for EUENGINE12a unless permitted by the manufacturer in writing [SC.III.2]. **Request supporting records.**	HFHS did not change or revise the operating instructions, procedures or setting for this unit.
10. Please demonstrate the permittee did not operate EUENGINE12a for more than 100 hours per engine per 12-month rolling time period as determined at the end of each calendar month during maintenance checks and readiness testing, and not more than a total of 500 hours of operation per 12 - month rolling time period as determined at the end of each calendar month **[SC. III.3]. Request records for the last 12 months.**	Condition met. Recordkeeping forms in **Attachment 4** show this unit ran for 49.1 hours for the last 12 months from August 2012 through July 2013, well below the allowable hours.
11. Please demonstrate permittee operated EUENGINE12a in accordance with manufacturer's recommendations for safe and proper operation to maximize (assume meaning minimize) emissions during periods of start - up, shut down and malfunction **[SC. III.4]. Request supporting records.**	HFHS operated EUENGINE12a in accordance with manufacturer's recommendations for safe and proper operation to minimize emissions during periods of start - up, shut down and malfunction. HFHS operates and maintains this unit by procedures that meet or exceed the manufacturer's instructions. **Attachment 3** shows the preventative maintenance procedures.

(Note: a discrepancy was noted in the numbering on the original information request resulting in a duplication in the numbering for questions 8-11; we have repeated the numbering to be consistent with the information request)

8. Please demonstrate the nameplate capacity from EUENGINE12a did not exceed 2000 kW with heat input of 20 MMBtu/hr.hr **[SC. III.5]. Request supporting records.**	Condition met; please see **Attachment 1**, equipment specification sheet.
9. Please demonstrate permittee equipped the EUENGINE12a with a non-resettable hour meter to track the number of operating hours [SC. VI.1]. **Requests supporting records.**	Condition met. This unit (and all emergency generators are equipped with non-resettable hour meters. See **Attachment 5**.

10. Please demonstrate permittee, if applicable, ensured the EUENGINE12a particulate filter complied with SC I.3, and was installed with a backpressure monitor that notifies the owner/operator when the high backpressure limit of the engine was approached **[SC. VI.2]]. Request supporting records.**	Not Applicable. No filter installed.
11. Please demonstrate permittee monitored the hours of operation of EUENGINE12a on monthly basis in a manner that is acceptable to the District Supervisor, Air Quality Division **[SC. VI.3]. Request supporting records.**	Condition met. Recordkeeping forms in **Attachment 4** show this unit ran for 49.1 hours for the last 12 months from August 2012 through July 2013.
12. Please demonstrate permittee kept, in satisfactory manner, the following records on file and ready to make it available to the Department upon request: (a) Engine certification according to 40 CFR Part 89 or Part 94, as applicable, for the same engine model year and maximum and engine power. The engine must be installed and configured according to the manufacturer's specifications. **[SC. VI.4a]. Request supporting records.** Records of performance test results for each pollutant for a test conducted on a similar engine, and the test must have been conducted correctly using the same methods specified in 40 CFR part 60, Subpart IIII **[SC. VI.4b]. Request records.** Records of engine manufacturer data indicating compliance with these standards **[SC. VI.4c]. Request supporting records.** Records of control device vendor data indicating compliance with these standards, as applicable **[SC. VI.4d]. Request supporting records.** Conduct an initial test to demonstrate compliance with emission standards according to the requirements of 60.4212, as applicable **[SC. VI.4e]. Request records of test results.**	Please see manufacturer's guarantees in **Attachment 6**.
13. Please demonstrate permittee kept records of sulfur content, in percent by weight, of the fuel oil; and Permittee kept a separate record of the sulfur content for each shipment of the fuel oil received; all records were kept on file for a period of at least five years and available at the Department upon request **[SC.VI.5]. Request records for the last 12 months.**	Condition met. Please see **Attachment 2** for fuel vendor's receipts indicating deliveries of dyed ultra low sulfur fuel oil. Fuel is transportation grade diesel fuel which has specifications that are well below the maximum sulfur content limit. Current transportation grade diesel is 15 ppm sulfur.
14. Please demonstrate permittee promptly reported deviations pursuant to general Conditions 21 and 22 part A **[SC.VII.1]. Request records of oil characterization for the last 12 months.**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.

15. Please demonstrate permittee performed Semiannual reporting of monitoring and deviations pursuant to general Condition 23 of Part; the report was postmarked or received by 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 **[SC. VII.2]. Request supporting records.**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
16. Please demonstrate permittee performed Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A; the report was postmarked or received by appropriate AQD District office by March 15 for the previous calendar year **[SC. VII.3]. Request supporting records**.	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
17. Please demonstrate within 30 days of after completion of the installation, construction, reconstruction, relocation, or modification authorized by the Permit to Install, the permittee or the authorized agent pursuant to Rule 204 notified the AQD District Supervisor, in writing of the composition of the activity, and the completion of installation, construction, reconstruction, relocation, or modification occurred not later than commencement of trial operation of EUENGINE12a **[SC. VII.4]. Request supporting records.**	Condition met. This unit folded into ROP from previous permit.
18. Please demonstrate exhaust gases from stack SVENGINE12a were discharged unobstructed vertically upwards to the ambient air unless otherwise noted **[SC. VIII.1]. Request visual inspection**.	Condition met. You are welcome to inspect.
19. Please demonstrate permittee complied with all applicable requirements of New Source Performance Standards for Diesel Fired reciprocating Internal Combustion Engines by compliance date(s) specified in the standards **[SC. IX]. Request supporting records.**	Condition met. Unit has non resettable hour meter, operates as emergency generator, and operated and maintained in accordance with manufacturer's specification. See MDEQ summary sheet in **Attachment 8**.

EUTOSTER1 (ETO sterilizer) Questions

Question	Response
20. Please demonstrate the emission of Ethylene Oxide NOx in the EUTOSTER1 did not exceed 0.006 lb./hr. based on hourly averaging **[SC. I.1]. Request records for the last 12 months.**	In compliance: The sterilizer uses 0.22 lbs of Ethylene Oxide in a cycle. An exhaust cycle last for 1.5 hrs. Therefore 0.22 lbs/1.5 hrs with a control efficiency of 99.9% = 0.00014 lbs/hr, well below the limit.
21. Please demonstrate the emission of Ethylene Oxide in the EUTOSTER1 did not exceed 0.0001 ton/month based on monthly combination of all sterilization process **[SC. I.2]. Request records for the last 12 months**	In compliance. The emission of Ethylene Oxide in the EUTOSTER1 did not exceed 0.0001 ton/month (the maximum for 1 year was 0.00000143 ton/mo.
22. Please demonstrate the emission of Ethylene Oxide in the EUTOSTER did not exceed 0.141 lb./month based on monthly combination of all sterilization processes **[SC. I.3]. Request records for the last 12 months.**	In compliance. The maximum EO emissions were 0.00286 lbs/mo (July 2013) for the last 12 months. See Attachment 10 for record keeping reports.
23. Please demonstrate the emission of HCFC in the EUTOSTER1 did not exceed 62.3 lbs./hr. based on monthly combination of all sterilization processes **[SC. I.4]. Request records for the last 12 months.**	Not Applicable – Sterilizer uses only 100% ETO
24. Please demonstrate the emission of HCFC in the EUEUTOSTER1 did not exceed 0.75 tons/hr. based on monthly combination of all sterilization processes **[SC. I.5]. Request records for the last 12 months.**	Not Applicable – Sterilizer uses only 100% ETO
25. Please demonstrate the use of Ethylene Oxide in the EUTOSTER1 did not exceed 6.5 lbs./day based on daily basis **[SC. II.1]. Request records for the last 12 months.**	Condition met. Records of last 12 months show daily max ETO use of 0.22 lbs/day.
26. Please demonstrate the use of Ethylene Oxide in the EUTOSTER1 did not exceed 141.1lbs./month bases on monthly combination of all sterilization processes **[SC. II.2]. Request records for the last 12 months.**	Condition met. Records of last 12 months show daily max ETO use of 2.86 lbs/mo.
27. Please demonstrate the use of HCFC in the EUTOSTER1 did not exceed 69.23 lb. /day based on daily basis [SC. II.3]. **Request records for last 12 months.**	Not Applicable – Sterilizer uses only 100% ETO

Question	Response
28. Please demonstrate the use of HCFC in the EUTOSTER1 did not exceed 1,500 lb. /month based on monthly combination of all sterilization processes [SC. II.4]. **Request records for the last 12 months**	Not Applicable – Sterilizer uses only 100% ETO
29. Please demonstrate the permittee did not operate the EUTOSTER1 or AERATOR(s) unless the catalytic oxidizer was installed, maintained, and operated properly according to the manufacturer's specifications. Note that proper required a minimum of 99% reduction by weight of ethylene oxide emissions to the atmosphere, and a copy of the manufacturer's specifications for the control device should be maintained on file **[SC. III.1]. Request supporting records.**	Yes, the ETO catalytic Oxidizer was installed and operational when the ETO sterilizer was in use – In fact, the ETO sterilizer will not operate unless the catalytic oxidizer is functional. The removal efficiency of the oxidizer is 99.9% based on manufacturer's specifications
30. Please demonstrate the permittee did not operate the sterilizer (s) and/or aerator unless a closed loop recirculating fluid vacuum pump, an air ejector system or other method of drawing a vacuum and evacuating the sterilizer chamber that prevented the discharge of any ethylene oxide to a waste water stream, was installed and operating properly **[SC. III.2]. Request supporting records.**	Sterilizer is an AMSCO Eagle 3017 Sterilizer: No wastewater discharge from unit
31. Please demonstrate permittee used a sterilant gas, which consisted of 100% ethylene oxide or an ethylene oxide/inert gas mixture. Note that acceptable inert gases include 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124, carbon dioxide, or and HCFC blend, which included only toxic air contaminants for which the initial threshold screening level (ITSL) was equal to or greater than 5000 micrograms per cubic meter on a 24 hr average **[SC. III.3]. Request supporting records.**	The hospital uses canisters marked with "100% ETO"
32. Please demonstrate the permittee operated Ethylene oxide sterilizers with a capacity that did not exceed 30 cu. ft. associated aeration equipment and a pollution control device **[SC. IV.1]. Request supporting records**.	Condition met - See ETO sterilizer specifications in **Attachment 9** which show a capacity of 4.8 cubic feet.
33. Please demonstrate the permittee operated catalytic oxidizer that was guarantee by the manufacturer to	Condition met – **ETO Disposer:** A single AMSCO 50 CFM Disposer serves

Question	Response
reduce ethylene oxide emissions by at least 99.9% **[SC. IV.2]. Request supporting records.**	EUETOSTER1 -See catalytic oxidizer specifications in **Attachment 11**
34. Please demonstrate permittee tested ethylene oxide emissions and control device efficiency within 60 days as requested by AQD (if applicable), and tests results were submitted to the Division within 60 days following the last date of the test **[SC. V.1]. Request supporting records**.	Not Applicable -- No testing request made
35. Please demonstrate permittee maintained daily and monthly sterilant usage data including the amount in pounds per cycle of ethylene oxide and any inert gas used **[SC. VI.1]. Request records for the last 12 months.**	Yes, daily and monthly tracking is shown on the forms in **Attachment 10.**
36. Please demonstrate permittee calculated monthly emissions of ethylene oxide in pounds as outlined in Appendix 7 **[SC. VI.2]. Request data for the last 12 months.**	Condition met: See daily and monthly tracking of these parameters shown on the forms in **Attachment 10**.
37. Please demonstrate permittee monitored an operating parameter of the control device, based on either manufacturer/s specifications or performance test, which assured at least 99.9% reduction of ethylene oxide emissions and a copy, was maintained on file **[SC. VI.3]. Request records for the last 12 months.**	Yes, the ETO catalytic Oxidizer was installed and operational when the ETO sterilizer was in use – In fact, the ETO sterilizer will not operate unless the catalytic oxidizer is functional. The removal efficiency of the oxidizer is 99.9% based on manufacturer's specifications. In addition, maintenance documentation is found in **Attachment 12.**
38. *Additionally, please demonstrate, for processes controlled by a catalytic oxidizer, permittee continuously monitored the oxidation temperature at the outlet to the catalyst bed **[SC. VIa]. Request records for the last 12 months.**	Note: The ETO General Permit from MDEQ states: February 12, 2004 – changed the format of the special conditions and removed the temperature recording requirement for catalytic oxidizers. Most catalytic oxidizers monitor the catalyst bed temperature and prevent operation or further introduction of ETO if the operating temperature is too high or low.
39. Please demonstrate permittee recorded date, duration, and description of any malfunction of the equipment of the control equipment, any maintenance performed, any replacement of catalyst or scrubber liquor, or any testing results **[SC. VI.4]. Request records for the last 12 months.**	Condition met. ETO System Maintenance documentation is found in Attachment 12.

Question	Response
40. Please demonstrate permittee recorded the date and description of any malfunction or new installation of a sterilizer, aerator or control device **[SC. VI.5]. Request records for the last 12 months.**	Condition met. ETO System Maintenance documentation is found in **Attachment 12**. There has been no new installation of a an ETO sterilizer, aerator or control device
41. Please demonstrate the permittee kept, in a satisfactory manner, operating records on file and made available to the AQD Supervisor upon request **[SC. VI.6]. Request records for the last 12 months.**	Condition met. ETO System operating records are found in **Attachment 10**, and Maintenance documentation is found in **Attachment 12.**
42. Please demonstrate permittee promptly reported deviations pursuant to general Conditions 21 and 22 of part A **[SC. VII.1]. Request supporting records.**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
43. Please demonstrate permittee reported Semiannual monitoring and deviations pursuant to general Condition 23 of Part A, and report should have been postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 **[SC. VII.2] Request supporting records.**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
44. Please demonstrate permittee reported Annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and the report should have been postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year **[SC. VII.3]. Request supporting records.**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
45. Please demonstrate the exhaust stack gases from stack SVSTACK listed in the ROP was discharged unobstructed vertically upwards to the ambient air unless otherwise noted **[SC. VIII.1]. Request visual inspection.**	Condition met. You are welcome to inspect.

ITEMS RELATED TO EUPAVGEN8

Question	HFH Response
46. Please demonstrate the maximum amount of SO2 emission from EUWPAVGEN8 did not exceed 0.33 lb. / MMBTU heat input based on instantaneous assessment **[SC. I.1]. Request records for last 12 months.**	This should be met by HFHS using ultra low sulfur fuel.
47. Please demonstrate the permittee burned distillate oil with a maximum sulfur	Condition met. Please see **Attachment 2** for fuel vendor's receipts indicating deliveries of dyed ultra low sulfur fuel oil. Fuel is transportation grade diesel fuel which has specifications that are well below the maximum sulfur content limit. Current transportation grade diesel is 15 ppm sulfur.
48. Please demonstrate content of sulfur in the fuel oil used in EUWPAVGEN8 did not exceed 0.30% by weight **[SC.II 1]. Request supporting records.**	Condition met. Please see **Attachment 2** for fuel vendor's receipts indicating deliveries of dyed ultra low sulfur fuel oil. Fuel is transportation grade diesel fuel which has specifications that are well below the maximum sulfur content limit. Current transportation grade diesel is 15 ppm sulfur.
49. Please demonstrate permittee did not use more than 58,500 gallons of distillate oil per 12-month rolling time period as determined at the end of each calendar month, and a written record of the fuel usage was kept on file for a period of at least five years to be made available to the AQD upon request **[SC. II.2]. Request records for the last 12 months.**	Condition met. The unit used 4,410 gallons in the last 12 months (Aug 2012 through July 2013).
50. Please demonstrate permittee did not operate EUWPAVGEN8 for more than 500 hours per 12 month rolling time period as determined at the end of each calendar month, and a written log of hours of operation were kept on file for a period of at least five years to be made available to the AQD upon request **[SC. III.1]. Request records for the past 12 months.**	Condition met. The unit operated 42 hours for testing only in the last 12 months (Aug 2012 through July 2013). Records are found in **Attachment 4.**
51. Please demonstrate permittee operated the emergency generator only at such times when all or portion of the normal electric power was interrupted or during periods of maintenance checks and operator training **[SC. III.2]. Request supporting records.**	Condition met. The unit operated 42 hours for testing only in the last 12 months (Aug 2012 through July 2013). Records are found in Attachment 4.

Question	HFH Response
52. Please demonstrate permittee maintained monthly records of the sulfur content of distillate oil on file **[SC. VI.1]. Request supporting records.**	Condition met. Please see **Attachment 2** for fuel vendor's receipts indicating deliveries of dyed ultra low sulfur fuel oil. Fuel is transportation grade diesel fuel which has specifications that are well below the maximum sulfur content limit. Current transportation grade diesel is 15 ppm sulfur.
53. Please demonstrate permittee promptly reported deviations pursuant to General Conditions 21 and 22 of Part A **[SC. VII.1]. Request records for the last 12 months.**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
54. Please demonstrate permittee reported Semiannual monitoring and deviations pursuant to Condition 23 of Part A, the report postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 **[SC. VII.2] Request records for the last 12 months.**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
55. Please demonstrate permittee reported annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and report postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year **[SC. VII.3]. Request records for the last 12 months**.	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
56. Please demonstrate the exhaust gases from SVSTACK in EUWPAVGEN8 were discharged unobstructed vertically upwards to the ambient air unless otherwise noted **[SC. VIII.1]. Request visual inspection**.	Condition met. You are welcome to inspect

Questions related to EUBUNITGEN

Question	HFH Response
57. Please demonstrate the maximum emissions of NOx in EUBUNITGEN was 13.8 lb. /hr. based on hourly emissions **{SC. I.1]. Request records for the last 12 months.**	Please see Manufacturer's specification sheet in **Attachment 15**
58. Please demonstrate the maximum emissions of NOx in EUBUNITGEN was 3.5 tpy based on annually emissions **{SC. I.2]. Request records for the last 12 months.**	Condition met. Emissions of NOx were 0.258 tons for the last 12 months (August 2012 through July 2013) as shown on tracking forms in Attachment 4.

Question	HFH Response
59. Please demonstrate the maximum emissions of SO2 in EUBUNITGEN were 1.0 lb. /hr. based on hourly emissions **{SC. I.3]. Request records for the last 12 months.**	Please see Manufacturer's specification sheet in **Attachment 15**
60. Please demonstrate the maximum emissions of SO2 in EUBUNITGEN were 0.25 lb. /hr. based on annually emissions **{SC. I.4]. Request records for the last 12 months.**	Please see Manufacturer's specification sheet in **Attachment 15**
61. Please demonstrate the permitttee met the specifications and requirements of 40 CFR 80.510(b) for all current diesel fuels **[SC. II.1]. Request supporting records.**	Condition met. Please see **Attachment 2** for fuel vendor's receipts indicating deliveries of dyed ultra low sulfur fuel oil. Fuel is transportation grade diesel fuel which has specifications that are well below the maximum sulfur content limit. Current transportation grade diesel is 15 ppm sulfur.
62. Please demonstrate the permitttee only burned diesel fuel with a maximum sulfur content of 15 ppm in EUBUNITGEN **[SC. II.2]. Request supporting records.**	Condition met. Please see **Attachment 2** for fuel vendor's receipts indicating deliveries of dyed ultra low sulfur fuel oil. Fuel is transportation grade diesel fuel which has specifications that are well below the maximum sulfur content limit. Current transportation grade diesel is 15 ppm sulfur.
63. Please demonstrate the permitttee did not generate electricity for more than 500 hours per 12-month rolling time period, and every month's hours of electrical generation was kept on file for a period of five years and available to the AQD upon request **[SC. III.1]. Request records for the last 12 months.**	Condition met. This unit operated for 40 hours for testing only in the last 12 month period (from August 2012 through July 2013). Records are shown in **Attachment 4.**
64. Please demonstrate the permitttee maintained records of sulfur content on file for every shipment **[SC. VI.1]. Request records for the last 12 months.** **65.** Please demonstrate permittee promptly reported deviations pursuant to General Conditions 21 and 22 of Part A **[SC. VII.1]. Request records for the last 12 months.**	Condition met. Please see Attachment 2 for fuel vendor's receipts indicating deliveries of dyed ultra low sulfur fuel oil. Fuel is transportation grade diesel fuel which has specifications that are well below the maximum sulfur content limit. Current transportation grade diesel is 15 ppm sulfur. ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
66. Please demonstrate permittee reported Semiannual monitoring and deviations pursuant to Condition 23 of Part A, the report postmarked or received by appropriate AQD District Office by March	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.

Question	HFH Response
15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 **[SC. VII.2] Request records for the last 12 months.**	
67. Please demonstrate permittee reported annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and report postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year [**SC. VII.3**]. **Request records for the last 12 months**	ROP Certification and Deviation Reports are found in Attachment 7, along with the certified mail receipts in compliance with the deadlines for submittal.
68. Please demonstrate the exhaust gases from SVSTACK in EUBUNITGEN were discharged unobstructed vertically upwards to the ambient air unless otherwise noted **[SC. VIII.1]. Request visual inspection.**	Condition met. You are welcome to inspect.

Questions related to EUCLVBOILER

Question	Response
69. Please demonstrate the maximum emissions of NOx in EUCLVBOILER was 7.15 tpy based on 12-month rolling time period as determined at the end of each calendar year **[SC. I.1]. Request records for the last 12 months.**	Condition met. Emissions of NOx were 0.98 tons for the last 12 month period (August 2012 through July 2013). Recordkeeping forms are found in **Attachment 4**.
70. Please demonstrate the maximum use of Natural Gas usage in EUCLVBOILER was 143 MMCF/yr. based on 12-month rolling time period as determined at the end of each calendar year **[SC. II.1]. Request records for the last 12 months.**	Condition met. Natural gas usage was 19.7 MMCF for the last 12 month period (August 2012 through July 2013). Recordkeeping forms are found in **Attachment 4**.
71. Please demonstrate the permittee burned only natural gas in EUCLVBOILER **[Sc. III.1]. Request supporting records.**	Condition met. This unit can only burn natural gas. It is not capable for burning any other fuel.
72. Please demonstrate permittee kept monthly natural gas usage records in a format acceptable to the AQD District Supervisor, indicating the amount of natural gas used, in cubic feet, on a calendar month basis and a 12-month rolling time period basis, and records indicated the total amount of natural gas used in EUCLVBOILER **[SC. VI.1]. Request records for the last 12 months.**	Condition met. .Natural gas usage is recorded monthly (August 2012 through July 2013). Recordkeeping forms are found in **Attachment 4**.

Question	Response
73. Please demonstrate permittee kept records of emissions and operating information for EUCLVBOILER to comply with the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and Dc, and all source emissions data and operating information were kept for the purpose of compliance demonstration **[SC. VI.2]. Request records for the last 12 months.**	Records of emissions and operating information is found in the recordkeeping forms in **Attachment 4.**
74. Please demonstrate permittee promptly reported deviations pursuant to General Conditions 21 and 22 of Part A **[SC. VII.1]. Request records for the last 12 months.**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
75. Please demonstrate permittee reported Semiannual monitoring and deviations pursuant to Condition 23 of Part A, the report postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 **[SC. VII.2] Request records for the last 12 months**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
76. Please demonstrate permittee reported annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and report postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year **[SC. VII.3]. Request records for the last 12 months.**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal. Note: Notification to EPA and MDEQ of the removal of this unit is found in Appendix 19, along with certified mail receipts.

Questions related to FGPEAKSHAVERS

Question	Response
77. Please demonstrate the maximum emissions of NOx in FGPEAKSVAVERS did not exceed 13.5 tpy based on 12-month rolling time period as determined at the end of each calendar year **[SC. I.1]. Request records for the last 12 months.**	Condition met: NOx emissions for the last 12 months were 0.11 tons (from August 2012 through July 2013 Note: These emission units did not operate after November 2012). See recordkeeping forms in **Attachment 4.**

78. Please demonstrate the sulfur content of fuel oil used in FGPEAKSHAVERS did not exceed 0.05 percent by weight based on instantaneous assessment. **[SC. II.1]. Request supporting records covering the last 12 months.**	Condition met. Please see **Attachment 2** for fuel vendor's receipts indicating deliveries of dyed ultra low sulfur fuel oil. Fuel is transportation grade diesel fuel which has specifications that are well below the maximum sulfur content limit. Current transportation grade diesel is 15 ppm sulfur.
79. Please demonstrate permittee did not operate engines included in FGPEAKSHAVERS for more than a combined total of 1,500 hours per 12-month rolling time period as determined at the end of each calendar month **[SC. III.1]. Request records covering the last 12 months.**	Condition met: These units operated for 11 hours during the last 12 months were 0.11 tons (from August 2012 through July 2013 Note: These emission units did not operate after November 2012). See recordkeeping forms in **Attachment 4.**
80. Please demonstrate permittee analyzed the following once during any calendar year where the fuel oil usage exceeded 5000 gallons: **(a)** Sulfur content of fuel oil **[SC. V.1a]. Request records covering the last 12 month.** **(b)** Fuel oil heating value [SC. V.1b]. **Request records covering the last 12 months.**	Not applicable – These units had fuel oil usage of 363 gallons during the last 12 months (August 2012 through July 2013). These units were taken out of service in May, 2013.
81. Please demonstrate within 12 months of ROP issuance the permittee verified the NOx emission rates from one generator by testing at owner's expense in accordance with EPA Federal Reference Test Methods; and maintained plans to conduct second test before the end of permit term if the first test showed NOx emissions greater than 90% of the emission limit **[SC. V.2]. Request supporting records].**	These units were taken out of service in May, 2013 six months prior to the 12 months of the ROP issuance (ROP issued November 27, 2012)
82. Please demonstrate permittee monitored and recorded in a satisfactory manner the hours of operation for the FGPEAKSHAVERS on a monthly basis **[SC. VI.1]. Request records for the last 12 months].**	Condition met: These units operated for 11 hours during the last 12 months were 0.11 tons (from August 2012 through July 2013 Note: These emission units did not operate after November 2012). See recordkeeping forms in Attachment 4.
83. Please demonstrate that for each of the following fuel shipment permittee maintained monthly records: **(a)** Quantity of No. 2 fuel oil received in gallons **[SC. VI.2a]. Request supporting records covering the last 12 months.** **(b)** Quantity of No. 2 fuel oil individual boiler usage in gallons **[SC. VI.2b]. Request supporting records covering the last 12 months.**	Condition met. Please see **Attachment 2** for fuel vendor's receipts indicating deliveries of dyed ultra low sulfur fuel oil. Fuel is transportation grade diesel fuel which has specifications that are well below the maximum sulfur content limit. Current transportation grade diesel is 15 ppm sulfur.

(c) Fuel supplier certification records listing sulfur content, in weight percent, and heating value for all fuel shipments received **[SC. VI.2c]. Request supporting records covering the last 12 months.**	
84. Please demonstrate permittee promptly reported deviations pursuant to General Conditions 21 and 22 of Part A **[SC. VII.1]. Request records for the last 12 months.**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
85. Please demonstrate permittee reported Semiannual monitoring and deviations pursuant to Condition 23 of Part A, the report postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 **[SC. VII.2] Request records for the last 12 months.**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
86. Please demonstrate permittee reported annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and report postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year **[SC. VII.3]. Request records for the last 12 months**.	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal. Note: Notification to EPA and MDEQ of the termination of these units is found in **Appendix 19**, along with certified mail receipts.
87. Please demonstrate the exhaust gases from SVSTACK in EUWPAVGEN8 were discharged unobstructed vertically upwards to the ambient air unless otherwise noted **[SC. VIII.1]. Request visual inspection**.	Condition met. You are welcome to inspect.

Questions related to FGENGINES

Question	Response
88. Please demonstrate the maximum emissions of NOx in FGENGINES were 41.1tpy based on hourly emissions {**SC. I.1]. Request records for the last 12 months.**	Emissions of NOx in FGENGINES were 1.57 tpy for the last 12 months, well below the 41.1 tpy limit. Recordkeeping forms are found in **Attachment 4**.
89. Please demonstrate the permittee did not operate EUENGINE9, EUENGINE10, and EUENGINE11 for more than 300 hours each per 12-month rolling time period as determined at the end of each calendar month **[SC. III.1]. Request records for the last 12 months.**	Condition met. EUENGINE9 operated for 42 hrs EUENGINE10 operated for 41.2 hrs EUENGINE10 operated for 37.6 hrs for the last 12 months (August 2012 through July 2013). Recordkeeping forms are found in **Attachment 4.**
90. Please demonstrate permittee did not operate EUENGINE12a for more than 500 hours per 12 month rolling time period as	Condition met. Recordkeeping forms in Attachment 4 show this unit ran for 49.1 hours for the last 12 months from August

Question	Response
determined at the end of each calendar month **[SC. III.2]. Request records for the last 12 months.**	2012 through July 2013, well below the allowable hours.
91. Please demonstrate permittee did not operate EUENGINE 12b, EUENGINE14 for more than 500 hours each per 12-month rolling time period as determined at the end of each calendar month **[SC. III.3]. Request records for the last 12 months.**	These emergency generators are not yet installed
92. Please demonstrate permittee monitored in a satisfactory manner the hours of operation for FGENGINES on a monthly basis **[SCVI.1]. Request supporting records covering the last 12 months.**	Condition met. Recordkeeping forms are found in Attachment 4.
93. Please demonstrate permittee completed all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition **[SC. VI.2]. Request supporting records covering the last 12 months.**	Condition met. Recordkeeping forms are found in Attachment 4.
94. Please demonstrate permittee kept in a satisfactory manner, monthly and previous 12-month NOx emission calculation records for ENGINES as required by SC1.1, and permittee kept all records on file for a period of at least 5 years and make them available to the Department upon request. **[SC. VI.3]. Request supporting records covering the last 12 months**.	Condition met. Recordkeeping forms are found in Attachment 4.
95. Please demonstrate permittee kept, in a satisfactory manner, a written log of the monthly hours of operation of FENGINES, and made it available to Department of upon request **[SC. VI.4]. Request**	Condition met. Recordkeeping forms are found in Attachment 4.

Question	Response
supporting records covering the last 12 months.	
96. Please demonstrate permittee promptly reported deviations pursuant to General Conditions 21 and 22 of Part A **[SC. VII.1]. Request records for the last 12 months.**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
97. Please demonstrate permittee reported Semiannual monitoring and deviations pursuant to Condition 23 of Part A, the report postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 **[SC. VII.2] Request records for the last 12 months.**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
98. Please demonstrate permittee reported annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and report postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year **[SC. VII.3]. Request records for the last 12 months**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.

Questions related to FGENGINES 9-10-11

Question	Response
99. Please demonstrate the maximum fuel oil used contained maximum sulfur content of 0.05 percent by weight based on instantaneous assessment **[SC. I.1]. Request records for the last 12 months.**	Condition met. Please see Attachment 2 for fuel vendor's receipts indicating deliveries of dyed ultra low sulfur fuel oil. Fuel is transportation grade diesel fuel which has specifications that are well below the maximum sulfur content limit. Current transportation grade diesel is 15 ppm sulfur.
100. Please demonstrate permittee operated FGENGINES9-10-11 in accordance with the manufacturer's written instruction or by operating procedures developed by the permittee that are approved by the manufacturer **[SC. III.1]. Request supporting records covering the last 12 months.**	HFHS operates and maintains this unit by procedures that meet or exceed the manufacturer's instructions. **Attachment 3** shows the preventative maintenance procedures.
101. Please demonstrate permittee did not operate FGENGINES9-10-11 for more than 100 hours per 12-month rolling time period as determined at the end of each calendar month during maintenance and readiness testing, and not more than a	Condition met. EUENGINE9 operated for 42 hrs EUENGINE10 operated for 41.2 hrs EUENGINE10 operated for 37.6 hrs for the last 12 months (August 2012 through July 2013). Recordkeeping forms are found in

Question	Response
total of 300 hours of operation per rolling 12-month rolling time period as determined at the end of each calendar month. **[SC. III.2]. Request records for the last 12 months.**	**Attachment 4.**
102. Please demonstrate permittee operated each generator of FGENGINES9-10-11 in accordance with manufacturer's recommendations for safe and proper operation to minimize emissions during periods of start-up, shutdown and malfunction **[SC III.3]. Request supporting records covering the last 12 months.**	HFHS operates and maintains this unit by procedures that meet or exceed the manufacturer's instructions. **Attachment 3** shows the preventative maintenance procedures.
103. Please demonstrate the nameplate capacity from EUENGINE9 did not exceed 1600 Kw with heat input of 15 MMBtu/hr.hr [SC. III.4]. Request copy of equipment rating.	Note, we are waiting for receipt of manufacturer specification sheet and will provide as soon as available (add to **Attachment 16)**.
104. Please demonstrate the nameplate capacity from EUENGINE10 did not exceed 750 Kw with heat input of 7 MMBtu/hr.hr **[SC. III.5]. Request copy of equipment rating.**	Condition met. See Equipment specification sheet in **Attachment 17**.
105. Please demonstrate the nameplate capacity from EUENGINE11 did not exceed 1600 Kw with heat input of 900 MMBtu/hr.hr **[SC. III.6]. Request copy of equipment rating.**	Condition met. See Equipment specification sheet in **Attachment 18**.
106. Please demonstrate permittee equipped each generator of FGENGINES9-10-11 with a non-resettable hour meter to track the number of operating hours **[SC. VI.1]. Request supporting records.**	Condition met. These units were installed with non-resettable meters.
107. Please demonstrate permittee promptly reported deviations pursuant to General Conditions 21 and 22 of Part A **[SC. VII.1]. Request records for the last 12 months.**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
108. Please demonstrate permittee reported Semiannual monitoring and deviations pursuant to Condition 23 of Part A, the report postmarked or received by	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.

Question	Response
appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 **[SC. VII.2] Request records for the last 12 months.**	
109. Please demonstrate permittee reported annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and report postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year **[SC. VII.3]. Request records for the last 12 months**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
110. Please demonstrate permittee notified the AQD District Supervisor in writing of completion of the installation, construction, reconstruction, relocation, or modification authorized by this permit within 30 days after completion **[SC. VII.4]. Request supporting response.**	Condition met. These units were part of an earlier PTI.
111. Please demonstrate the exhaust gases from SVSTACK in FGENGINES were discharged unobstructed vertically upwards to the ambient air unless otherwise noted **[SC. VIII.1]. Request visual inspection**.	Condition met. You are welcome to inspect.

FGENGINES12b & 14
(NOTE: These Emergency Generator Units are not yet installed, but the questions are listed as place holders for future years if this template is used again

Question	Response
112. Please demonstrate the maximum emissions of NMHC +NOx in FGENGINES12b & 14 did not exceed 6.4 g/Kw-hr.hr based on emissions test method **[SC. I.1]. Request records for the last 12 months.**	**These units are not yet installed**
113. Please demonstrate the maximum emissions of CO in FGENGINES12b & 14 did not exceed 3.5 g/Kw-hr.hr based on emissions test method **[SC. I.2]. Request records for the last 12 months.**	**These units are not yet installed**
114. Please demonstrate the maximum emissions of PM in FGENGINES12b & 14 did not exceed 0.2 g/Kw-hr.hr based on emissions test method **[SC. I.3]. Request records for the last 12 months.**	**These units are not yet installed**
115. Please demonstrate permittee met the	**These units are not yet installed**

Question	Response
specifications and requirements of 40 CFR 80.510 for the entire current diesel fuels use **[SC. II.1]. Request supporting records**	
116. Please demonstrate permittee burned only diesel fuel with a maximum sulfur content of 15 ppm in FENGINES12b & 14 **[SC. II.2]. Request records for the last 12 months.**	**These units are not yet installed**
117. Please demonstrate permittee operated EUENGINES12b & 14 in accordance with its manufacturer's written instructions or by operating procedures developed by the permittee that are approved by the manufacturer **[SC. III.1]. Request supporting records.**	**These units are not yet installed**
118. Please demonstrate permittee did not change or revise the operating instructions, procedures or settings for EUENGINES12b & 14 unless permitted by the manufacturer in writing **[SC. III.2]. Request supporting records.**	**These units are not yet installed**
119. Please demonstrate permittee did not operate FGENGINES12b & 14 for more than 100 hours per engine per 12-month rolling time period as determined at the end of each calendar month during maintenance checks and readiness testing and not more than a total of 500 hours of operation per rolling time period as determined at the end of each calendar month **[SC. III.3]. Request records for the last 12 months.**	**These units are not yet installed**
120. Please demonstrate permittee operated FGENGINES12b & 14 in accordance with manufacturer's recommendations for safe and proper operation to minimize emissions during periods of start-up, shutdown and malfunction **[SC. III.4]. Request supporting records.**	**These units are not yet installed**
121. Please demonstrate the nameplate capacity from EUENGINE12b did not exceed 2000 Kw with heat input of 20 MMBtu/hr.hr **[SC. III.5]. Request copy of equipment rating.**	**These units are not yet installed**
122. Please demonstrate the nameplate capacity from EUENGINE14 did not exceed 2000 Kw with heat input of 20 MMBtu/hr.hr **[SC. III.6]. Request copy of equipment rating.**	**These units are not yet installed**
123. Please demonstrate permittee equipped each generator of FGENGINES12b & 14 with a non-resettable hour meter to track the number of operating hours **[SC. VI.1]. Request supporting records.**	**These units are not yet installed**

Question	Response
124. Please demonstrate if FGENGINES12b & 14 contained a diesel particulate filter to comply with SC. 1.3 the filter was installed with a backpressure monitor that notified the owner/operator when the high backpressure limit of the engine was approached **[SC. VI.2]. Request supporting records covering the last 12 months.**	**These units are not yet installed**
125. Please demonstrate permittee monitored the hours of operation of EUENGINE12b and 14 on a monthly basis in a manner that was acceptable to the District Supervisor, Air Quality Division **[SC. VI.3]. Request records covering the last 12 months.**	**These units are not yet installed**
126. Please demonstrate permittee kept in a satisfactory manner, the following records on file and made available to the Department upon request: **(a)** Engine certification according to 40 CFR Part 89 or Part 94, as applicable, for the same engine model year and maximum engine power; and the engine must have been installed and configured according to the manufacturer's specifications **[SC. VI.4a]. Request supporting records.** **(b)** Records of performance test results for each pollutant for a test conducted on a similar engine; and the test must have been conducted correctly and using the same methods specified in 40 CFR Part 60, Subpart IIII **[SC. VI.4b]. Request supporting records.** **(c)** Records of engine manufacturer data indicating compliance with these standards **[SC. VI.4c]. Request supporting records.** **(d)** Records of control device vendor data indicating compliance with these standards as applicable **[SC. VI.4d]. Request supporting records.** **(e)** Conduct an initial test to demonstrate compliance with the emission standards according to the requirements of 60.4212, as applicable **[SC. VI.4e]. Request supporting records.**	**These units are not yet installed**
127. Please demonstrate permittee kept records of the sulfur content in percent by weight of the fuel oil; and permittee kept a separate record of the sulfur content for each shipment of the fuel oil received; and all records were kept on file for a period of at least five years to be made available to the Department upon request **[SC. VI.5]. Request supporting records.**	**These units are not yet installed**
128. Please demonstrate permittee promptly reported deviations pursuant to General Conditions 21 and 22 of Part A **[SC. VII.1]. Request records for the last 12 months.**	**These units are not yet installed**

Question	Response
129. Please demonstrate permittee reported Semiannual monitoring and deviations pursuant to Condition 23 of Part A, the report postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 **[SC. VII.2] Request records for the last 12 months.**	**These units are not yet installed**
130. Please demonstrate permittee reported annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and report postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year **[SC. VII.3]. Request records for the last 12 months**	**These units are not yet installed**
131. Please demonstrate permittee notified the AQD District Supervisor in writing of completion of the installation, construction, reconstruction, relocation, or modification authorized by this permit within 30 days after completion **[SC. VII.4]. Request supporting response.**	**These units are not yet installed**
132. Please demonstrate the exhaust gases from SVSTACK in FGENGINES were discharged unobstructed vertically upwards to the ambient air unless otherwise noted **[SC. VIII.1]. Request visual inspection**.	**These units are not yet installed**

FGBOILERS

Question	Response
133. Please demonstrate the maximum NOx emissions in FGBOILERS did not exceed 35.4 tpy based on emissions 12-month rolling time period as determined at the end of each calendar month {**SC. I.1]. Request records for the last 12 months.**	Condition met. Monthly emissions of FGBoilers are calculated and shown on the "Emissions" page of the Emission Tracking form (**See Attachment 4**). As long as all monthly emissions are below 2.9 tons per month, annual rolling sum emissions are below the rolling sum of 35.4 tons per year allowed by condition for FGBoilers. Each of the month's reports show that the rolling sum emissions are "ok" under compliance status indicating that rolling sum emissions are in compliance. For the 12-month period ending July 2013, calculated FGBoiler NOx emissions are 5.49 tons. If FGBoiler NOx emissions start to approach the maximum allowed, Henry Ford Hospital will maintain 12-month rolling sum emissions to ensure that usage from the boilers doesn't exceed the emission limit.
134. Please demonstrate the fuel oil burned in FGBOILERS had maximum sulfur content	Condition met. Please see **Attachment 2** for fuel vendor receipts indicating deliveries of

Question	Response
of that did not exceed 0.03 percent by weight based on instantaneous assessment **{SC. II.1]. Request records for the last 12 months.**	dyed ultra low sulfur fuel oil. Fuel is transportation grade diesel fuel which has specifications well below the maximum sulfur content limit. Current transportation grade diesel is 15 ppm sulfur max.
135. Please demonstrate the amount of fuel oil burned in FGBOILERS did not exceed 1,234,000 gallons/yr. based on 12-month rolling time period **{SC. II.2]. Request records for the last 12 months.**	Condition met. For the 12-month period ending July 2013, calculated FGBOILERS fuel oil burned was 1 gallon.
136. Please demonstrate the amount of natural Gas burned in FGBOILERS did not exceed 1,515,480,000 cut/yr. based on 12-month rolling time period **[SC. II.3]. Request records for last 12 months.**	Condition met. For the 12-month period ending July 2013, calculated FGBOILERS natural gas burned was 283,000,000 cubic feet.
137. Please demonstrate permittee monitored in a satisfactory manner the natural gas and fuel oil usage from FGBOILERS on a monthly basis **[SC. VI.1]. Request records for the last 12 months.**	Condition met. Monthly monitoring of fuel oil and natural gas use for FGBOILERS are recorded and shown on the Emission Tracking form (See **Attachment 4**).
138. Please demonstrate permittee kept, in a satisfactory manner the monthly and previous 12-month NOx emission calculation records for FGBOILERS, as required by 1.1; and permittee kept all records on file for at least a period of five years for making it available to the Department upon request **[SC. VI.2]. Request records covering last 12 mos.**	Condition met. Monthly monitoring NOx emissions for FGBOILERS are recorded and shown on the Emission Tracking form (See **Attachment 4**).
139. Please demonstrate permittee kept, in a satisfactory manner the monthly natural gas and fuel oil records for FGBOILERS for a period of at least five years for making it available to the Department upon request **[SC. VI.3]. Request records covering the last 12 months.**	Condition met. Monthly monitoring of fuel oil and natural gas use for FGBOILERS are recorded and shown on the Emission Tracking form (See **attachment 4**).
140. Please demonstrate the permittee kept, in a satisfactory manner, fuel oil Supply certification for each delivery of fuel. The certification included the name of the fuel oil supplier and a statement from the fuel oil supplier; and the fuel oil complied with the specifications under the definitions of distillate oil in 40 CFR 60.41c **[SC. 2.9]. Request records for last 12 months**.	Condition met. Please see **Attachment 2** for fuel vendor's receipts indicating deliveries of dyed ultra low sulfur fuel oil. Fuel is transportation grade diesel fuel which has specifications that are well below the maximum sulfur content limit. Current transportation grade diesel is 15 ppm sulfur max.
141. Please demonstrate permittee promptly reported deviations pursuant to General Conditions 21 and 22 of Part A **[SC. VII.1]. Request records for last 12 mos.**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.

Question	Response
142. Please demonstrate permittee reported Semiannual monitoring and deviations pursuant to Condition 23 of Part A, the report postmarked or received by appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January to June 30 **[SC. VII.2] Request records for the last 12 months.**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
143. Please demonstrate permittee reported annual certification of compliance pursuant to general Conditions 19 and 20 of Part A, and report postmarked or received by appropriate AQD District Office by March 15 for the previous calendar year **[SC. VII.3]. Request records for the last 12 months**	ROP Certification and Deviation Reports are found in **Attachment 7**, along with the certified mail receipts in compliance with the deadlines for submittal.
144. Please demonstrate permittee notified the AQD District Supervisor in writing of completion of the installation, construction, reconstruction, relocation, or modification authorized by this permit within 30 days after completion **[SC. VII.4]. Request supporting response.**	Information on these units has been relayed to MDEQ.
145. Please confirm the Stack height for SVBOILERS is 75.8 feet above ground level [SC. VIII.1]. **Request physical inspection.**	You are welcome to inspect as requested. Shop drawings show the stack to have a height above the foundation of 75 feet, 10 inches.

EUENGINE 12a

Power Generation

Exhaust Emission Data Sheet
2000DQKC
60 Hz Diesel Generator Set

Engine Information:

Model:	Cummins Inc. QSK60-G6 Nonroad 1	Bore:	6.25 in. (159 mm)
Type:	4 Cycle, 60°V, 16 Cylinder Diesel	Stroke:	7.48 in. (190 mm)
Aspiration:	Turbocharged and Low Temperature Aftercooled	Displacement:	3673 cu. in. (60.1 liters)
Compression Ratio:	14.5:1		
Emission Control Device:	Turbocharged and Low Temperature Aftercooled		

	1/4	1/2	3/4	Full	Full	
PERFORMANCE DATA	Standby	Standby	Standby	Standby	Prime	
BHP @ 1800 RPM (60 Hz)	731	1461	2192	2922	2647	
Fuel Consumption (gal/Hr)	41.0	71.0	102.8	136.6	121.5	
Exhaust Gas Flow (CFM)	6110	9130	12420	15150	13765	
Exhaust Gas Temperature (°F)	705	785	820	850	805	
EXHAUST EMISSION DATA						
HC (Total Unburned Hydrocarbons)	0.50	0.26	0.21	0.20	0.18	
NOx (Oxides of Nitrogen as NO2)	5.40	6.20	6.40	7.00	7.10	
CO (carbon Monoxide)	0.70	0.70	0.80	0.90	1.00	
PM (Particular Matter)	0.21	0.10	0.10	0.10	0.10	
SO2 (Sulfur Dioxide)	0.71	0.61	0.58	0.58	0.57	
Smoke (Bosch)	0.70	0.40	0.30	0.40	0.40	
					All Values are Grams/HP-Hour, Smoke is Bosch #	

TEST CONDITIONS

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load (±2%). Pressures, temperatures, and emission rates were stabilized.

Fuel Specification:	ASTM D975 No. 2-D diesel fuel with 0.03-0.05% sulfur content (by weight), and 40-48 cetane number.
Fuel Temperature:	99 ± 9 °F (at fuel pump inlet)
Intake Air Temperature:	77 ± 9 °F
Barometric Pressure:	29.6 ± 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb dry air
Reference Standard:	ISO 8178

The NOx, HC, CO and PM emission data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may results in elevated emission levels.

:OL JM COMPANIES, INC.
:CK ROAD
MICHIGAN 48174
(800) 875-FUEL

NOTICE TO CUSTOMER - READ BEFORE SIGNING

Legal title to any products or equipment included on this invoice is retained by the Company (Supplier) until the invoice is paid in full. The party in default shall be responsible for all legal costs and costs of collection deemed necessary by the Company.

.STAFF GARAGE* E10 READY
LAWRENCE JASKOWSKI
313-999-7691\313-916-1414

GREG G

Tran # 574379.00 Date 08/10/12

L To Number	Ship To Number	Customer PO #	BL #	Pay Type
TEFOR	TREFOR	00809012E		CHARGE

EDELIVER 1000 SD, SEE LARRY

HENRY FORD HOSPITAL
ATTN: CHRISTINE FULLER
L FORD PLACE
DETROIT MI 48202

SHIP TO
HENRY FORD HOSPITAL
STAFF GARAGE
2799 W GRAND BLVD
DETROIT MI 48202000

hip Via: REA PETROLEUM COS. Ship To Phone #: 313-916-1809

t No.	Description	Price	Ordered	To Ship	Shipped
TW	DYED ULTRA LOW SULFER DIES Dyed Diesel for Off Highway Use.Non-Taxable Use Only.Penalty for Taxable Use HC 3, NA1993 PG III		1,000.0	1,000.0	

Weight: 0 Tons 0 Lbs 0 Ozs

Greg		

SUBJECT TO CORRECTION OF CLERICAL ERRORS

CUSTOMER COPY

REA PETROLEUM COMPANIES, I...
8540 WICK ROAD
ROMULUS, MICHIGAN 48174
PHONE: (800) 875-FUEL

NOTICE TO CUSTOMER - READ BEFORE SIGNING

Legal title to any products or equipment included on this invoice is retained by the Company (Supplier) until the invoice is paid in full. The party in default shall be responsible for all legal costs and costs of collection deemed necessary by the Company.

STAFF GARAGE ...
LAWRENCE JASKU ...
313-799-7691\313-916-1...

Tran # 578401.00 Date 09/07/12

Bill To Number	Ship To Number	Customer PO #	BL #	Pay Type
IHEFOR	IHEFOR	0011293984		CHARGE

0700-1600 FRIDAY OR EARLY MON

BILL TO
HENRY FORD HOSPITAL
ATTN: CHRISTINE FULLER
1 FORD PLACE
DETROIT MI 48202

SHIP TO
HENRY FORD HOSPITAL
STAFF GARAGE
2799 W GRAND BLVD
DETROIT MI 48202000

Ship Via: REA PETROLEUM COS. Ship To Phone #: 313-916-1809

Product No.	Description	Price	Ordered	To Ship	Shipped
275D TN	DYED ULTRA LOW SULFER DIES. Dyed Diesel for Off Highway Use,Non-Taxable Use Only,Penalty for Taxable Use HC 3, NA1993 PG III		1,800.0	1,800.0	

Dyed (3d)

1597.5 (3d)

3 Generators

SALE # 11268 DATE 09/07/12 15:07:05
COUNT: START 0.0 END 1597.5
GROSS DELIVERY 1597.5 GALLONS
PRESET 0 DISTILLATE

Christopher Skell

Total Weight: 0 Tons 0 Lbs 0 Ozs

SUBJECT TO CORRECTION OF CLERICAL ERROR

DUPLICATE COPY

6 1/4 in E&R

DIESEL OIL DELIVERY 9/7/12 ~~4:20~~ 4:15 PM

CLINIC GENERATOR 647 GALLONS/FULL 4:30 PM

I.P.D. GENERATOR 681 GALLONS/FULL 4:50 PM

E.P. GENERATOR 269.5 GALLONS/50% FULL 5:15 PM

TOTAL 1597.5 GALLONS

9/8/12
6 1/4 in Eq R

ROLEUM COMPANIES, INC.
ICK ROAD
, MICHIGAN 48174
(800) 875-FUEL

NOTICE TO CUSTOMER - READ BEFORE SIGNING

Legal title to any products or equipment included on this invoice is retained by the Company (Supplier) until the invoice is paid in full. The party in default shall be responsible for all legal costs and costs of collection deemed necessary by the Company.

STAFF GARAGE EIC REQ:
LAWRENCE JASKOWSKI
313-999-7691\313-916-1414

Tran # 586964.00 Date 11/05/12

I To Number	Ship To Number	Customer PO #	BL #	Pay Type
HEFOR	1HEFOR	0011223311		CHARGE

700-1200 UST. PREM, SEE LARRY FIRST DYED

HENRY FORD HOSPITAL
ATTN: CHRISTINE FULLER
1 FORD PLACE
DETROIT MI 48202

SHIP TO
HENRY FORD HOSPITAL
STAFF GARAGE
2799 W GRAND BLVD
DETROIT MI 48202000

Ship Via: REX CARRIERS INC. Ship To Phone #: 313-916-1909

ct No.	Description	Price	Ordered	To Ship	Shipp
DS	#2ULS DYED PURE POWER PREM Dyed Diesel for Off Highway Use.Non-Taxable Use Only.Penalty for Taxable Use HC 5, NA1993 PG III		12,500.0	12,500.0	

Weight: 0 Tons 0 Lbs 0 Ozs

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OFFICE COPY

DANGEROUS GOODS DESCRIPTION

FUEL, COMBUSTIBLE LIQUID, NA1993,

RGO TANK
ESEL FUEL, COMBUSTIBLE LIQUID, NA1993,

B I L L O F L A D I N G 0129754
FOLIO NUMBER: 11003
CUSTOMER 0015134 ACCOUNT 5134004 TRANS ID:530

BP PRODUCTS NORTH AMERICA
RKA PETROLEUM (UNB)

CONSIGNEE DELIVER TO
RKA PETROLEUM (UNB)
MI TO MI (UNB)
BIRMINGHAM MI, MI -48012.00
SUPPLIER: BP PRODUCTS NORTH AMERICA
TERMS:

SEE REVERSE FOR EMERGENCY RESPONSE GUIDE AND OTHER INFORMATION

FOR PRODUCT EMERGENCY - Spill, Leak, Fire, Exposure, or Accident
Day or Night -Call: CHEMTREC 1800-424-9300 Account #: 3359

SHIPMENT ORIGIN: BUCKEYE RIVER ROUGE
205 Marion Avenue
River Rouge MI 48218

VEHICLE/UNIT NUMBER: 301

FREIGHT:

PO #:

LOAD START DATE: 11/03/12 TIME: 08:08

LOAD END DATE: 11/03/12 TIME: 08:42

FN PRODUCT QUANTITY/UNIT

PRODUCT	Octane Rating (R + M)/2	Gross Volume	Temp	Grav	Net Volume	Meter	Compartment
ULTRA LSD 2 DYED 15PPM	.00	370	42.9	32.8	373	Bay-06	1
ULTRA LSD 2 DYED 15PPM	.00	2500	47.0	33.4	2515	Bay-06	5
ULTRA LSD 2 DYED 15PPM	.00	279	45.0	32.8	281	Bay-06	1
ULTRA LSD 2 DYED 15PPM	.00	3552	47.0	33.4	3573	Bay-06	1
ULTRA LSD 2 DYED 15PPM	.00	1150	47.4	33.4	1157	Bay-06	2
ULTRA LSD 2 DYED 15PPM	.00	1750	48.4	33.4	1759	Bay-06	3
ULTRA LSD 2 DYED 15PPM	.00	2901	49.4	33.4	2915	Bay-06	4
TOTAL		12502 GAL GROSS			12573 GAL NET		

FINISHED PRODUCT SUMMARY	Gross	Net
ULTRA LSD 2 DYED 15PPM	12502	12573

Dyed diesel fuel. Non-taxable use only. Penalty for taxable use. NRLM Designated. 15 ppm sulfur (maximum
yed Ultra-Low Sulfur Diesel Fuel. Fo r use in all nonroad diesel engines. No
for use in highway vehicles or engines except for tax-exempt use in accordanc
e with section 4082 of the Internal Revenue Code. Dyed Diesel Fuel, nonta
xable use only, penalty for taxable use. Product is #2 Diesel Fuel.
EPA#456482381 90062532

0129754

T38MI3005

This is to certify that the above named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER: RKA PETROLEUM (UNB)

Carrier certifies that the container supplied for this shipment is a proper container for the transportation of the Products as above described and driver acknowledges Emergency Response Guide information received on reverse side of this document.

DRIVER/AGENT

REX CARRIERS, INC.
28340 WICK ROAD
ROMULUS, MI 48174

UNIFORM STRAIGHT BILL OF LADING
ORIGINAL—Not Negotiable—Domestic

90380

OTHER INFORMATION

DATE SPOTTED
DATE PICKED UP

DATE SHIPPED	TRACTOR	TRAILER	PPD	COL	SHIPPED B/L NO.		TERM NO.	BROKER NO.
6-10	57	301			0139754	5369764		

DATE BILLED

BILL TO: Henry Ford Hospital, 1 Ford Place, Detroit MI 48202

SHIPPER: NAME R&M/Packaging; ADDRESS; CITY Belle River; STATE MI

CONSIGNEE	ADDRESS	STATE	QUANTITY	UQUANTITY	C.O.D.	RECEIVED IN GOOD ORDER
Henry Ford Hospital	2799 W Grand Blvd	MI	12500	G		

BILL MINIMUM | BILL ACTUAL | SPECIAL INSTRUCTIONS:

GROSS WEIGHT | TARE WEIGHT | QUANTITY ORDERED | CONTRACT CODE | RATE TYPE / TARIFF CODE | PAY CODE | PUMP | COMP | SUR. CHG. APP. | WEIGH FEE | SPECIAL TANK

Carrier certifies that the trailer supplied for this shipment is a proper container for this commodity as described by the shipper.
CARRIER SIGNATURE

Product offered for transportation by shipper is compatible to MC Cargo Tank tendered for said shipment.
SHIPPER SIGNATURE

GALLONS	POUNDS	HM	DESCRIPTION OF LADING/OTHER CHARGES	COMM./CHG. CODE	BILLING QUANTITY	RATE	CHARGE
12500	?	X	Dyed Ultra low sulfur diesel NA 1993 PG III				
			ATT: Bay load				

IN THE EVENT OF EMERGENCY CALL 1-800-633-8253

LOAD SEMI | MARKER 1 | MARKER 2 | MARKER 3 | MARKER 4 | MARKER 5 | MARKER 6

AMOUNT DUE FOR THIS INVOICE

LOAD	STOP 1	STOP 2	EXPLAIN LOADING TIME	UNLOAD	STOP 1	STOP 2	EXPLAIN UNLOADING TIME
ARR.	3:00 AM PM	AM PM		ARR.	9:15 AM PM	AM PM	
LEAVE	3:15 AM PM	AM PM		LEAVE	3:30 AM PM	AM PM	
TIME				TIME			

PICKUP TRACTOR NO. | CONSIGNOR AGENT X

DELIVERY TRACTOR NO. | CONSIGNEE AGENT X

HIGHWAY ROUTINGS

DRIVER'S SIGNATURE

ODOMETER: Ending | Beginning | TOTAL

All charges are to be prepaid unless otherwise indicated. If this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement. The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
SHIPPER'S SIGNATURE

This is to certify that I have checked the documents pertaining to this shipment, verified the product and quantity tendered for delivery. The connections are correct and the receiving tank will hold the product. Driver is authorized to unload.
RECEIVER'S SIGNATURE

TOTAL MILES | TOTAL TRIP TIME | City | To | City | To

ROLEUM COMPANIES, INC.
ICK ROAD
, MICHIGAN 48174
(800) 875-FUEL

NOTICE TO CUSTOMER - READ BEFORE SIGNING

Legal title to any products or equipment included on this invoice is retained by the Company (Supplier) until the invoice is paid in full. The party in default shall be responsible for all legal costs and costs of collection deemed necessary by the Company.

STAFF GARAGE E1C READY
LAWRENCE JASKOWSKI
313-999-7691\313-916-1414

1

Tran # 588599.00 Date 11/19/12

ll To Number	Ship To Number	Customer PO #	BL #	Pay Type
HEFOR	IHEFOR	0011330220		CHARGE

~~0800-1200~~ MONDAY CALL LARRY

HENRY FORD HOSPITAL
ATTN: CHRISTINE FULLER
1 FORD PLACE
DETROIT MI 48202

SHIP TO
HENRY FORD HOSPITAL
STAFF GARAGE
2799 W GRAND BLVD
DETROIT MI 48202000

Ship Via: REX CARRIERS INC. Ship To Phone #: 313-916-1809

ct No.	Description	Price	Ordered	To Ship	Shipped
DS	#2ULS DYED PURE POWER PREM Dyed Diesel for Off Highway Use.Non-Taxable Use Only.Penalty for Taxable Use HC 3, NA1993 PG III		12,500.0	12,500.0	

Weight: 0 Tons 0 Lbs 0 Ozs

SUBJECT TO CORRECTION OF CLERICAL ERRORS

OFFICE COPY

REX CARRIERS, INC.
28340 WICK ROAD
ROMULUS, MI 48174

P.O:

UNIFORM STRAIGHT BILL OF LADING
ORIGINAL--Not Negotiable--Domestic

91109

OTHER INFORMATION

DATE SPOTTED

DATE PICKED UP

DATE SHIPPED	TRACTOR	TRAILER	PPD	COL	SHIPPED B/L NO.		TERM NO.	BROKER NO.
6-30-10	36	602			0105476	588599		

DATE BILLED

BILL TO: Henry Ford Hospital
1 Ford Place
Detroit MI 48202

SHIPPER: NAME RKA / Sunoco
ADDRESS
CITY Romulus STATE MI

CONSIGNEE	ADDRESS	STATE	QUANTITY	QUANTITY	C.O.D.	RECEIVED IN GOOD ORDER
Henry Ford Hospital	2799 W. Grand Blvd	MI	12499			

BILL MINIMUM | BILL ACTUAL | SPECIAL INSTRUCTIONS:

GROSS WEIGHT | TARE WEIGHT | QUANTITY ORDERED | RATE TYPE / TARIFF CODE | CONTRACT CODE | PAY CODE | PUMP | COMP | SUR. CHG. APP. | WEIGH FEE | SPECIAL TANK

Carrier certifies that the trailer supplied for this shipment is a propel container for this commodity as described by the shipper.
CARRIER SIGNATURE

Product offered for transportation by shipper is compatible to MC Cargo Tank tendered for said shipment.
SHIPPER SIGNATURE

GALLONS	POUNDS	HM	DESCRIPTION OF LADING/OTHER CHARGES	COMM./CHG. CODE	BILLING QUANTITY	RATE	CHARGE
12499		*	Diesel low sulfur diesel NA 1993 PG III				
			ATT: Pulled				
			ATT: PUMP OFF				

IN THE EVENT OF EMERGENCY CALL 1-800-633-8253

LOAD SEMI | MARKER 1 | MARKER 2 | MARKER 3 | MARKER 4 | MARKER 5 | MARKER 6

AMOUNT DUE FOR THIS INVOICE

LOAD	STOP 1	STOP 2	EXPLAIN LOADING TIME	UNLOAD	STOP 1	STOP 2	EXPLAIN UNLOADING TIME
ARR.	7:45 AM PM	AM PM		ARR.	7:45 AM PM	AM PM	
LEAVE	9:15 AM PM	AM PM		LEAVE	9:45 AM PM	AM PM	
TIME				TIME			

PICKUP TRACTOR NO.

CONSIGNOR AGENT
X

DELIVERY TRACTOR NO.

CONSIGNEE AGENT
X

HIGHWAY ROUTINGS

DRIVER'S SIGNATURE

ODOMETER
Ending:
Beginning:
TOTAL

All charges are to be prepaid unless otherwise indicated. If this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement. The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

SHIPPER'S SIGNATURE

This is to certify that I have checked the documents pertaining to this shipment, verified the product and quantity tendered for delivery. The connections are correct and the receiving tank will hold the product. Driver is authorized to unload.

RECEIVER'S SIGNATURE

City

Sunoco Logistics

For Product Emergency – Spill, Leak, Fire or Exposure, Call CHEMTREC 800-424-9300 Day or Night

See Reverse Side for Hazard Warnings, Initial Emergency Response Guide, and Other Information

Carrier has loaded and accepted the above-named materials and certifies that the container supplied for this shipment is a proper container for the transportation of this commodity under DOT regulations and driver acknowledges Emergency Response Guide Information received on reverse side of this document. We, the undersigned company, are in compliance with the requirements specified in 49CFR172, and Specifically the new requirements outlined in the Federal Register, Vol. 68, No. 57 dated Tuesday, March 25, 2003 regarding security and related employee training. We further understand that compliance with the Department of Transportation security regulations is mandatory for continued access to Sunoco Partners Marketing and Terminals L.P. properties.

This is to certify that the here-in named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the department of transportation.

Signature: _____ **Date** 11-23-13

...UN COMPANIES, INC.
...OAD
..., MICHIGAN 48174
(800) 875-FUEL

NOTICE TO CUSTOMER - READ BEFORE SIGNING

Legal title to any products or equipment included on this invoice is retained by the Company (Supplier) until the invoice is paid in full. The party in default shall be responsible for all legal costs and costs of collection deemed necessary by the Company.

[illegible]

Tran # 392996.00 Date 12/18/12

... To Number	Ship To Number	Customer PO #	BL #	Pay Type
HFFOR	UHFFOR	0011342652		CHARGE

700-3300 FUEL, ... EMERGENCY ROOM

HENRY FORD HOSPITAL
ATTN: CHRISTINE FULLER
1 FORD PLACE
DETROIT MI 48202

SHIP TO
HENRY FORD HOSPITAL
STAFF GARAGE
2799 W GRAND BLVD
DETROIT MI 48202000

Ship Via: ... Ship To Phone #: 313-...-1009

... No.	Description	Price	Ordered	To Ship	Shipped
	... [illegible] Dyed Diesel for Off Highway Use.Non-Taxable Use Only.Penalty for Taxable Use ...		1,000.0	1,000.0	

SALE 1162 DATE 12/18/12 09:00:53
COUNT: START 0.0 END 1000.3
GROSS DELIVERY 1000.3 GALLONS
1 DEISEL PARTIAL
MULTIPLE DELIVERIES

1000.3
(P4
530 TO EP Gar
Remained for UC UGT. 470.

SUBJECT TO CORRECTION OF CLERICAL ERRORS

DUPLICATE COPY

Henry Ford Hospital

SUPPORT SERVICES DEPARTMENT PROCEDURE

Annual Generator Maintenance

Document Owner: HFH Plant Operations

Updated: 05/13/2013
Past Revision Date: 05/09/2013

A. PROCEDURE NO.: M-1027

B. PROCEDURE NAME: Generator Maintenance

C. TESTING OR CALIBRATION EQUIPMENT REQUIRED; PERFORMING PROCEDURE:
See Manufacturer's Recommendations

D. TECHNICAL PUBLICATIONS AND/OR OPERATING INSTRUCTIONS CAN BE OBTAINED FROM:
Electrical Department

E. PROCEDURE:

The maintenance of all electrical emergency generation equipment will take place at the required intervals and will consist of maintenance recommended by the manufacturer and/or qualified service company as required by N.F.P.A. 99, and N.F.P.A. 110, 2005 Edition of Emergency & Standby Power Systems.

N.F.P.A. 110, 2005 Edition of Emergency and Standby Power Systems states the following:

8.1.1 – The routine maintenance and operational testing program shall be based on all of the following:

1) Manufacturer's recommendations
2) Instruction manuals
3) Minimum requirements of Chapter 8 Routine Maintenance and Operational Testing, from N.F.P.A. 110, 2005 Edition of Emergency & Standby Power Systems.
4) The authority having jurisdiction

Emergency Generator Maintenance

During any generator maintenance that will render the generator inoperable for any period of time all guidelines and regulations set forth for proper notification and coordination must be followed.

Ideal temperatures for closing OAI's for generator testing are between 40 deg F and 60 deg F.

Generator maintenance should include a full and complete operational and functional review of all generator critical components once a year including but not limited to:

- Battery & Battery Charger Systems
  - Check battery charger functions
  - Cable connections, termination cleanliness and security
  - Check electrolyte level, vent caps of all cells in the starting batteries
  - Battery conductance test
- Fuel Systems
  - Inspect main tank & day tank fuel level
  - Inspect day tank controls and pumps (test & operate day tank controls)
  - Inspect all fuel hoses, clamps, pipes, components and fittings for leaks or damage
  - Inspect governor linkage
  - Visually inspect rupture/containment basin
  - Water in fuel test – sub-base and day tank
  - Sample fuel oil and send out for lab testing
- Engine Cooling Systems
  - Inspect all hoses and clamps for leaks, coolant level and condition

Annual Generator Maintenance

Document Owner: HFH Plant Operations

Updated: 05/13/2013
Past Revision Date: 05/09/2013

  - Observe coolant heater operations
  - Utlize DCA test strip to record coolant properties
  - Inspect radiator surfaces, shrouds and barriers for obstruction
  - Visually inspect low temperature after cooler coolant
  - Sample coolant and send out for lab testing
- Engine & Lubrication Systems
  - Inspect lubrication system
  - Inspect crankcase ventilation system
  - Inspect spark ignited ignition system
- Intake/Exhaust Systems
  - Inspect air cleaner element and entire intake system
  - Inspect exhaust system and rain cap
  - Inspect louver operations
- Generator Controls & Power Connections
  - Visually inspect all engine mounted wiring, senders and devices
  - Visually inspect all control mounted components and wiring
  - Lap test all lights and indicators
  - Visually inspect breaker and power connections
  - Manually operator generator main breaker(s) open and close
- Generator Operations
  - Start and observe generator and equipment operations
  - Verify engine and generator safeties for proper operation
  - System test with or without load
- Lubrication Oil & Filtration – **SEE OIL CHANGE NOTES BELOW**
  - Sample engine oil and send out for lab testing
  - Change engine oil
  - Change primary lubrication and bypass filters
  - Change fuel filters

Oil/Fuel Lubricate or Filter Change Notes

To ensure a minimal amount of down time during oil change, oil filter change and fuel filter changes; the following criteria must be met prior to work being performed.

- Maximum duration of (1) HR down time for the generator for oil, oil filter and fuel filter changes
- Any scheduled maintenance in which the generator will be incapacitated must be done in the "shoulder" weather months in which outside air temperatures are not too hot or cold, adverse weather such as thunderstorms or snow storms are not forecasted and the interruption to the hospital is minimized.
- Properly notify and coordinate areas of the hospital that will be without emergency power (1) week prior to the scheduled maintenance
- Ensure all replacement components, lubricants and tools are on site and are the correct prior to the beginning of work
- If engine oil is being pumped out of the crankcase, ensure that the pump has its own power source independent of the hospitals electricity
- Replacement engine oil has been properly warmed up to a temperature in which viscosity becomes optimal for pumping back into the generator
- Replacement oil pumps and removal oil pumps are independent and are powered by an independent power source other than hospital electricity.

Henry Ford Hospital

SUPPORT SERVICES DEPARTMENT PROCEDURE

Annual Generator Maintenance

Document Owner: HFH Plant Operations

Updated: 05/13/2013
Past Revision Date: 05/09/2013

Scheduling

Generator Number	Location	1-Jan	1-Feb	1-Mar	1-Apr	1-May	1-Jun	1-Jul	1-Aug	1-Sep	1-Oct	1-Nov	1-Dec
4	Clinic				X								
5	E&R				X								
6	WCSB					X							
7	WCSB					X							
8	West Pavilion										X		
9	B-Unit										X		
10	EP Lab											X	
11	H-6/A-6/I-6											X	
12	Powerhouse										X		

Legend

X = Indicates generator month generator maintenance is to be scheduled

- Tentative schedule of dates for generator maintenance for the afore mentioned generators, within the designated months for maintenance must be submitted by the 15th of the previous month the maintenance is to take place
- Maximum duration of (1) HR down time for the generator oil, oil filter and fuel filter changes
- Properly notify and coordinate with areas of the hospital that will be without emergency power (1) week prior to scheduled maintenance

When service person determines the generator cannot be repaired within a reasonable amount of time make arrangements for a temporary rental generator to be brought in and hooked to emergency switchgear. In the meantime, a Code Triage- Internal Advisory is activated to alert staff, of the affected area, of the potential for no available emergency power if normal power is lost.

Henry Ford Hospital

Emission Tracking Input
Use Starting January 2009

hfhs envir tracker aug 2012

Input data

Month **Aug-12**

UST Oil tank deliveries	gallons
Ultra low sulfur Diesel Fuel	1,020
Heating Oil	0

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
	WCSB Boiler 1	33.8		0		0
	WCSB Boiler 2	33.8		0		0
Boiler1	Cleaver Brooks boiler	16.3		0		
FGBoilers	Nebraska 1-3	86.4 ea		342,813		1

MDEQ ID	Engine ID	Size, kw	hour meter reading	hours used	hours used, readiness checks	Fuel delivered, y/n
Engine1	Peak Shaver 1	500	17,543	1		n
Engine2	Peak Shaver 2	500	17,179	1		n
Engine3	Peak Shaver 3	500	13,295.4	1.1		n
Engine10	Clinic Outside, 4	750	2,198.4	4.8	4.8	n
	E & R Outside, 5	150	9,780.1	4.5		n
	West Clinic, 6	620	1,656	5		n
	West Clinic, 7	620	1,665	6		n
355-98	W Pavilion, 8	1,500	825	5		n
307-99	B-Unit, 9	300	752	4		n
Engine9	EP Cath Lab Outside, 10	1,600	6,387	5	5	n
Engine11	IPD outside, 11	900	4,535.0	5	5	n
Engine12	Boiler plant, 12	2,000	1438 / 220.3	3.3	3.3	1020

Describe any malfunctions or upsets

Boiler Sheet ADDED

ETO Sterilizers	Runs/month	Daily records available, y/n
Sterilizer1	31	y
Sterilizer2	Removed	NA

I have reviewed this input information and certify that based on information and belief formed after reasonable inquiry, the input information is true, accurate and complete.

Signed: [signature] Date: 10/9/12

Password Comment:

A	B	C	D	E	F	G	H
Month	**Aug-12**						
tors						**unit**	
	UST Oil tank deliveries						
	Ultra Low Sulfur Diesel		15	ppm S			
	Heating Oil		5000	ppm S			
	Diesel oil characteristics		128750	btu/gal	7.5	lbs/gal	
EQ ID	**Boilers**	**Size, MMBTU /hr**	**Oil firing lbs Nox**	**lbs SO2**	**Gas Firing, lbs Nox**	**unit**	
	WCSB Boiler 1	33.8	0.4		0.12	per MMBTU	
	WCSB Boiler 2	33.8	0.4		0.12	per MMBTU	
er1	Cleaver Brooks boiler	16.3			0.1	per MMBTU	
Boilers	Nebraska 1-3,	86.4 ea	0.107		0.039	per MMBTU	
EQ ID	**Engine ID**	**Size, kw**					
jine1	Peak Shaver 1	500	18			per hour	
jine2	Peak Shaver 2	500	18			per hour	
jine3	Peak Shaver 3	500	18			per hour	
jine10	Clinic Outside, 4	750	20			per hour	
	E & R Outside, 5	150	3.2			per hour	
	West Clinic, 6	620	16			per hour	
	West Clinic, 7	620	16			per hour	
-98	W Pavilion, 8	1,500	66.3			per hour	
-99	B-Unit, 9	300	13.8			per hour	
gine9	EP Cath Lab Outside, 10	1,600	35			per hour	
gine11	IPD outside, 11	900	22.5			per hour	
gine12a	Boiler plant, 12	2,000	45.7			per hour	
gine 12a			36			per hour	
gine 12b			36			per hour	
gine 14			36			per hour	
O							
rilizers			ETO emissions				
rilizer1	100 gms/run and 99% efficiency		0.0002203	lbs/run			
rilizer2			0.0002203	lbs/run			

Month: Aug-12

		Ultra Low Diesel	Fuel Oil			
	Oil Deliveries, gallons	1,020	0			
MDEQ ID	Boilers	Size, MMBTU /hr	lbs Nox/ month	lbs SO2/mo	cf NG/ month	gal oil/ month
	WCSB Boiler 1	33.8	0	0	0	0
	WCSB Boiler 2	33.8	0	0	0	0
Boiler1	Cleaver Brooks boiler	16.3	0		0	
FGBoilers	Nebraska 1-3	86.4 ea	1,337	0	34,281,300	1

MDEQ ID	Engine ID	Size, kw	lbs Nox/ Month	Sulfur Content %	readiness hours	total hours	Compliance status-hrs
Engine1	Peak Shaver 1	500	18			1	ok
Engine2	Peak Shaver 2	500	18			1	ok
Engine3	Peak Shaver 3	500	20			1	ok
Engine10	Clinic Outside, 4	750	96		5	5	ok
Exempt	E & R Outside, 5	150	14			5	ok
Exempt	West Clinic, 6	620	80			5	ok
Exempt	West Clinic, 7	620	96			6	ok
355-98	W Pavilion, 8	1,500	332	0.0015		5	ok
307-99	B-Unit, 9	300	55	0.0015		4	ok
Engine9	EP Cath Lab Outside, 10	1,600	175		5	5	ok
Engine11	IPD outside, 11	900	113		5	5	ok
Engine12a	Boiler plant 12	2,000	151		3	3	ok
Engine 12b		2,000					ok
Engine 14		2,000					ok

Permit ID	Permit Status Comparison		Calculated level	Level of Concern	Compliance Status
ETO General Permit	Sterilizer 1	Pounds ETO/mo	0.007	0.140	ok
287-01	Cleaver Brooks Boiler	Tons Nox/mo	0.00	0.58	ok
		MMCF/mo	0.0	11.9	ok
		Natural gas only	yes		ok
186-06B	FG Engines	Tons Nox/mo	0.192	3.400	ok
		Max. test hours	5.0	8.0	ok
		Total Hours	18.1	150.0	ok
186-06B	FG Boilers	Tons Nox/mo	0.67	2.90	ok
		MMCF NG/mo	34	126	ok
		oil used gal/mo	1	102,833	ok
202-02	Peak Shavers	Tons Nox/mo	0.03	1.125	ok
		hours/mo	3	125	ok
355-98	West Pavillion 10	Tons Nox/mo	0.17	1.39	ok
		Hours/mo	5	41	ok
		gal fuel/mo	800	4,875	ok
307-99	B Wing 9	tons Nox/mo	0.028	0.290	ok
		tons SO2/mo	0.00001	0.02000	ok
		hours/mo	4	41	ok
186-06B-III.1	Fuel Oil Deliveries	Sulfur Content, %	0.0015	0.030	ok
	FG Facility	Tons Nox/mo	1	7	Info only

Month / Year Aug-12

BOILER ROOM OPERATOR'S AIR PERMIT TRACKING FORM

PURPOSE: THE HOSPITAL'S AIR PERMIT WITH EPA HAS REQUIREMENTS TO TRACK BOILER FUEL USE (NAT GAS AND OIL) MONTHLY

At the end of the last day of the month, take readings from boiler monitors or meters as described below

		units
STEP 1) **For fuel usage total for previous month:**		
Record natural gas usage for **Boiler 1** from monitor here =	3416.21	kscf
Record fuel oil usage for Boiler 1 from monitor here =	1.4	gallons
STEP 2) **For fuel usage total for previous month:**		
Record natural gas usage for **Boiler 2** from monitor here =	30865.12	kscf
Record fuel oil usage for Boiler 2 from monitor here =	0	gallons
STEP 3) **For fuel usage total for previous month:**		
Record natural gas usage for **Boiler 4** from monitor here =	0	kscf
Record fuel oil usage for Boiler 4 from monitor here =	0	gallons

STEP 4) **For fuel usage total for previous month:**

Record natural gas usage for **Boiler 3** from meter here =	41828	ccf
enter nat gas meter reading from end of **previous month** here=	41828	ccf
This is the natural gas usage for the month	0	ccf

STEP 5) Save electronic copy of this template by month (example "aug 2012 boiler fuel use)
STEP 6) Print out hard copy and give to Larry J. at end of each month

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
EUCLVBOILER	Boiler 3	16.3		0		
FGBoilers	Boiler 1, 2, 4	86.4 ea		342,813		1

Notes:
Boiler 1,2,4 monitors read out gas usage in kscf or thousand standard cubic feet
so 1 kscf = 1,000 cubic feet (assuming temp and pressure same)
the main tracking form is set up for units of hundreds cubic feet or ccf (boiler 3's meter reads out in ccf)
1,000 cubic feet of natural gas = 10 ccf (10 x 100= 1,000)
this template does these conversions - operators need only enter values as indicated in steps 1-4

HFHS

Boiler ID	MDEQ Boiler ID	size (mmBtu.hr)
1	EUBOILER4	86.4
2	EUBOILER5	86.4
3	EUCLVBOILER	16.3
4	EUBOILER6	86.4

Henry Ford Hospital

Emission Tracking Input
Use Starting January 2009

hfhs envir trackerRev3for2009plus1

Input data

Month **Sep-12**

UST Oil tank deliveries	gallons
Ultra low sulfur Diesel Fuel	0
Heating Oil	0

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
	WCSB Boiler 1	33.8				
	WCSB Boiler 2	33.8				
Boiler1	Cleaver Brooks boiler	16.3		10		
FGBoilers	Nebraska 1-3	86.4 ea		283,636		0

MDEQ ID	Engine ID	Size, kw	hour meter reading	hours used	hours used, readiness checks	Fuel delivered, y/n
Engine1	Peak Shaver 1	500	17,544	1		n
Engine2	Peak Shaver 2	500	17,180	1		n
Engine3	Peak Shaver 3	500	13,296.3	0.9		n
Engine10	Clinic Outside, 4	750	2,202.3	3.9	3.9	n
	E & R Outside, 5	150	9,783.6	3.5		n
	West Clinic, 6	620	1,661	5		n
	West Clinic, 7	620	1,669	4		n
355-98	W Pavilion, 8	1,500	829	4		n
307-99	B-Unit, 9	300	756	4		n
Engine9	EP Cath Lab Outside, 10	1,600	6,391	4	4	n
Engine11	IPD outside, 11	900	4,538.6	3.6	3.6	n
Engine12	Boiler plant, 12	2,000	1,442.0	4	4	n

Describe any malfunctions or upsets

Boiler Sheet ADDED

ETO Sterilizers	Runs/month	Daily records available, y/n
Sterilizer1	30	y
Sterilizer2	Removed	NA

I have reviewed this input information and certify that based on information and belief formed after reasonable inquiry, the input information is true, accurate and complete.

Signed: [signature] Date: 10/9/12

Password Comment:

A	B	C	D	E	F	G	H
Month	**Sep-12**						
:ors						**unit**	
	UST Oil tank deliveries						
	Ultra Low Sulfur Diesel		15	ppm S			
	Heating Oil		5000	ppm S			
	Diesel oil characteristics		128750	btu/gal	7.5	lbs/gal	
EQ ID	**Boilers**	**Size, MMBTU /hr**	**Oil firing lbs Nox**	**lbs SO2**	**Gas Firing, lbs Nox**	**unit**	
	WCSB Boiler 1	33.8	0.4		0.12	per MMBTU	
	WCSB Boiler 2	33.8	0.4		0.12	per MMBTU	
er1	Cleaver Brooks boiler	16.3			0.1	per MMBTU	
Boilers	Nebraska 1-3,	86.4 ea	0.107		0.039	per MMBTU	
EQ ID	**Engine ID**	**Size, kw**					
jine1	Peak Shaver 1	500	18			per hour	
jine2	Peak Shaver 2	500	18			per hour	
jine3	Peak Shaver 3	500	18			per hour	
jine10	Clinic Outside, 4	750	20			per hour	
	E & R Outside, 5	150	3.2			per hour	
	West Clinic, 6	620	16			per hour	
	West Clinic, 7	620	16			per hour	
5-98	W Pavilion, 8	1,500	66.3			per hour	
7-99	B-Unit, 9	300	13.8			per hour	
gine9	EP Cath Lab Outside, 10	1,600	35			per hour	
gine11	IPD outside, 11	900	22.5			per hour	
gine12a	Boiler plant, 12	2,000	45.7			per hour	
gine 12a			36			per hour	
gine 12b			36			per hour	
gine 14			36			per hour	
TO erilizers			ETO emissions				
erilizer1	100 gms/run and 99% efficiency		0.0002203	lbs/run			
erilizer2			0.0002203	lbs/run			

Ford Hospital

Air Permit Emission Tracking Form
Use After August 2008

hfhs envir trackerRev3for2009plus1

Month: Sep-12

		Ultra Low Diesel	Fuel Oil			
	Oil Deliveries, gallons	0	0			
MDEQ ID	Boilers	Size, MMBTU /hr	lbs Nox/ month	lbs SO2/mo	cf NG/ month	gal oil/ month
	WCSB Boiler 1	33.8	0	0	0	0
	WCSB Boiler 2	33.8	0	0	0	0
Boiler1	Cleaver Brooks boiler	16.3	0		1,000	
FGBoilers	Nebraska 1-3	86.4 ea	1,106	0	28,363,600	0

MDEQ ID	Engine ID	Size, kw	lbs Nox/ Month	Sulfur Content %	readiness hours	total hours	Compliance status-hrs
Engine1	Peak Shaver 1	500	18			1	ok
Engine2	Peak Shaver 2	500	18			1	ok
Engine3	Peak Shaver 3	500	16			1	ok
Engine10	Clinic Outside, 4	750	78		4	4	ok
Exempt	E & R Outside, 5	150	11			4	ok
Exempt	West Clinic, 6	620	80			5	ok
Exempt	West Clinic, 7	620	64			4	ok
355-98	W Pavilion, 8	1,500	265	0.0000		4	ok
307-99	B-Unit, 9	300	55	0.0000		4	ok
Engine9	EP Cath Lab Outside, 10	1,600	140		4	4	ok
Engine11	IPD outside, 11	900	81		4	4	ok
Engine12a	Boiler plant 12	2,000	183		4	4	ok
Engine 12b		2,000					ok
Engine 14		2,000					ok

Permit ID	Permit Status Comparison		Calculated level	Level of Concern	Compliance Status
ETO General Permit	Sterilizer 1	Pounds ETO/mo	0.007	0.140	ok
287-01	Cleaver Brooks Boiler	Tons Nox/mo	0.00	0.58	ok
		MMCF/mo	0.0	11.9	ok
		Natural gas only	yes		ok
186-06B	FG Engines	Tons Nox/mo	0.150	3.400	ok
		Max. test hours	4.0	8.0	ok
		Total Hours	15.5	150.0	ok
186-06B	FG Boilers	Tons Nox/mo	0.55	2.90	ok
		MMCF NG/mo	28	126	ok
		oil used gal/mo	0	102,833	ok
202-02	Peak Shavers	Tons Nox/mo	0.03	1.125	ok
		hours/mo	3	125	ok
355-98	West Pavillion 10	Tons Nox/mo	0.13	1.39	ok
		Hours/mo	4	41	ok
		gal fuel/mo	640	4,875	ok
307-99	B Wing 9	tons Nox/mo	0.028	0.290	ok
		tons SO2/mo	0.00000	0.02000	ok
		hours/mo	4	41	ok
186-06B-III.1	Fuel Oil Deliveries	Sulfur Content, %	0.0000	0.030	ok
	FG Facility	Tons Nox/mo	1	7	Info only

Month/Year___September 2012_____

BOILER ROOM OPERATOR'S AIR PERMIT TRACKING FORM

PURPOSE: THE HOSPITAL'S AIR PERMIT WITH EPA HAS REQUIREMENTS TO TRACK BOILER FUEL USE (NAT GAS AND OIL) MONTHLY

At the end of the last day of the month, take readings from boiler monitors or meters as described below

		units
STEP 1)	**For fuel usage total for previous month:**	
Record natural gas usage for **Boiler 1** from monitor here =	9033.94	kscf
Record fuel oil usage for Boiler 1 from monitor here =	0	gallons
STEP 2)	**For fuel usage total for previous month:**	
Record natural gas usage for **Boiler 2** from monitor here =	19329.68	kscf
Record fuel oil usage for Boiler 2 from monitor here =	0	gallons
STEP 3)	**For fuel usage total for previous month:**	
Record natural gas usage for **Boiler 4** from monitor here =	0	kscf
Record fuel oil usage for Boiler 4 from monitor here =	0	gallons

STEP 4)	**For fuel usage total for previous month:**	
Record natural gas usage for **Boiler 3** from meter here =	41838	ccf
enter nat gas meter reading from end of **previous month** here=	41828	ccf
This is the natural gas usage for the month	10	ccf

STEP 5) Save electronic copy of this template by month (example "aug 2012 boiler fuel use)
STEP 6) Print out hard copy and give to Larry J. at end of each month

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
EUCLVBOILER	Boiler 3	16.3		10		
FGBoilers	Boiler 1, 2, 4	86.4 ea		283,636		0

Notes:
Boiler 1,2,4 monitors read out gas usage in kscf or thousand standard cubic feet
so 1 kscf = 1,000 cubic feet (assuming temp and pressure same)
the main tracking form is set up for units of hundreds cubic feet or ccf (boiler 3's meter reads out in ccf)
1,000 cubic feet of natural gas = 10 ccf (10 x 100= 1,000)
this template does these conversions - operators need only enter values as indicated in steps 1-4
HFHS

Boiler ID	MDEQ Boiler ID	size (mmBtu.hr)
1	EUBOILER4	86.4
2	EUBOILER5	86.4
3	EUCLVBOILER	16.3
4	EUBOILER6	86.4

Henry Ford Hospital

Emission Tracking Input
Use Starting January 2009

hfhs envir trackerRev3for2009plus1

Input data

Month Oct-12

UST Oil tank deliveries	gallons
Ultra low sulfur Diesel Fuel	0
Heating Oil	0

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
	WCSB Boiler 1	33.8		0		
	WCSB Boiler 2	33.8		0		
Boiler1	Cleaver Brooks boiler	16.3		24,033		
FGBoilers	Nebraska 1-3	86.4 ea		206,810		0

MDEQ ID	Engine ID	Size, kw	hour meter reading	hours used	hours used, readiness checks	Fuel delivered, y/n
Engine1	Peak Shaver 1	500	17,545	1		n
Engine2	Peak Shaver 2	500	17,180	0		n
Engine3	Peak Shaver 3	500	13,297.1	0.8		n
Engine10	Clinic Outside, 4	750	2,206.3	4	4	n
	E & R Outside, 5	150	9,787.2	3.6		n
	West Clinic, 6	620	1,661	4		n
	West Clinic, 7	620	1,673	4		n
355-98	W Pavilion, 8	1,500	832	3		n
307-99	B-Unit, 9	300	759	3		n
Engine9	EP Cath Lab Outside, 10	1,600	6,395	4	4	n
Engine11	IPD outside, 11	900	4,542.2	3.6	3.6	n
Engine12	Boiler plant, 12	2,000	1,446.0	4	4	n

Describe any malfunctions or upsets

Check Hour Meter P.S. Generator #2
ON Next Testing Run.

ETO Sterilizers	Runs/month	Daily records available, y/n
Sterilizer1	31	y
Sterilizer2	Removed	NA

I have reviewed this input information and certify that based on information and belief formed after reasonable inquiry, the input information is true, accurate and complete.

Signed: [signature] Date: 11/8/12

Password Comment:

A	B	C	D	E	F	G	H
Month	**Oct-12**						
tors						**unit**	
	UST Oil tank deliveries						
	Ultra Low Sulfur Diesel		15	ppm S			
	Heating Oil		5000	ppm S			
	Diesel oil characteristics		128750	btu/gal	7.5	lbs/gal	
EQ ID	**Boilers**	**Size, MMBTU /hr**	**Oil firing lbs Nox**	**lbs SO2**	**Gas Firing, lbs Nox**	**unit**	
	WCSB Boiler 1	33.8	0.4		0.12	per MMBTU	
	WCSB Boiler 2	33.8	0.4		0.12	per MMBTU	
er1	Cleaver Brooks boiler	16.3			0.1	per MMBTU	
Boilers	Nebraska 1-3,	86.4 ea	0.107		0.039	per MMBTU	
EQ ID	**Engine ID**	**Size, kw**					
ine1	Peak Shaver 1	500	18			per hour	
ine2	Peak Shaver 2	500	18			per hour	
ine3	Peak Shaver 3	500	18			per hour	
ine10	Clinic Outside, 4	750	20			per hour	
	E & R Outside, 5	150	3.2			per hour	
	West Clinic, 6	620	16			per hour	
	West Clinic, 7	620	16			per hour	
-98	W Pavilion, 8	1,500	66.3			per hour	
-99	B-Unit, 9	300	13.8			per hour	
ine9	EP Cath Lab Outside, 10	1,600	35			per hour	
ine11	IPD outside, 11	900	22.5			per hour	
ine12a	Boiler plant, 12	2,000	45.7			per hour	
ine 12a			36			per hour	
ine 12b			36			per hour	
ine 14			36			per hour	
D							
rilizers			ETO emissions				
rilizer1	100 gms/run and 99% efficiency		0.0002203	lbs/run			
rilizer2			0.0002203	lbs/run			

Henry Ford Hospital | Air Permit Emission Tracking Form Use After August 2008 | hfhs envir trackerRev3for2009plus1

Month: Oct-12

		Ultra Low Diesel	Fuel Oil			
	Oil Deliveries, gallons	0	0			
MDEQ ID	Boilers	Size, MMBTU /hr	lbs Nox/ month	lbs SO2/mo	cf NG/ month	gal oil/ month
	WCSB Boiler 1	33.8	0	0	0	0
	WCSB Boiler 2	33.8	0	0	0	0
Boiler1	Cleaver Brooks boiler	16.3	240		2,403,300	
FGBoilers	Nebraska 1-3	86.4 ea	807	0	20,681,000	0

MDEQ ID	Engine ID	Size, kw	lbs Nox/ Month	Sulfur Content %	readiness hours	total hours	Compliance status-hrs
Engine1	Peak Shaver 1	500	18			1	ok
Engine2	Peak Shaver 2	500	0			0	ok
Engine3	Peak Shaver 3	500	14			1	ok
Engine10	Clinic Outside, 4	750	80		4	4	ok
Exempt	E & R Outside, 5	150	12			4	ok
Exempt	West Clinic, 6	620	64			4	ok
Exempt	West Clinic, 7	620	64			4	ok
355-98	W Pavilion, 8	1,500	199	0.0000		3	ok
307-99	B-Unit, 9	300	41	0.0000		3	ok
Engine9	EP Cath Lab Outside, 10	1,600	140		4	4	ok
Engine11	IPD outside, 11	900	81		4	4	ok
Engine12a	Boiler plant 12	2,000	183		4	4	ok
Engine 12b		2,000					ok
Engine 14		2,000					ok

Permit ID	Permit Status Comparison		Calculated level	Level of Concern	Compliance Status
ETO General Permit	Sterilizer 1	Pounds ETO/mo	0.007	0.140	ok
287-01	Cleaver Brooks Boiler	Tons Nox/mo	0.12	0.58	ok
		MMCF/mo	2.4	11.9	ok
		Natural gas only	yes		ok
186-06B	FG Engines	Tons Nox/mo	0.151	3.400	ok
		Max. test hours	4.0	8.0	ok
		Total Hours	15.6	150.0	ok
186-06B	FG Boilers	Tons Nox/mo	0.40	2.90	ok
		MMCF NG/mo	21	126	ok
		oil used gal/mo	0	102,833	ok
202-02	Peak Shavers	Tons Nox/mo	0.02	1.125	ok
		hours/mo	2	125	ok
355-98	West Pavillion 10	Tons Nox/mo	0.10	1.39	ok
		Hours/mo	3	41	ok
		gal fuel/mo	480	4,875	ok
307-99	B Wing 9	tons Nox/mo	0.021	0.290	ok
		tons SO2/mo	0.00000	0.02000	ok
		hours/mo	3	41	ok
186-06B-III.1	Fuel Oil Deliveries	Sulfur Content, %	0.0000	0.030	ok
	FG Facility	Tons Nox/mo	1	7	Info only

Henry Ford Hospital

Emission Tracking Input
Use Starting January 2009

hfhs envir trackerRev3for2009plus1

Input data

Month: **Nov-12**

UST Oil tank deliveries	gallons
Ultra low sulfur Diesel Fuel	25,000
Heating Oil	0

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
	WCSB Boiler 1	33.8				
	WCSB Boiler 2	33.8				
Boiler1	Cleaver Brooks boiler	16.3		30,040		
FGBoilers	Nebraska 1-3	86.4 ea		232,680		0

MDEQ ID	Engine ID	Size, kw	hour meter reading	hours used	hours used, readiness checks	Fuel delivered, y/n
Engine1	Peak Shaver 1	500	17,546	1		n
Engine2	Peak Shaver 2	500	17,181	1		n
Engine3	Peak Shaver 3	500	13,298.1	1		n
Engine10	Clinic Outside, 4	750	2,210.0	3.7	3.7	n
	E & R Outside, 5	150	9,790.6	3.4		n
	West Clinic, 6	620	1,669	4		n
	West Clinic, 7	620	1,677	4		n
355-98	W Pavilion, 8	1,500	836	4		n
307-99	B-Unit, 9	300	763	4		n
Engine9	EP Cath Lab Outside, 10	1,600	6,398	3	3	n
Engine11	IPD outside, 11	900	4,545.7	3.5	3.5	n
Engine12	Boiler plant, 12	2,000	1,450.0	4	4	y

Describe any malfunctions or upsets

ETO Sterilizers	Runs/month	Daily records available, y/n
Sterilizer1	30	y
Sterilizer2	Removed	NA

I have reviewed this input information and certify that based on information and belief formed after reasonable inquiry, the input information is true, accurate and complete.

Signed: [signature] Date: 12/12/12

Password Comment:

A	B	C	D	E	F	G	H
Month	**Nov-12**						
ctors						**unit**	
	UST Oil tank deliveries						
	Ultra Low Sulfur Diesel		15	ppm S			
	Heating Oil		5000	ppm S			
	Diesel oil characteristics		128750	btu/gal	7.5	lbs/gal	
DEQ ID	**Boilers**	**Size, MMBTU /hr**	**Oil firing lbs Nox**	**lbs SO2**	**Gas Firing, lbs Nox**	**unit**	
	WCSB Boiler 1	33.8	0.4		0.12	per MMBTU	
	WCSB Boiler 2	33.8	0.4		0.12	per MMBTU	
iler1	Cleaver Brooks boiler	16.3			0.1	per MMBTU	
Boilers	Nebraska 1-3,	86.4 ea	0.107		0.039	per MMBTU	
DEQ ID	**Engine ID**	**Size, kw**					
gine1	Peak Shaver 1	500	18			per hour	
gine2	Peak Shaver 2	500	18			per hour	
gine3	Peak Shaver 3	500	18			per hour	
gine10	Clinic Outside, 4	750	20			per hour	
	E & R Outside, 5	150	3.2			per hour	
	West Clinic, 6	620	16			per hour	
	West Clinic, 7	620	16			per hour	
5-98	W Pavilion, 8	1,500	66.3			per hour	
7-99	B-Unit, 9	300	13.8			per hour	
gine9	EP Cath Lab Outside, 10	1,600	35			per hour	
gine11	IPD outside, 11	900	22.5			per hour	
gine12a	Boiler plant, 12	2,000	45.7			per hour	
gine 12a			36			per hour	
gine 12b			36			per hour	
gine 14			36			per hour	
TO erilizers			ETO emissions				
erilizer1	100 gms/run and 99% efficiency		0.0002203	lbs/run			
erilizer2			0.0002203	lbs/run			

Month: Nov-12

		Ultra Low Diesel	Fuel Oil
	Oil Deliveries, gallons	25,000	0

MDEQ ID	Boilers	Size, MMBTU /hr	lbs Nox/ month	lbs SO2/mo	cf NG/ month	gal oil/ month
	WCSB Boiler 1	33.8	0	0	0	0
	WCSB Boiler 2	33.8	0	0	0	0
Boiler1	Cleaver Brooks boiler	16.3	300		3,004,000	
FGBoilers	Nebraska 1-3	86.4 ea	907	0	23,268,000	0

MDEQ ID	Engine ID	Size, kw	lbs Nox/ Month	Sulfur Content %	readiness hours	total hours	Compliance status-hrs
Engine1	Peak Shaver 1	500	18			1	ok
Engine2	Peak Shaver 2	500	18			1	ok
Engine3	Peak Shaver 3	500	18			1	ok
Engine10	Clinic Outside, 4	750	74		4	4	ok
Exempt	E & R Outside, 5	150	11			3	ok
Exempt	West Clinic, 6	620	64			4	ok
Exempt	West Clinic, 7	620	64			4	ok
355-98	W Pavilion, 8	1,500	265	0.0015		4	ok
307-99	B-Unit, 9	300	55	0.0015		4	ok
Engine9	EP Cath Lab Outside, 10	1,600	105		3	3	ok
Engine11	IPD outside, 11	900	79		4	4	ok
Engine12a	Boiler plant 12	2,000	183		4	4	ok
Engine 12b		2,000					ok
Engine 14		2,000					ok

Permit ID	Permit Status Comparison		Calculated level	Level of Concern	Compliance Status
ETO General Permit	Sterilizer 1	Pounds ETO/mo	0.007	0.140	ok
287-01	Cleaver Brooks Boiler	Tons Nox/mo	0.15	0.58	ok
		MMCF/mo	3.0	11.9	ok
		Natural gas only	yes		ok
186-06B	FG Engines	Tons Nox/mo	0.129	3.400	ok
		Max. test hours	4.0	8.0	ok
		Total Hours	14.2	150.0	ok
186-06B	FG Boilers	Tons Nox/mo	0.45	2.90	ok
		MMCF NG/mo	23	126	ok
		oil used gal/mo	0	102,833	ok
202-02	Peak Shavers	Tons Nox/mo	0.03	1.125	ok
		hours/mo	3	125	ok
355-98	West Pavillion 10	Tons Nox/mo	0.13	1.39	ok
		Hours/mo	4	41	ok
		gal fuel/mo	640	4,875	ok
307-99	B Wing 9	tons Nox/mo	0.028	0.290	ok
		tons SO2/mo	0.00001	0.02000	ok
		hours/mo	4	41	ok
186-06B-III.1	Fuel Oil Deliveries	Sulfur Content, %	0.0015	0.030	ok
	FG Facility	Tons Nox/mo	1	7	Info only

Input data

Month: Dec-12

UST Oil tank deliveries	gallons
Ultra low sulfur Diesel Fuel	1,000
Heating Oil	0

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
	WCSB Boiler 1	33.8		0		
	WCSB Boiler 2	33.8		0		
Boiler1	Cleaver Brooks boiler	16.3		46,426		
FGBoilers	Nebraska 1-3	86.4 ea		268,123		

MDEQ ID	Engine ID	Size, kw	hour meter reading	hours used	hours used, readiness checks	Fuel delivered, y/n
Engine1	Peak Shaver 1	500	0	0		n
Engine2	Peak Shaver 2	500	0	0		n
Engine3	Peak Shaver 3	500	0.0	0		n
Engine10	Clinic Outside, 4	750	2,214.0	4	4	n
	E & R Outside, 5	150	9,793.1	3.5		n
	West Clinic, 6	620	1,674	5		470
	West Clinic, 7	620	1,682	5		n
355-98	W Pavilion, 8	1,500	840	4		n
307-99	B-Unit, 9	300	767	4		n
Engine9	EP Cath Lab Outside, 10	1,600	6,402	4	4	530.3
Engine11	IPD outside, 11	900	4,549.0	3.3	3.3	n
Engine12	Boiler plant, 12	2,000	229.1	8.8	11.8	n
	#12 TEMP		1453	3		

Describe any malfunctions or upsets

ETO Sterilizers	Runs/month	Daily records available, y/n
Sterilizer1	31	y
Sterilizer2	Removed	NA

I have reviewed this input information and certify that based on information and belief formed after reasonable inquiry, the input information is true, accurate and complete.

Signed: [signature] Date: 1/7/13

Password Comment:

	A	B	C	D	E	F	G	H
1	**Month**	**Dec-12**						
2	**Factors**						**unit**	
3								
4		**UST Oil tank deliveries**						
5		Ultra Low Sulfur Diesel		15	ppm S			
6		Heating Oil		5000	ppm S			
7		Diesel oil characteristics		128750	btu/gal	7.5	lbs/gal	
8	**MDEQ ID**	**Boilers**	**Size, MMBTU /hr**	**Oil firing lbs Nox**	**lbs SO2**	**Gas Firing, lbs Nox**	**unit**	
9		WCSB Boiler 1	33.8	0.4		0.12	per MMBTU	
10		WCSB Boiler 2	33.8	0.4		0.12	per MMBTU	
11	Boiler1	Cleaver Brooks boiler	16.3			0.1	per MMBTU	
12	FGBoilers	Nebraska 1-3,	86.4 ea	0.107		0.039	per MMBTU	
13								
14	**MDEQ ID**	**Engine ID**	**Size, kw**					
15	Engine1	Peak Shaver 1	500	18			per hour	
16	Engine2	Peak Shaver 2	500	18			per hour	
17	Engine3	Peak Shaver 3	500	18			per hour	
18	Engine10	Clinic Outside, 4	750	20			per hour	
19		E & R Outside, 5	150	3.2			per hour	
20		West Clinic, 6	620	16			per hour	
21		West Clinic, 7	620	16			per hour	
22	355-98	W Pavilion, 8	1,500	66.3			per hour	
23	307-99	B-Unit, 9	300	13.8			per hour	
24	Engine9	EP Cath Lab Outside, 10	1,600	35			per hour	
25	Engine11	IPD outside, 11	900	22.5			per hour	
26	Engine12a	Boiler plant, 12	2,000	45.7			per hour	
27	Engine 12a			36			per hour	
28	Engine 12b			36			per hour	
29	Engine 14			36			per hour	
30								
31	**ETO Sterilizers**			ETO emissions				
32	Sterilizer1	100 gms/run and 99% efficiency		0.0002203	lbs/run			
33	Sterilizer2			0.0002203	lbs/run			

Month: Dec-12

		Ultra Low Diesel	Fuel Oil			
	Oil Deliveries, gallons	1,000	0			
MDEQ ID	Boilers	Size, MMBTU /hr	lbs Nox/ month	lbs SO2/mo	cf NG/ month	gal oil/ month
	WCSB Boiler 1	33.8	0	0	0	0
	WCSB Boiler 2	33.8	0	0	0	0
Boiler1	Cleaver Brooks boiler	16.3	464		4,642,600	
FGBoilers	Nebraska 1-3	86.4 ea	1,046	0	26,812,300	0

MDEQ ID	Engine ID	Size, kw	lbs Nox/ Month	Sulfur Content %	readiness hours	total hours	Compliance status-hrs
Engine1	Peak Shaver 1	500	0			0	ok
Engine2	Peak Shaver 2	500	0			0	ok
Engine3	Peak Shaver 3	500	0			0	ok
Engine10	Clinic Outside, 4	750	80		4	4	ok
Exempt	E & R Outside, 5	150	11			4	ok
Exempt	West Clinic, 6	620	80			5	ok
Exempt	West Clinic, 7	620	80			5	ok
355-98	W Pavilion, 8	1,500	265	0.0015		4	ok
307-99	B-Unit, 9	300	55	0.0015		4	ok
Engine9	EP Cath Lab Outside, 10	1,600	140		4	4	ok
Engine11	IPD outside, 11	900	74		3	3	ok
Engine12a	Boiler plant 12	2,000	402		12	9	check test hrs
Engine 12b		2,000					ok
Engine 14		2,000					ok

Permit ID	Permit Status Comparison		Calculated level	Level of Concern	Compliance Status
ETO General Permit	Sterilizer 1	Pounds ETO/mo	0.007	0.140	ok
287-01	Cleaver Brooks Boiler	Tons Nox/mo	0.23	0.58	ok
		MMCF/mo	4.6	11.9	ok
		Natural gas only	yes		ok
186-06B	FG Engines	Tons Nox/mo	0.147	3.400	ok
		Max. test hours	11.8	8.0	check annual
		Total Hours	20.1	150.0	ok
186-06B	FG Boilers	Tons Nox/mo	0.52	2.90	ok
		MMCF NG/mo	27	126	ok
		oil used gal/mo	0	102,833	ok
202-02	Peak Shavers	Tons Nox/mo	0.00	1.125	ok
		hours/mo	0	125	ok
355-98	West Pavillion 10	Tons Nox/mo	0.13	1.39	ok
		Hours/mo	4	41	ok
		gal fuel/mo	640	4,875	ok
307-99	B Wing 9	tons Nox/mo	0.028	0.290	ok
		tons SO2/mo	0.00001	0.02000	ok
		hours/mo	4	41	ok
186-06B-III.1	Fuel Oil Deliveries	Sulfur Content, %	0.0015	0.030	ok
	FG Facility	Tons Nox/mo	1	7	Info only

Input data

Month Jan-13

UST Oil tank deliveries	gallons
Ultra low sulfur Diesel Fuel	0
Heating Oil	0

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
	WCSB Boiler 1	33.8		0		
	WCSB Boiler 2	33.8		0		
Boiler1	Cleaver Brooks boiler	16.3		34,410		
FGBoilers	Nebraska 1-3	86.4 ea		301,093		0

MDEQ ID	Engine ID	Size, kw	hour meter reading	hours used	hours used, readiness checks	Fuel delivered, y/n
Engine1	Peak Shaver 1	500		0		n
Engine2	Peak Shaver 2	500		0		n
Engine3	Peak Shaver 3	500		0		n
Engine10	Clinic Outside, 4	750	2,218.7	4.7	4.7	n
	E & R Outside, 5	150	9,796.9	3.8		n
	West Clinic, 6	620	1,679	5		n
	West Clinic, 7	620	1,688	6		n
355-98	W Pavilion, 8	1,500	843	3		n
307-99	B-Unit, 9	300	771	6		n
Engine9	EP Cath Lab Outside, 10	1,600	6,406	4	4	n
Engine11	IPD outside, 11	900	4,552.8	3.8	3.8	n
Engine12	Boiler plant, 12	2,000	232.0	2.9	2.9	n

Describe any malfunctions or upsets

ETO Sterilizers	Runs/month	Daily records available, y/n
Sterilizer1	31	y
Sterilizer2	Removed	NA

I have reviewed this input information and certify that based on information and belief formed after reasonable inquiry, the input information is true, accurate and complete.

Signed: [signature] Date: 2/5/13

Password Comment:

	A	B	C	D	E	F	G	H
1	**Month**	**Jan-13**						
2	**Factors**						**unit**	
3								
4		**UST Oil tank deliveries**						
5		Ultra Low Sulfur Diesel		15	ppm S			
6		Heating Oil		5000	ppm S			
7		Diesel oil characteristics		128750	btu/gal	7.5	lbs/gal	
8	**MDEQ ID**	**Boilers**	**Size, MMBTU /hr**	**Oil firing lbs Nox**	**lbs SO2**	**Gas Firing, lbs Nox**	**unit**	
9		WCSB Boiler 1	33.8	0.4		0.12	per MMBTU	
10		WCSB Boiler 2	33.8	0.4		0.12	per MMBTU	
11	Boiler1	Cleaver Brooks boiler	16.3			0.1	per MMBTU	
12	FGBoilers	Nebraska 1-3,	86.4 ea	0.107		0.039	per MMBTU	
13								
14	**MDEQ ID**	**Engine ID**	**Size, kw**					
15	Engine1	Peak Shaver 1	500	18			per hour	
16	Engine2	Peak Shaver 2	500	18			per hour	
17	Engine3	Peak Shaver 3	500	18			per hour	
18	Engine10	Clinic Outside, 4	750	20			per hour	
19		E & R Outside, 5	150	3.2			per hour	
20		West Clinic, 6	620	16			per hour	
21		West Clinic, 7	620	16			per hour	
22	355-98	W Pavilion, 8	1,500	66.3			per hour	
23	307-99	B-Unit, 9	300	13.8			per hour	
24	Engine9	EP Cath Lab Outside, 10	1,600	35			per hour	
25	Engine11	IPD outside, 11	900	22.5			per hour	
26	Engine12a	Boiler plant, 12	2,000	45.7			per hour	
27	Engine 12a			36			per hour	
28	Engine 12b			36			per hour	
29	Engine 14			36			per hour	
30								
31	**ETO Sterilizers**			ETO emissions				
32	Sterilizer1	100 gms/run and 99% efficiency		0.0002203	lbs/run			
33	Sterilizer2			0.0002203	lbs/run			

Month: Jan-13

		Ultra Low Diesel	Fuel Oil			
	Oil Deliveries, gallons	0	0			
MDEQ ID	Boilers	Size, MMBTU /hr	lbs Nox/ month	lbs SO2/mo	cf NG/ month	gal oil/ month
	WCSB Boiler 1	33.8	0	0	0	0
	WCSB Boiler 2	33.8	0	0	0	0
Boiler1	Cleaver Brooks boiler	16.3	344		3,441,000	
FGBoilers	Nebraska 1-3	86.4 ea	1,174	0	30,109,300	0

MDEQ ID	Engine ID	Size, kw	lbs Nox/ Month	Sulfur Content %	readiness hours	total hours	Compliance status-hrs
Engine1	Peak Shaver 1	500	0			0	ok
Engine2	Peak Shaver 2	500	0			0	ok
Engine3	Peak Shaver 3	500	0			0	ok
Engine10	Clinic Outside, 4	750	94		5	5	ok
Exempt	E & R Outside, 5	150	12			4	ok
Exempt	West Clinic, 6	620	80			5	ok
Exempt	West Clinic, 7	620	96			6	ok
355-98	W Pavilion, 8	1,500	199	0.0000		3	ok
307-99	B-Unit, 9	300	83	0.0000		6	ok
Engine9	EP Cath Lab Outside, 10	1,600	140		4	4	ok
Engine11	IPD outside, 11	900	86		4	4	ok
Engine12a	Boiler plant 12	2,000	133		3	3	ok
Engine 12b		2,000					ok
Engine 14		2,000					ok

Permit ID	Permit Status Comparison		Calculated level	Level of Concern	Compliance Status
ETO General Permit	Sterilizer 1	Pounds ETO/mo	0.007	0.140	ok
287-01	Cleaver Brooks Boiler	Tons Nox/mo	0.17	0.58	ok
		MMCF/mo	3.4	11.9	ok
		Natural gas only	yes		ok
186-06B	FG Engines	Tons Nox/mo	0.160	3.400	ok
		Max. test hours	4.7	8.0	ok
		Total Hours	15.4	150.0	ok
186-06B	FG Boilers	Tons Nox/mo	0.59	2.90	ok
		MMCF NG/mo	30	126	ok
		oil used gal/mo	0	102,833	ok
202-02	Peak Shavers	Tons Nox/mo	0.00	1.125	ok
		hours/mo	0	125	ok
355-98	West Pavillion 10	Tons Nox/mo	0.10	1.39	ok
		Hours/mo	3	41	ok
		gal fuel/mo	480	4,875	ok
307-99	B Wing 9	tons Nox/mo	0.041	0.290	ok
		tons SO2/mo	0.00000	0.02000	ok
		hours/mo	6	41	ok
186-06B-III.1	Fuel Oil Deliveries	Sulfur Content, %	0.0000	0.030	ok
	FG Facility	Tons Nox/mo	1	7	Info only

Input data

Month Feb-13

UST Oil tank deliveries	gallons
Ultra low sulfur Diesel Fuel	0
Heating Oil	0

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
	WCSB Boiler 1	33.8		0		
	WCSB Boiler 2	33.8		0		
Boiler1	Cleaver Brooks boiler	16.3		26,862		
FGBoilers	Nebraska 1-3	86.4 ea		309,537		0

MDEQ ID	Engine ID	Size, kw	hour meter reading	hours used	hours used, readiness checks	Fuel delivered, y/n
Engine1	Peak Shaver 1	500	-	0		n
Engine2	Peak Shaver 2	500	-	0		n
Engine3	Peak Shaver 3	500	-	0		n
Engine10	Clinic Outside, 4	750	2,223.6	4.9	4.9	n
	E & R Outside, 5	150	9,800.5	3.6		n
	West Clinic, 6	620	1,684	5		n
	West Clinic, 7	620	1,693	5		n
355-98	W Pavilion, 8	1,500	849	6		n
307-99	B-Unit, 9	300	775	4		n
Engine9	EP Cath Lab Outside, 10	1,600	6,410	4	4	n
Engine11	IPD outside, 11	900	4,556.4	3.6	3.6	n
Engine12	Boiler plant, 12	2,000	236.2	4.2	4.2	n

Describe any malfunctions or upsets

ETO Sterilizers	Runs/month	Daily records available, y/n
Sterilizer1	28	y
Sterilizer2	Removed	NA

I have reviewed this input information and certify that based on information and belief formed after reasonable inquiry, the input information is true, accurate and complete.

Signed: [signature] Date: 3/7/13

Password Comment:

	A	B	C	D	E	F	G	H
1	**Month**	**Feb-13**						
2	**Factors**						**unit**	
3								
4		**UST Oil tank deliveries**						
5		Ultra Low Sulfur Diesel		15	ppm S			
6		Heating Oil		5000	ppm S			
7		Diesel oil characteristics		128750	btu/gal	7.5	lbs/gal	
8	**MDEQ ID**	**Boilers**	**Size, MMBTU /hr**	**Oil firing lbs Nox**	**lbs SO2**	**Gas Firing, lbs Nox**	**unit**	
9		WCSB Boiler 1	33.8	0.4		0.12	per MMBTU	
10		WCSB Boiler 2	33.8	0.4		0.12	per MMBTU	
11	Boiler1	Cleaver Brooks boiler	16.3			0.1	per MMBTU	
12	FGBoilers	Nebraska 1-3,	86.4 ea	0.107		0.039	per MMBTU	
13								
14	**MDEQ ID**	**Engine ID**	**Size, kw**					
15	Engine1	Peak Shaver 1	500	18			per hour	
16	Engine2	Peak Shaver 2	500	18			per hour	
17	Engine3	Peak Shaver 3	500	18			per hour	
18	Engine10	Clinic Outside, 4	750	20			per hour	
19		E & R Outside, 5	150	3.2			per hour	
20		West Clinic, 6	620	16			per hour	
21		West Clinic, 7	620	16			per hour	
22	355-98	W Pavilion, 8	1,500	66.3			per hour	
23	307-99	B-Unit, 9	300	13.8			per hour	
24	Engine9	EP Cath Lab Outside, 10	1,600	35			per hour	
25	Engine11	IPD outside, 11	900	22.5			per hour	
26	Engine12a	Boiler plant, 12	2,000	45.7			per hour	
27	Engine 12a			36			per hour	
28	Engine 12b			36			per hour	
29	Engine 14			36			per hour	
30								
31	**ETO Sterilizers**			ETO emissions				
32	Sterilizer1	100 gms/run and 99% efficiency		0.0002203	lbs/run			
33	Sterilizer2			0.0002203	lbs/run			

Month: Feb-13

		Ultra Low Diesel	Fuel Oil			
	Oil Deliveries, gallons	0	0			
MDEQ ID	Boilers	Size, MMBTU /hr	lbs Nox/ month	lbs SO2/mo	cf NG/ month	gal oil/ month
	WCSB Boiler 1	33.8	0	0	0	0
	WCSB Boiler 2	33.8	0	0	0	0
Boiler1	Cleaver Brooks boiler	16.3	269		2,686,200	
FGBoilers	Nebraska 1-3	86.4 ea	1,207	0	30,953,700	0

MDEQ ID	Engine ID	Size, kw	lbs Nox/ Month	Sulfur Content %	readiness hours	total hours	Compliance status-hrs
Engine1	Peak Shaver 1	500	0			0	ok
Engine2	Peak Shaver 2	500	0			0	ok
Engine3	Peak Shaver 3	500	0			0	ok
Engine10	Clinic Outside, 4	750	98		5	5	ok
Exempt	E & R Outside, 5	150	12			4	ok
Exempt	West Clinic, 6	620	80			5	ok
Exempt	West Clinic, 7	620	80			5	ok
355-98	W Pavilion, 8	1,500	398	0.0000		6	ok
307-99	B-Unit, 9	300	55	0.0000		4	ok
Engine9	EP Cath Lab Outside, 10	1,600	140		4	4	ok
Engine11	IPD outside, 11	900	81		4	4	ok
Engine12a	Boiler plant 12	2,000	192		4	4	ok
Engine 12b		2,000					ok
Engine 14		2,000					ok

Permit ID	Permit Status Comparison		Calculated level	Level of Concern	Compliance Status
ETO General Permit	Sterilizer 1	Pounds ETO/mo	0.006	0.140	ok
287-01	Cleaver Brooks Boiler	Tons Nox/mo	0.13	0.58	ok
		MMCF/mo	2.7	11.9	ok
		Natural gas only	yes		ok
186-06B	FG Engines	Tons Nox/mo	0.160	3.400	ok
		Max. test hours	4.9	8.0	ok
		Total Hours	16.7	150.0	ok
186-06B	FG Boilers	Tons Nox/mo	0.60	2.90	ok
		MMCF NG/mo	31	126	ok
		oil used gal/mo	0	102,833	ok
202-02	Peak Shavers	Tons Nox/mo	0.00	1.125	ok
		hours/mo	0	125	ok
355-98	West Pavillion 10	Tons Nox/mo	0.20	1.39	ok
		Hours/mo	6	41	ok
		gal fuel/mo	960	4,875	ok
307-99	B Wing 9	tons Nox/mo	0.028	0.290	ok
		tons SO2/mo	0.00000	0.02000	ok
		hours/mo	4	41	ok
186-06B-III.1	Fuel Oil Deliveries	Sulfur Content, %	0.0000	0.030	ok
	FG Facility	Tons Nox/mo	1	7	Info only

Month / Year Feb-13

BOILER ROOM OPERATOR'S AIR PERMIT TRACKING FORM

PURPOSE: THE HOSPITAL'S AIR PERMIT WITH EPA HAS REQUIREMENTS TO TRACK BOILER FUEL USE (NAT GAS AND OIL) MONTHLY

At the end of the last day of the month, take readings from boiler monitors or meters as described below

		units
STEP 1) **For fuel usage total for previous month:**		
Record natural gas usage for **Boiler 1** from monitor here =	11585.68	kscf
Record fuel oil usage for Boiler 1 from monitor here =		gallons
STEP 2) **For fuel usage total for previous month:**		
Record natural gas usage for **Boiler 2** from monitor here =	19367.99	kscf
Record fuel oil usage for Boiler 2 from monitor here =		gallons
STEP 3) **For fuel usage total for previous month:**		
Record natural gas usage for **Boiler 4** from monitor here =		kscf
Record fuel oil usage for Boiler 4 from monitor here =		gallons
STEP 4) **For fuel usage total for previous month:**		
Record natural gas usage for **Boiler 3** from meter here =	203599	ccf
enter nat gas meter reading from end of **previous month** here=	176737	ccf
This is the natural gas usage for the month	26862	ccf

STEP 5) Save electronic copy of this template by month (example "aug 2012 boiler fuel use)
STEP 6) Print out hard copy and give to Larry J. at end of each month

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
EUCLVBOILER	Boiler 3	16.3		26,862		
FGBoilers	Boiler 1, 2, 4	86.4 ea		309,537		0

Notes:
Boiler 1,2,4 monitors read out gas usage in kscf or thousand standard cubic feet
so 1 kscf = 1,000 cubic feet (assuming temp and pressure same)
the main tracking form is set up for units of hundreds cubic feet or ccf (boiler 3's meter reads out in ccf)
1,000 cubic feet of natural gas = 10 ccf (10 x 100= 1,000)
this template does these conversions - operators need only enter values as indicated in steps 1-4

HFHS

Boiler ID	MDEQ Boiler ID	size (mmBtu.hr)
1	EUBOILER4	86.4
2	EUBOILER5	86.4
3	EUCLVBOILER	16.3
4	EUBOILER6	86.4

Input data

Month Mar-13

UST Oil tank deliveries	gallons
Ultra low sulfur Diesel Fuel	0
Heating Oil	0

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
	WCSB Boiler 1	33.8		0		
	WCSB Boiler 2	33.8		0		
Boiler1	Cleaver Brooks boiler	16.3		36,107		
FGBoilers	Nebraska 1-3	86.4 ea		290,011		0

MDEQ ID	Engine ID	Size, kw	hour meter reading	hours used	hours used, readiness checks	Fuel delivered, y/n
Engine1	Peak Shaver 1	500		0		n
Engine2	Peak Shaver 2	500		0		n
Engine3	Peak Shaver 3	500		0		n
Engine10	Clinic Outside, 4	750	2,226.9	3.3	3.3	n
	E & R Outside, 5	150	9,803.7	3.2		n
	West Clinic, 6	620	1,689	4.5		n
	West Clinic, 7	620	1,697	4		n
355-98	W Pavilion, 8	1,500	853	4		n
307-99	B-Unit, 9	300	778	3		n
Engine9	EP Cath Lab Outside, 10	1,600	6,414	4	4	n
Engine11	IPD outside, 11	900	4,560.1	3.7	3.7	n
Engine12	Boiler plant, 12	2,000	239.4	3.2	3.2	n

Describe any malfunctions or upsets

ETO Sterilizers	Runs/month	Daily records available, y/n
Sterilizer1	31	y
Sterilizer2	Removed	NA

I have reviewed this input information and certify that based on information and belief formed after reasonable inquiry, the input information is true, accurate and complete.

Signed: [signature] Date: 4/3/13

Password Comment:

	A	B	C	D	E	F	G	H
1	**Month**	**Mar-13**						
2	**Factors**						**unit**	
3								
4		**UST Oil tank deliveries**						
5		Ultra Low Sulfur Diesel		15	ppm S			
6		Heating Oil		5000	ppm S			
7		Diesel oil characteristics		128750	btu/gal	7.5	lbs/gal	
8	**MDEQ ID**	**Boilers**	**Size, MMBTU /hr**	**Oil firing lbs Nox**	**lbs SO2**	**Gas Firing, lbs Nox**	**unit**	
9		WCSB Boiler 1	33.8	0.4		0.12	per MMBTU	
10		WCSB Boiler 2	33.8	0.4		0.12	per MMBTU	
11	Boiler1	Cleaver Brooks boiler	16.3			0.1	per MMBTU	
12	FGBoilers	Nebraska 1-3,	86.4 ea	0.107		0.039	per MMBTU	
13								
14	**MDEQ ID**	**Engine ID**	**Size, kw**					
15	Engine1	Peak Shaver 1	500	18			per hour	
16	Engine2	Peak Shaver 2	500	18			per hour	
17	Engine3	Peak Shaver 3	500	18			per hour	
18	Engine10	Clinic Outside, 4	750	20			per hour	
19		E & R Outside, 5	150	3.2			per hour	
20		West Clinic, 6	620	16			per hour	
21		West Clinic, 7	620	16			per hour	
22	355-98	W Pavilion, 8	1,500	66.3			per hour	
23	307-99	B-Unit, 9	300	13.8			per hour	
24	Engine9	EP Cath Lab Outside, 10	1,600	35			per hour	
25	Engine11	IPD outside, 11	900	22.5			per hour	
26	Engine12a	Boiler plant, 12	2,000	45.7			per hour	
27	Engine 12a			36			per hour	
28	Engine 12b			36			per hour	
29	Engine 14			36			per hour	
30								
31	**ETO Sterilizers**			ETO emissions				
32	Sterilizer1	100 gms/run and 99% efficiency		0.0002203	lbs/run			
33	Sterilizer2			0.0002203	lbs/run			

Month: Mar-13

		Ultra Low Diesel	Fuel Oil			
	Oil Deliveries, gallons	0	0			
MDEQ ID	Boilers	Size, MMBTU /hr	lbs Nox/ month	lbs SO2/mo	cf NG/ month	gal oil/ month
	WCSB Boiler 1	33.8	0	0	0	0
	WCSB Boiler 2	33.8	0	0	0	0
Boiler1	Cleaver Brooks boiler	16.3	361		3,610,700	
FGBoilers	Nebraska 1-3	86.4 ea	1,131	0	29,001,100	0

MDEQ ID	Engine ID	Size, kw	lbs Nox/ Month	Sulfur Content %	readiness hours	total hours	Compliance status-hrs
Engine1	Peak Shaver 1	500	0			0	ok
Engine2	Peak Shaver 2	500	0			0	ok
Engine3	Peak Shaver 3	500	0			0	ok
Engine10	Clinic Outside, 4	750	66		3	3	ok
Exempt	E & R Outside, 5	150	10			3	ok
Exempt	West Clinic, 6	620	72			5	ok
Exempt	West Clinic, 7	620	64			4	ok
355-98	W Pavilion, 8	1,500	265	0.0000		4	ok
307-99	B-Unit, 9	300	41	0.0000		3	ok
Engine9	EP Cath Lab Outside, 10	1,600	140		4	4	ok
Engine11	IPD outside, 11	900	83		4	4	ok
Engine12a	Boiler plant 12	2,000	146		3	3	ok
Engine 12b		2,000					ok
Engine 14		2,000					ok

Permit ID	Permit Status Comparison		Calculated level	Level of Concern	Compliance Status
ETO General Permit	Sterilizer 1	Pounds ETO/mo	0.007	0.140	ok
287-01	Cleaver Brooks Boiler	Tons Nox/mo	0.18	0.58	ok
		MMCF/mo	3.6	11.9	ok
		Natural gas only	yes		ok
186-06B	FG Engines	Tons Nox/mo	0.145	3.400	ok
		Max. test hours	4.0	8.0	ok
		Total Hours	14.2	150.0	ok
186-06B	FG Boilers	Tons Nox/mo	0.57	2.90	ok
		MMCF NG/mo	29	126	ok
		oil used gal/mo	0	102,833	ok
202-02	Peak Shavers	Tons Nox/mo	0.00	1.125	ok
		hours/mo	0	125	ok
355-98	West Pavillion 10	Tons Nox/mo	0.13	1.39	ok
		Hours/mo	4	41	ok
		gal fuel/mo	640	4,875	ok
307-99	B Wing 9	tons Nox/mo	0.021	0.290	ok
		tons SO2/mo	0.00000	0.02000	ok
		hours/mo	3	41	ok
186-06B-III.1	Fuel Oil Deliveries	Sulfur Content, %	0.0000	0.030	ok
	FG Facility	Tons Nox/mo	1	7	Info only

Month / Year Mar-13

BOILER ROOM OPERATOR'S AIR PERMIT TRACKING FORM

PURPOSE: THE HOSPITAL'S AIR PERMIT WITH EPA HAS REQUIREMENTS TO TRACK BOILER FUEL USE (NAT GAS AND OIL) MONTHLY

At the end of the last day of the month, take readings from boiler monitors or meters as described below

		units
STEP 1) **For fuel usage total for previous month:**		
Record natural gas usage for **Boiler 1** from monitor here =	23198.67	kscf
Record fuel oil usage for Boiler 1 from monitor here =	0	gallons
STEP 2) **For fuel usage total for previous month:**		
Record natural gas usage for **Boiler 2** from monitor here =	5802.4	kscf
Record fuel oil usage for Boiler 2 from monitor here =	0	gallons
STEP 3) **For fuel usage total for previous month:**		
Record natural gas usage for **Boiler 4** from monitor here =	0	kscf
Record fuel oil usage for Boiler 4 from monitor here =	0	gallons
STEP 4) **For fuel usage total for previous month:**		
Record natural gas usage for **Boiler 3** from meter here =	239706	ccf
enter nat gas meter reading from end of **previous month** here=	203599	ccf
This is the natural gas usage for the month	36107	ccf

STEP 5) Save electronic copy of this template by month (example "aug 2012 boiler fuel use)
STEP 6) Print out hard copy and give to Larry J. at end of each month

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
EUCLVBOILER	Boiler 3	16.3		36,107		
FGBoilers	Boiler 1, 2, 4	86.4 ea		290,011		0

Notes:
Boiler 1,2,4 monitors read out gas usage in kscf or thousand standard cubic feet
so 1 kscf = 1,000 cubic feet (assuming temp and pressure same)
the main tracking form is set up for units of hundreds cubic feet or ccf (boiler 3's meter reads out in ccf)
1,000 cubic feet of natural gas = 10 ccf (10 x 100= 1,000)
this template does these conversions - operators need only enter values as indicated in steps 1-4

HFHS

Boiler ID	MDEQ Boiler ID	size (mmBtu.hr)
1	EUBOILER4	86.4
2	EUBOILER5	86.4
3	EUCLVBOILER	16.3
4	EUBOILER6	86.4

Input data

Month: April 2013

UST Oil tank deliveries	gallons
Ultra low sulfur Diesel Fuel	0
Heating Oil	0

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
	WCSB Boiler 1	33.8		0		
	WCSB Boiler 2	33.8		0		
Boiler1	Cleaver Brooks boiler	16.3		0		
FGBoilers	Nebraska 1-3	86.4 ea		113,992		0

MDEQ ID	Engine ID	Size, kw	hour meter reading	hours used	hours used, readiness checks	Fuel delivered, y/n
Engine1	Peak Shaver 1	500		0		n
Engine2	Peak Shaver 2	500		0		n
Engine3	Peak Shaver 3	500		0		n
Engine10	Clinic Outside, 4	750	2,230.0	3.1	3.1	n
	E & R Outside, 5	150	9,806.0	2.3		n
	West Clinic, 6	620	1,692	3.5		n
	West Clinic, 7	620	1,702	5		n
355-98	W Pavilion, 8	1,500	856	3		n
307-99	B-Unit, 9	300	781	3		n
Engine9	EP Cath Lab Outside, 10	1,600	6,417	3	3	n
Engine11	IPD outside, 11	900	4,563.5	3.4	3.4	n
Engine12	Boiler plant, 12	2,000	244.5	5.1	5.1	n

Describe any malfunctions or upsets

ETO Sterilizers	Runs/month	Daily records available, y/n
Sterilizer1	30	y
Sterilizer2	Removed	NA

I have reviewed this input information and certify that based on information and belief formed after reasonable inquiry, the input information is true, accurate and complete.

Signed: [signature] Date: 5/6/13

Password Comment:

	A	B	C	D	E	F	G	H
1	**Month**	**Jan-00**						
2	**Factors**						**unit**	
3								
4		**UST Oil tank deliveries**						
5		Ultra Low Sulfur Diesel		15	ppm S			
6		Heating Oil		5000	ppm S			
7		Diesel oil characteristics		128750	btu/gal	7.5	lbs/gal	
8	**MDEQ ID**	**Boilers**	**Size, MMBTU /hr**	**Oil firing lbs Nox**	**lbs SO2**	**Gas Firing, lbs Nox**	**unit**	
9		WCSB Boiler 1	33.8	0.4		0.12	per MMBTU	
10		WCSB Boiler 2	33.8	0.4		0.12	per MMBTU	
11	Boiler1	Cleaver Brooks boiler	16.3			0.1	per MMBTU	
12	FGBoilers	Nebraska 1-3,	86.4 ea	0.107		0.039	per MMBTU	
13								
14	**MDEQ ID**	**Engine ID**	**Size, kw**					
15	Engine1	Peak Shaver 1	500	18			per hour	
16	Engine2	Peak Shaver 2	500	18			per hour	
17	Engine3	Peak Shaver 3	500	18			per hour	
18	Engine10	Clinic Outside, 4	750	20			per hour	
19		E & R Outside, 5	150	3.2			per hour	
20		West Clinic, 6	620	16			per hour	
21		West Clinic, 7	620	16			per hour	
22	355-98	W Pavilion, 8	1,500	66.3			per hour	
23	307-99	B-Unit, 9	300	13.8			per hour	
24	Engine9	EP Cath Lab Outside, 10	1,600	35			per hour	
25	Engine11	IPD outside, 11	900	22.5			per hour	
26	Engine12a	Boiler plant, 12	2,000	45.7			per hour	
27	Engine 12a			36			per hour	
28	Engine 12b			36			per hour	
29	Engine 14			36			per hour	
30								
31	**ETO Sterilizers**			ETO emissions				
32	Sterilizer1	100 gms/run and 99% efficiency		0.0002203	lbs/run			
33	Sterilizer2			0.0002203	lbs/run			

Month: Jan-00

		Ultra Low Diesel	Fuel Oil			
	Oil Deliveries, gallons	0	0			
MDEQ ID	Boilers	Size, MMBTU /hr	lbs Nox/ month	lbs SO2/mo	cf NG/ month	gal oil/ month
	WCSB Boiler 1	33.8	0	0	0	0
	WCSB Boiler 2	33.8	0	0	0	0
Boiler1	Cleaver Brooks boiler	16.3	0		0	
FGBoilers	Nebraska 1-3	86.4 ea	445	0	11,399,200	0

MDEQ ID	Engine ID	Size, kw	lbs Nox/ Month	Sulfur Content %	readiness hours	total hours	Compliance status-hrs
Engine1	Peak Shaver 1	500	0			0	ok
Engine2	Peak Shaver 2	500	0			0	ok
Engine3	Peak Shaver 3	500	0			0	ok
Engine10	Clinic Outside, 4	750	62		3	3	ok
Exempt	E & R Outside, 5	150	7			2	ok
Exempt	West Clinic, 6	620	56			4	ok
Exempt	West Clinic, 7	620	80			5	ok
355-98	W Pavilion, 8	1,500	199	0.0000		3	ok
307-99	B-Unit, 9	300	41	0.0000		3	ok
Engine9	EP Cath Lab Outside, 10	1,600	105		3	3	ok
Engine11	IPD outside, 11	900	77		3	3	ok
Engine12a	Boiler plant 12	2,000	233		5	5	ok
Engine 12b		2,000					ok
Engine 14		2,000					ok

Permit ID	Permit Status Comparison		Calculated level	Level of Concern	Compliance Status
ETO General Permit	Sterilizer 1	Pounds ETO/mo	0.007	0.140	ok
287-01	Cleaver Brooks Boiler	Tons Nox/mo	0.00	0.58	ok
		MMCF/mo	0.0	11.9	ok
		Natural gas only	yes		ok
186-06B	FG Engines	Tons Nox/mo	0.122	3.400	ok
		Max. test hours	5.1	8.0	ok
		Total Hours	14.6	150.0	ok
186-06B	FG Boilers	Tons Nox/mo	0.22	2.90	ok
		MMCF NG/mo	11	126	ok
		oil used gal/mo	0	102,833	ok
202-02	Peak Shavers	Tons Nox/mo	0.00	1.125	ok
		hours/mo	0	125	ok
355-98	West Pavillion 10	Tons Nox/mo	0.10	1.39	ok
		Hours/mo	3	41	ok
		gal fuel/mo	480	4,875	ok
307-99	B Wing 9	tons Nox/mo	0.021	0.290	ok
		tons SO2/mo	0.00000	0.02000	ok
		hours/mo	3	41	ok
186-06B-III.1	Fuel Oil Deliveries	Sulfur Content, %	0.0000	0.030	ok
	FG Facility	Tons Nox/mo	1	7	Info only

Month / Year April 2013

BOILER ROOM OPERATOR'S AIR PERMIT TRACKING FORM

PURPOSE: THE HOSPITAL'S AIR PERMIT WITH EPA HAS REQUIREMENTS TO TRACK BOILER FUEL USE (NAT GAS AND OIL) MONTHLY

At the end of the last day of the month, take readings from boiler monitors or meters as described below

		units
STEP 1) **For fuel usage total for previous month:**		
Record natural gas usage for **Boiler 1** from monitor here =	2715.85	kscf
Record fuel oil usage for Boiler 1 from monitor here =	0	gallons
STEP 2) **For fuel usage total for previous month:**		
Record natural gas usage for **Boiler 2** from monitor here =	7069.78	kscf
Record fuel oil usage for Boiler 2 from monitor here =	0	gallons
STEP 3) **For fuel usage total for previous month:**		
Record natural gas usage for **Boiler 4** from monitor here =	1613.54	kscf
Record fuel oil usage for Boiler 4 from monitor here =	0	gallons
STEP 4) **For fuel usage total for previous month:**		
Record natural gas usage for **Boiler 3** from meter here =		ccf
enter nat gas meter reading from end of **previous month** here=		ccf
This is the natural gas usage for the month	0	ccf

STEP 5) Save electronic copy of this template by month (example "aug 2012 boiler fuel use)
STEP 6) Print out hard copy and give to Larry J. at end of each month

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
EUCLVBOILER	Boiler 3	16.3		0		
FGBoilers	Boiler 1, 2, 4	86.4 ea		113,992		0

Notes:
Boiler 1,2,4 monitors read out gas usage in kscf or thousand standard cubic feet
so 1 kscf = 1,000 cubic feet (assuming temp and pressure same)
the main tracking form is set up for units of hundreds cubic feet or ccf (boiler 3's meter reads out in ccf)
1,000 cubic feet of natural gas = 10 ccf (10 x 100= 1,000)
this template does these conversions - operators need only enter values as indicated in steps 1-4

HFHS

Boiler ID	MDEQ Boiler ID	size (mmBtu.hr)
1	EUBOILER4	86.4
2	EUBOILER5	86.4
3	EUCLVBOILER	16.3
4	EUBOILER6	86.4

Input data

Month May-13

UST Oil tank deliveries	gallons
Ultra low sulfur Diesel Fuel	0
Heating Oil	0

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
	WCSB Boiler 1	33.8		0		0
	WCSB Boiler 2	33.8		0		0
Boiler1	Cleaver Brooks boiler	16.3		0		
FGBoilers	Nebraska 1-3	86.4 ea	16,698,525	240,395		0

MDEQ ID	Engine ID	Size, kw	hour meter reading	hours used	hours used, readiness checks	Fuel delivered, y/n
Engine1	Peak Shaver 1	500		0		n
Engine2	Peak Shaver 2	500		0		n
Engine3	Peak Shaver 3	500		0		n
Engine10	Clinic Outside, 4	750	2,231.4	1.4	1.4	n
	E & R Outside, 5	150	9,808.1	2.1		n
	West Clinic, 6	620	1,699	7		n
	West Clinic, 7	620	1,708	6		n
355-98	W Pavilion, 8	1,500	858	2		n
307-99	B-Unit, 9	300	782	1		n
Engine9	EP Cath Lab Outside, 10	1,600	6,418	1	1	n
Engine11	IPD outside, 11	900	4,564.3	0.8	0.8	n
Engine12	Boiler plant, 12	2,000	245.0	1.5	1.5	n

Describe any malfunctions or upsets

ETO Sterilizers	Runs/month	Daily records available, y/n
Sterilizer1	31	y
Sterilizer2	Removed	NA

I have reviewed this input information and certify that based on information and belief formed after reasonable inquiry, the input information is true, accurate and complete.

Signed: [signature] Date: 6/11/13

Password Comment:

	A	B	C	D	E	F	G	H
1	**Month**	**May-13**						
2	**Factors**						**unit**	
3								
4		**UST Oil tank deliveries**						
5		Ultra Low Sulfur Diesel		15	ppm S			
6		Heating Oil		5000	ppm S			
7		Diesel oil characteristics		128750	btu/gal	7.5	lbs/gal	
8	**MDEQ ID**	**Boilers**	**Size, MMBTU /hr**	**Oil firing lbs Nox**	**lbs SO2**	**Gas Firing, lbs Nox**	**unit**	
9		WCSB Boiler 1	33.8	0.4		0.12	per MMBTU	
10		WCSB Boiler 2	33.8	0.4		0.12	per MMBTU	
11	Boiler1	Cleaver Brooks boiler	16.3			0.1	per MMBTU	
12	FGBoilers	Nebraska 1-3,	86.4 ea	0.107		0.039	per MMBTU	
13								
14	**MDEQ ID**	**Engine ID**	**Size, kw**					
15	Engine1	Peak Shaver 1	500	18			per hour	
16	Engine2	Peak Shaver 2	500	18			per hour	
17	Engine3	Peak Shaver 3	500	18			per hour	
18	Engine10	Clinic Outside, 4	750	20			per hour	
19		E & R Outside, 5	150	3.2			per hour	
20		West Clinic, 6	620	16			per hour	
21		West Clinic, 7	620	16			per hour	
22	355-98	W Pavilion, 8	1,500	66.3			per hour	
23	307-99	B-Unit, 9	300	13.8			per hour	
24	Engine9	EP Cath Lab Outside, 10	1,600	35			per hour	
25	Engine11	IPD outside, 11	900	22.5			per hour	
26	Engine12a	Boiler plant, 12	2,000	45.7			per hour	
27	Engine 12a			36			per hour	
28	Engine 12b			36			per hour	
29	Engine 14			36			per hour	
30								
31	**ETO Sterilizers**			ETO emissions				
32	Sterilizer1	100 gms/run and 99% efficiency		0.0002203	lbs/run			
33	Sterilizer2			0.0002203	lbs/run			

Month: May-13

		Ultra Low Diesel	Fuel Oil			
	Oil Deliveries, gallons	0	0			
MDEQ ID	Boilers	Size, MMBTU /hr	lbs Nox/ month	lbs SO2/mo	cf NG/ month	gal oil/ month
	WCSB Boiler 1	33.8	0	0	0	0
	WCSB Boiler 2	33.8	0	0	0	0
Boiler1	Cleaver Brooks boiler	16.3	0		0	
FGBoilers	Nebraska 1-3	86.4 ea	938	0	24,039,500	0

MDEQ ID	Engine ID	Size, kw	lbs Nox/ Month	Sulfur Content %	readiness hours	total hours	Compliance status-hrs
Engine1	Peak Shaver 1	500	0			0	ok
Engine2	Peak Shaver 2	500	0			0	ok
Engine3	Peak Shaver 3	500	0			0	ok
Engine10	Clinic Outside, 4	750	28		1	1	ok
Exempt	E & R Outside, 5	150	7			2	ok
Exempt	West Clinic, 6	620	112			7	ok
Exempt	West Clinic, 7	620	96			6	ok
355-98	W Pavilion, 8	1,500	133	0.0000		2	ok
307-99	B-Unit, 9	300	14	0.0000		1	ok
Engine9	EP Cath Lab Outside, 10	1,600	35		1	1	ok
Engine11	IPD outside, 11	900	18		1	1	ok
Engine12a	Boiler plant 12	2,000	69		2	2	ok
Engine 12b		2,000					ok
Engine 14		2,000					ok

Permit ID	Permit Status Comparison		Calculated level	Level of Concern	Compliance Status
ETO General Permit	Sterilizer 1	Pounds ETO/mo	0.007	0.140	ok
287-01	Cleaver Brooks Boiler	Tons Nox/mo	0.00	0.58	ok
		MMCF/mo	0.0	11.9	ok
		Natural gas only	yes		ok
186-06B	FG Engines	Tons Nox/mo	0.041	3.400	ok
		Max. test hours	1.5	8.0	ok
		Total Hours	4.7	150.0	ok
186-06B	FG Boilers	Tons Nox/mo	0.47	2.90	ok
		MMCF NG/mo	24	126	ok
		oil used gal/mo	0	102,833	ok
202-02	Peak Shavers	Tons Nox/mo	0.00	1.125	ok
		hours/mo	0	125	ok
355-98	West Pavillion 10	Tons Nox/mo	0.07	1.39	ok
		Hours/mo	2	41	ok
		gal fuel/mo	320	4,875	ok
307-99	B Wing 9	tons Nox/mo	0.007	0.290	ok
		tons SO2/mo	0.00000	0.02000	ok
		hours/mo	1	41	ok
186-06B-III.1	Fuel Oil Deliveries	Sulfur Content, %	0.0000	0.030	ok
	FG Facility	Tons Nox/mo	1	7	Info only

Input data

Month: Jun-13

UST Oil tank deliveries	gallons
Ultra low sulfur Diesel Fuel	0
Heating Oil	0

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
	WCSB Boiler 1	33.8		0		
	WCSB Boiler 2	33.8		0		
Boiler1	Cleaver Brooks boiler	16.3		0		
FGBoilers	Nebraska 1-3	86.4 ea		103,002		

MDEQ ID	Engine ID	Size, kw	hour meter reading	hours used	hours used, readiness checks	Fuel delivered, y/n
Engine1	Peak Shaver 1	500		0		n
Engine2	Peak Shaver 2	500		0		n
Engine3	Peak Shaver 3	500		0		n
Engine10	Clinic Outside, 4	750	2,234.0	2.6	2.6	n
	E & R Outside, 5	150	9,801.0	2.5		n
	West Clinic, 6	620	1,699	0		n
	West Clinic, 7	620	1,709	0		n
355-98	W Pavilion, 8	1,500	861	3		n
307-99	B-Unit, 9	300	785	3		n
Engine9	EP Cath Lab Outside, 10	1,600	6,423	5	5	n
Engine11	IPD outside, 11	900	4,566.9	2.6	2.6	n
Engine12	Boiler plant, 12	2,000	249.4	4.4	4.4	n

Describe any malfunctions or upsets

ETO Sterilizers	Runs/month	Daily records available, y/n
Sterilizer1	30	y
Sterilizer2	Removed	NA

I have reviewed this input information and certify that based on information and belief formed after reasonable inquiry, the input information is true, accurate and complete.

Signed: [signature] Date: 7/9/13

Password Comment:

	A	B	C	D	E	F	G	H
1	**Month**	**Jun-13**						
2	**Factors**						**unit**	
3								
4		**UST Oil tank deliveries**						
5		Ultra Low Sulfur Diesel		15	ppm S			
6		Heating Oil		5000	ppm S			
7		Diesel oil characteristics		128750	btu/gal	7.5	lbs/gal	
8	**MDEQ ID**	**Boilers**	**Size, MMBTU /hr**	**Oil firing lbs Nox**	**lbs SO2**	**Gas Firing, lbs Nox**	**unit**	
9		WCSB Boiler 1	33.8	0.4		0.12	per MMBTU	
10		WCSB Boiler 2	33.8	0.4		0.12	per MMBTU	
11	Boiler1	Cleaver Brooks boiler	16.3			0.1	per MMBTU	
12	FGBoilers	Nebraska 1-3,	86.4 ea	0.107		0.039	per MMBTU	
13								
14	**MDEQ ID**	**Engine ID**	**Size, kw**					
15	Engine1	Peak Shaver 1	500	18			per hour	
16	Engine2	Peak Shaver 2	500	18			per hour	
17	Engine3	Peak Shaver 3	500	18			per hour	
18	Engine10	Clinic Outside, 4	750	20			per hour	
19		E & R Outside, 5	150	3.2			per hour	
20		West Clinic, 6	620	16			per hour	
21		West Clinic, 7	620	16			per hour	
22	355-98	W Pavilion, 8	1,500	66.3			per hour	
23	307-99	B-Unit, 9	300	13.8			per hour	
24	Engine9	EP Cath Lab Outside, 10	1,600	35			per hour	
25	Engine11	IPD outside, 11	900	22.5			per hour	
26	Engine12a	Boiler plant, 12	2,000	45.7			per hour	
27	Engine 12a			36			per hour	
28	Engine 12b			36			per hour	
29	Engine 14			36			per hour	
30								
31	**ETO Sterilizers**			ETO emissions				
32	Sterilizer1	100 gms/run and 99% efficiency		0.0002203	lbs/run			
33	Sterilizer2			0.0002203	lbs/run			

Month: Jun-13

		Ultra Low Diesel	Fuel Oil			
	Oil Deliveries, gallons	0	0			
MDEQ ID	Boilers	Size, MMBTU /hr	lbs Nox/ month	lbs SO2/mo	cf NG/ month	gal oil/ month
	WCSB Boiler 1	33.8	0	0	0	0
	WCSB Boiler 2	33.8	0	0	0	0
Boiler1	Cleaver Brooks boiler	16.3	0		0	
FGBoilers	Nebraska 1-3	86.4 ea	402	0	10,300,200	0

MDEQ ID	Engine ID	Size, kw	lbs Nox/ Month	Sulfur Content %	readiness hours	total hours	Compliance status-hrs
Engine1	Peak Shaver 1	500	0			0	ok
Engine2	Peak Shaver 2	500	0			0	ok
Engine3	Peak Shaver 3	500	0			0	ok
Engine10	Clinic Outside, 4	750	52		3	3	ok
Exempt	E & R Outside, 5	150	8			3	ok
Exempt	West Clinic, 6	620	0			0	ok
Exempt	West Clinic, 7	620	0			0	ok
355-98	W Pavilion, 8	1,500	199	0.0000		3	ok
307-99	B-Unit, 9	300	41	0.0000		3	ok
Engine9	EP Cath Lab Outside, 10	1,600	175		5	5	ok
Engine11	IPD outside, 11	900	59		3	3	ok
Engine12a	Boiler plant 12	2,000	201		4	4	ok
Engine 12b		2,000					ok
Engine 14		2,000					ok

Permit ID	Permit Status Comparison		Calculated level	Level of Concern	Compliance Status
ETO General Permit	Sterilizer 1	Pounds ETO/mo	0.007	0.140	ok
287-01	Cleaver Brooks Boiler	Tons Nox/mo	0.00	0.58	ok
		MMCF/mo	0.0	11.9	ok
		Natural gas only	yes		ok
186-06B	FG Engines	Tons Nox/mo	0.143	3.400	ok
		Max. test hours	5.0	8.0	ok
		Total Hours	14.6	150.0	ok
186-06B	FG Boilers	Tons Nox/mo	0.20	2.90	ok
		MMCF NG/mo	10	126	ok
		oil used gal/mo	0	102,833	ok
202-02	Peak Shavers	Tons Nox/mo	0.00	1.125	ok
		hours/mo	0	125	ok
355-98	West Pavillion 10	Tons Nox/mo	0.10	1.39	ok
		Hours/mo	3	41	ok
		gal fuel/mo	480	4,875	ok
307-99	B Wing 9	tons Nox/mo	0.021	0.290	ok
		tons SO2/mo	0.00000	0.02000	ok
		hours/mo	3	41	ok
186-06B-III.1	Fuel Oil Deliveries	Sulfur Content, %	0.0000	0.030	ok
	FG Facility	Tons Nox/mo	1	7	Info only

Input data

Month Jul-13

UST Oil tank deliveries	gallons
Ultra low sulfur Diesel Fuel	0
Heating Oil	0

MDEQ ID	Boilers	Size, MMBTU /hr	gas meter reading:	gas used, ccf:	oil meter reading:	oil used, gal:
	WCSB Boiler 1	33.8				
	WCSB Boiler 2	33.8				
Boiler1	Cleaver Brooks boiler	16.3				
FGBoilers	Nebraska 1-3	86.4 ea		145,798		

MDEQ ID	Engine ID	Size, kw	hour meter reading	hours used	hours used, readiness checks	Fuel delivered, y/n
Engine1	Peak Shaver 1	500		0		n
Engine2	Peak Shaver 2	500		0		n
Engine3	Peak Shaver 3	500		0		n
Engine10	Clinic Outside, 4	750	2,234.8	0.8	0.8	n
	E & R Outside, 5	150	9,811.2	0.6		n
	West Clinic, 6	620	1,700	1		n
	West Clinic, 7	620	1,709	0.5		n
355-98	W Pavilion, 8	1,500	862	1		n
307-99	B-Unit, 9	300	786	1		n
Engine9	EP Cath Lab Outside, 10	1,600	6,424	1	1	n
Engine11	IPD outside, 11	900	4,567.6	0.7	0.7	n
Engine12	Boiler plant, 12	2,000	250.1	0.7	0.7	n

Describe any malfunctions or upsets

ETO Sterilizers	Runs/month	Daily records available, y/n
Sterilizer1	31	y
Sterilizer2	Removed	NA

I have reviewed this input information and certify that based on information and belief formed after reasonable inquiry, the input information is true, accurate and complete.

Signed: Date:

Password Comment:

	A	B	C	D	E	F	G	H
1	**Month**	**Jul-13**						
2	**Factors**						**unit**	
3								
4		**UST Oil tank deliveries**						
5		Ultra Low Sulfur Diesel		15	ppm S			
6		Heating Oil		5000	ppm S			
7		Diesel oil characteristics		128750	btu/gal	7.5	lbs/gal	
8	**MDEQ ID**	**Boilers**	**Size, MMBTU /hr**	**Oil firing lbs Nox**	**lbs SO2**	**Gas Firing, lbs Nox**	**unit**	
9		WCSB Boiler 1	33.8	0.4		0.12	per MMBTU	
10		WCSB Boiler 2	33.8	0.4		0.12	per MMBTU	
11	Boiler1	Cleaver Brooks boiler	16.3			0.1	per MMBTU	
12	FGBoilers	Nebraska 1-3,	86.4 ea	0.107		0.039	per MMBTU	
13								
14	**MDEQ ID**	**Engine ID**	**Size, kw**					
15	Engine1	Peak Shaver 1	500	18			per hour	
16	Engine2	Peak Shaver 2	500	18			per hour	
17	Engine3	Peak Shaver 3	500	18			per hour	
18	Engine10	Clinic Outside, 4	750	20			per hour	
19		E & R Outside, 5	150	3.2			per hour	
20		West Clinic, 6	620	16			per hour	
21		West Clinic, 7	620	16			per hour	
22	355-98	W Pavilion, 8	1,500	66.3			per hour	
23	307-99	B-Unit, 9	300	13.8			per hour	
24	Engine9	EP Cath Lab Outside, 10	1,600	35			per hour	
25	Engine11	IPD outside, 11	900	22.5			per hour	
26	Engine12a	Boiler plant, 12	2,000	45.7			per hour	
27	Engine 12a			36			per hour	
28	Engine 12b			36			per hour	
29	Engine 14			36			per hour	
30								
31	**ETO Sterilizers**			ETO emissions				
32	Sterilizer1	100 gms/run and 99% efficiency		0.0002203	lbs/run			
33	Sterilizer2			0.0002203	lbs/run			

Month: Jul-13

		Ultra Low Diesel	Fuel Oil			
	Oil Deliveries, gallons	0	0			
MDEQ ID	Boilers	Size, MMBTU /hr	lbs Nox/ month	lbs SO2/mo	cf NG/ month	gal oil/ month
	WCSB Boiler 1	33.8	0	0	0	0
	WCSB Boiler 2	33.8	0	0	0	0
Boiler1	Cleaver Brooks boiler	16.3	0		0	
FGBoilers	Nebraska 1-3	86.4 ea	569	0	14,579,800	0

MDEQ ID	Engine ID	Size, kw	lbs Nox/ Month	Sulfur Content %	readiness hours	total hours	Compliance status-hrs
Engine1	Peak Shaver 1	500	0			0	ok
Engine2	Peak Shaver 2	500	0			0	ok
Engine3	Peak Shaver 3	500	0			0	ok
Engine10	Clinic Outside, 4	750	16		1	1	ok
Exempt	E & R Outside, 5	150	2			1	ok
Exempt	West Clinic, 6	620	16			1	ok
Exempt	West Clinic, 7	620	8			1	ok
355-98	W Pavilion, 8	1,500	66	0.0000		1	ok
307-99	B-Unit, 9	300	14	0.0000		1	ok
Engine9	EP Cath Lab Outside, 10	1,600	35		1	1	ok
Engine11	IPD outside, 11	900	16		1	1	ok
Engine12a	Boiler plant 12	2,000	32		1	1	ok
Engine 12b		2,000					ok
Engine 14		2,000					ok

Permit ID	Permit Status Comparison		Calculated level	Level of Concern	Compliance Status
ETO General Permit	Sterilizer 1	Pounds ETO/mo	0.007	0.140	ok
287-01	Cleaver Brooks Boiler	Tons Nox/mo	0.00	0.58	ok
		MMCF/mo	0.0	11.9	ok
		Natural gas only	yes		ok
186-06B	FG Engines	Tons Nox/mo	0.033	3.400	ok
		Max. test hours	1.0	8.0	ok
		Total Hours	3.2	150.0	ok
186-06B	FG Boilers	Tons Nox/mo	0.28	2.90	ok
		MMCF NG/mo	15	126	ok
		oil used gal/mo	0	102,833	ok
202-02	Peak Shavers	Tons Nox/mo	0.00	1.125	ok
		hours/mo	0	125	ok
355-98	West Pavillion 10	Tons Nox/mo	0.03	1.39	ok
		Hours/mo	1	41	ok
		gal fuel/mo	160	4,875	ok
307-99	B Wing 9	tons Nox/mo	0.007	0.290	ok
		tons SO2/mo	0.00000	0.02000	ok
		hours/mo	1	41	ok
186-06B-III.1	Fuel Oil Deliveries	Sulfur Content, %	0.0000	0.030	ok
	FG Facility	Tons Nox/mo	0	7	Info only

Photo Documentation: Non-Resettable Meter

Example of Digital Meter

Example of Analogue Meter

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

2006 Model Year Certificate of Conformity

Manufacturer:	**CUMMINS INC.**		
Engine Family:	**6CEXL060.AAD**		
Certificate Number:	**CEX-NRCI-06-39**		
Intended Service Class:	**NR 9 (>560)**		
Fuel Type:	**DIESEL**		
FELs:	NMHC+NOx: **N/A**	NOx: **N/A**	PM: **N/A**
Effective Date:	**12/30/2005**		
Date Issued:	DEC 3 0 2005		

Merrylin Zaw-Mon, Director
Compliance and Innovative Strategies Division
Office of Transportation and Air Quality

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 89, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR Part 89 and produced in the stated model year.

This certificate of conformity covers only those new nonroad compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 89 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 89.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 89.129-96 and 89.506-96 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 89. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void ab initio for other reasons specified in 40 CFR Part 89.

This certificate does not cover nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

HANDS & ASSOCIATES, INC.
500 Griswold, Suite 1650
Detroit, MI 48226
Phone (313)-963-8870
Fax (313) 963-8876

March 12, 2013

COPY

USEPA
Air Compliance Data
Michigan, Air and Radiation Division
77 West Jackson Boulevard
Chicago, IL 60604

RE: Henry Ford Hospital (K1271)
2012 ROP Annual/Semi Annual Compliance Report

Dear Michigan Air and Radiation Division:

On behalf of Henry Ford Hospital, Detroit, please find the following documents:

ROP Compliance Reports
Annual/Semi-Annual Compliance Reports, and supporting Deviation Report

Please feel free to call if you have any questions about this submittal.

Sincerely,
HANDS & ASSOCIATES, INC.

Charles F. Barker

DEQ

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

RENEWABLE OPERATING PERMIT REPORT CERTIFICATION

Authorized by 1994 P.A. 451, as amended. Failure to provide this information may result in civil and/or criminal penalties.

Reports submitted pursuant to R 336.1213 (Rule 213), subrules (3)(c) and/or (4)(c), of Michigan's Renewable Operating Permit (ROP) program must be certified by a responsible official. Additional information regarding the reports and documentation listed below must be kept on file for at least 5 years, as specified in Rule 213(3)(b)(ii), and be made available to the Department of Environmental Quality, Air Quality Division upon request.

Source Name: Henry Ford Hospital — County: Wayne

Source Address: 2799 W. Grand Blvd. — City: Detroit

AQD Source ID (SRN): K1271 — ROP No.: MI-ROP-K1271-2012 — ROP Section No.:

Please check the appropriate box(es):

☒ **Annual Compliance Certification (Pursuant to Rule 213(4)(c))**

Reporting period (provide inclusive dates): From Dec 1, 2012 To Dec 31, 2012

☐ 1. During the entire reporting period, this source was in compliance with **ALL** terms and conditions contained in the ROP, each term and condition of which is identified and included by this reference. The method(s) used to determine compliance is/are the method(s) specified in the ROP.

☒ 2. During the entire reporting period this source was in compliance with all terms and conditions contained in the ROP, each term and condition of which is identified and included by this reference, **EXCEPT** for the deviations identified on the enclosed deviation report(s). The method used to determine compliance for each term and condition is the method specified in the ROP, unless otherwise indicated and described on the enclosed deviation report(s).

☒ **Semi-Annual (or More Frequent) Report Certification (Pursuant to Rule 213(3)(c))**

Reporting period (provide inclusive dates): From July 2012 To Dec 31 2012

☐ 1. During the entire reporting period, **ALL** monitoring and associated recordkeeping requirements in the ROP were met and no deviations from these requirements or any other terms or conditions occurred.

☒ 2. During the entire reporting period, all monitoring and associated recordkeeping requirements in the ROP were met and no deviations from these requirements or any other terms or conditions occurred, **EXCEPT** for the deviations identified on the enclosed deviation report(s).

☐ **Other Report Certification**

Reporting period (provide inclusive dates): From _____ To _____

Additional monitoring reports or other applicable documents required by the ROP are attached as described:

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this report and the supporting enclosures are true, accurate and complete

Dan Murakami	Director Support Services	313-916-2202
Name of Responsible Official (print or type)	Title	Phone Number
[signature]		3/13/2013
Signature of Responsible Official		Date

* Photocopy this form as needed.

EQP 5736 (Rev 11-04)

DEQ

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

RENEWABLE OPERATING PERMIT
DEVIATION REPORT

Authorized by 1994 P.A. 451, as amended. Failure to provide this information may result in civil and/or criminal penalties.

This form may be submitted in conjunction with the Renewable Operating Permit Report Certification form (EQP 5736) to report deviations from all general conditions and special conditions in the Renewable Operating Permit (ROP) for which deviations required to be reported by R 336.1213 (Rule 213) subrule (3)(c) have occurred. Additional information regarding the reports and documentation listed below must be kept on file for at least 5 years, as specified in Rule 213(3)(b)(ii), and be made available to the Department of Environmental Quality, Air Quality Division, upon request. Items 1 - 8 must be completed for all deviations being reported.

Source Name: Henry Ford Hospital — County: Wayne

Source Address: 2799 W. Grand Blvd — City: Detroit

AQD Source ID (SRN): K1271 — ROP No.: MI-ROP-K1271-2012 — ROP Section No.: 1

ROP Section Contact: Dan Murakami — Contact Phone No.: 313-916-2202

Reporting Period (provide inclusive dates): From: Dec 1, 2012 — to: Dec 31, 2012

Report Type: ☒ Annual ☒ Semi Annual ☐ Other (Describe)

1. Group or Source Wide ID	2. Condition No.	3. Date(s) of Occurrence	4. Previously reported? ☐Yes ☒ No If Yes, Date	5. Duration of Deviation
EUENGINE21a	VIII. 1	11/27/12-1/18/13		33 days of ROP

6. Method Used to Determine Compliance Status (if different from method specified in ROP)	7. Description of Deviation
Issue found during modeling study	stack hieght found to be 3.7 feet lower than condition states of 44.9 ft

8. Reason for Deviation and Description of Corrective Action Taken: Stack inadvertently installed 3.7 feet short Stack was raised to proper height imediately upon discovery. Because ROP effective date is Nov 27, 2012, and this is semi-and annual report period, duration stated to be 33 days. No emission limits exceeded, rather we are reporting for completeness.

1. Group or Source Wide ID	2. Condition No.	3. Date(s) of Occurrence	4. Previously reported? ☐Yes ☐ No If Yes, Date	5. Duration of Deviation

6. Method Used to Determine Compliance Status (if different from method specified in ROP)	7. Description of Deviation

8. Reason for Deviation and Description of Corrective Action Taken

1. Group or Source Wide ID	2. Condition No.	3. Date(s) of Occurrence	4. Previously reported? ☐Yes ☐ No If Yes, Date	5. Duration of Deviation

6. Method Used to Determine Compliance Status (if different from method specified in ROP)	7. Description of Deviation

8. Reason for Deviation and Description of Corrective Action Taken

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

USEPA
Air Compliance Data
Michigan, Air & Radiation Div.
77 West Jackson Blvd.
Chicago, IL 60604

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery
3-18-13

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7012 2920 0001 6983 5539

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

COMPLETE THIS SECTION

items 1, 2, and 3. Also complete
estricted Delivery is desired.
name and address on the reverse
can return the card to you.
card to the back of the mailpiece,
ront if space permits.

essed to:
ilhemia McLemore
R - Detroit Dstrct
ality Div (MAERS)
ce Place Suite 2-300
West Grand Blvd.
MI 48202-6058

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) T Welsh | C. Date of Delivery 3 20 13

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

abel) 7012 2920 0001 6983 5522

y 2004 Domestic Return Receipt 102595-02-M-154(

NEW SOURCE PERFORMANCE STANDARDS (NSPS) FOR STATIONARY COMPRESSION IGNITION INTERNAL COMBUSTION ENGINES

40 CFR PART 60 SUBPART IIII
[§ 60.4200 - 60.4219]

SUMMARY

The United States Environmental Protection Agency (U.S. EPA) New Source Performance Standard (NSPS) Subpart IIII establishes requirements for compression ignition (CI) engines based on the size, type and manufacture date of the engine. This standard will limit the emissions of criteria pollutants, such as nitrogen oxides (NOx), particulate matter (PM), carbon monoxide (CO), and non-methane hydrocarbons (NMHC); and will limit the sulfur in the diesel fuel used to run the stationary diesel compression ignition internal combustion engines (CI ICE).

If you are subject to and in compliance with Subpart IIII, then your requirements under Subpart ZZZZ may be minimal, i.e. submit an initial notification, or they may be exempt. For more information about Subpart ZZZZ please refer to the Michigan Department of Environmental Quality (DEQ) guidance document located at www.michigan.gov/environmentalassistance, and select "Clean Air Assistance" under "Related Links" and then select "RICE" under "Federal Regulations."

The Subpart IIII can be found in the Federal Register notice published July 11, 2006, with proposed amendments published on June 8, 2010. The NSPS can be found at http://www.epa.gov/ttn/atw/nsps/cinsps/fr11jy06.pdf. The notice is published in Title 40, Part 60, 85, et al. Subpart IIII of the Code of Federal Regulations.

The owners and operators of CI ICE are subject to Subpart IIII, if construction commenced (date the engine is ordered by the owner or operator) after July 11, 2005, and the engine is manufactured on or after April 1, 2006, and is not a fire pump; or a modification (a change to any engine that causes an increase in the ability to emit any pollutant regulated under this subpart) or reconstruction (an existing source such that the cost of the new components is greater than 50% of the cost of a comparable new unit) occurred after July 11, 2005; or manufactured as a certified National Fire Protection Association fire pump engine on or before July 1, 2006.

The manufacturers of CI ICE are subject to Subpart IIII, with 2007 and later model year engines with a displacement of less than 30 liters per cylinder and certain model year fire pump engines; and engines manufactured on or after April 1, 2006, that are not fire pump engines, and engines manufactured on or after July 1, 2006, that are fire pump engines are treated as if they were constructed prior to July 11, 2005.

The Subpart IIII does not apply to stationary CI ICE being tested at a stationary CI ICE test cell/stand, and owners/operators and manufacturers may be eligible to request an exemption for reasons associated with national security.

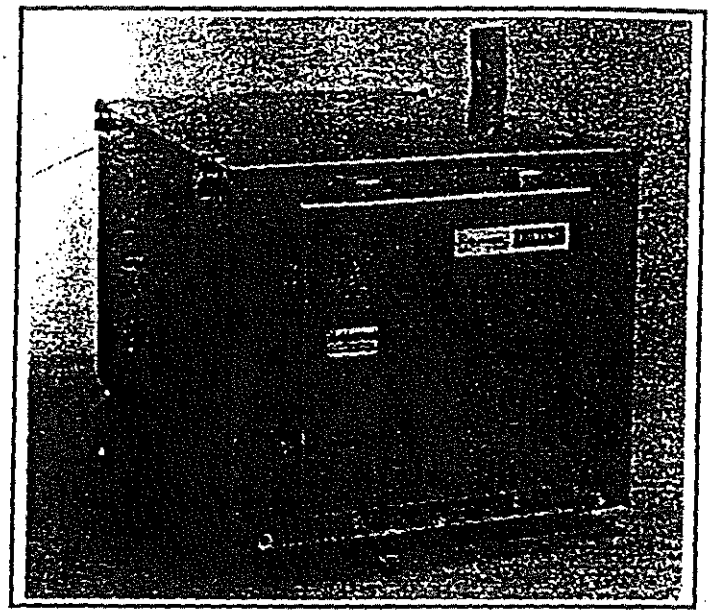
This standard was phased into effect in three, increasingly stringent stages:

1. The first was a transition period to control emissions from diesel engines built after this rule was proposed, but before the 2007 model year. Owners/operators complied with this regulation by purchasing an appropriate engine and by operating and maintaining the engine according to manufacturer's instructions.
2. Beginning in the model year 2007, engine manufactures were required to certify that all new, modified or reconstructed stationary diesel engines meet the stringent emissions levels for NOx, PM, CO, and HC that are required for the same size engine and model year for nonroad diesel engines in the categories known as Tiers 1 through 4, with minor exceptions. Also, stationary emergency diesel engines would be required to be certified to meet emissions limits through Tier 3 and Tier 4; however, Tier 4 requirements do not require add-on controls.
3. Beginning with 2011 model year engines, add-on controls will be required to achieve the emission limits for non-emergency engines.

By 2015, U.S. EPA estimates that 81,500 new stationary diesel engines will be subject to the NSPS Subpart IIII.

AMSCO

50 CFM EO DISPOSER FOR EAGLE® 3017 EO STERILIZER/AERATOR



APPLICATION

The AMSCO 50 cfm EO Disposer is a system intended for external connection to the Eagle 3017 EO sterilizer/aerator. The disposer converts ethylene oxide (EO) gas in the exhaust from the sterilizer/aerator to carbon dioxide and water vapor through a catalytic reaction. Use of a disposer allows ethylene oxide processing where venting EO gas to the atmosphere is undesired or prohibited.

DESCRIPTION

The EO Disposer system uses an exothermic catalytic reaction, a flameless oxidative process, when converting exhausted ethylene oxide gas. The disposer-assembly consists of a catalyst bed, pre-filter, heater and blower enclosed within a carbon steel housing with intake plenum. When properly installed, the system operates at 99.9% efficiency rating at 450°F (232°C).

The complete system consists of the disposer, and an interconnect kit for one or two Eagle 3017 100% EO sterilizer/aerator(s). Once interconnected to the disposer, the Eagle 3017 sterilizer/aerator EO discharge is converted to carbon dioxide and water vapor whenever a sterilization cycle is initiated. A single small aerator can also be interconnected to the disposer, through use of a separately available interconnect kit.

STANDARDS

Every disposer meets the following listings and standards and carries appropriate symbols:

- Canadian Standards Association (CSA) Standard C22.2 No. 125-M1984 (electromedical equipment) and No. 94-M91 (special purpose enclosures).
- Underwriters Laboratory (UL) Standard 544 as certified by ETL Testing Laboratories, Inc.
- Seismic Pre-approval R-0289

The Selections Checked Below Apply to This Equipment

ACCESSORIES

- ☐ Aerator to Disposer Interconnect Kit
- ☐ Seismic Tie-down Kit
- ☐ Air-mixing Valve without Test Ports

OPTION

- ☐ Mandatory Environmental Test *

* *Required for Disposer installation in California.*

falcon → CB - Pedestal support.
Disposer & Sterilizer communicate by micro processor
Sterilizer id Disposer not up to keep ⇒ NO ERR input -
10/31/05 3 90

Item _____

Location(s) _____

CONTROL SYSTEM

The **Disposer control** is integral to the sterilizer interconnect kit. The control system manages the flow of EO discharge into the disposer for conversion.

Disposer operation is indicated by operating lights on the control interface box (usually mounted on or near the sterilizer/aerator), and on the main disposer control panel (which is normally behind a closed access panel, and not visible). Alarms for cycle faults are shown on the Eagle Series 3017 sterilizer/aerator control display and printer.

Disposer operating temperature depends upon the concentration of ethylene oxide in the airstream, the flow rate, heat loss and amount of remaining active catalyst. If an overtemperature condition occurs, the disposer system prevents introduction of additional EO to the catalyst bed until proper operating temperature resumes.

FEATURES

Catalyst is a proprietary, granular material composed of manganese dioxide and copper oxide. The expected life of the catalyst is one to three years, dependent on usage. Spent catalyst must be disposed of according to local, state and federal regulations.

Pre-filter removes particulate matter from the airstream, providing clean air to disposer.

Blower is a single speed, 0.6 HP high pressure radial wheel type, and feeds cooling/dilution air to system at rate of 50-60 scfm.

Heater is a 6 kW electric, finned tube duct assembly (in an insulated housing) and heats both incoming airstream and catalytic bed to an idling temperature of approximately 280°F (138°C) minimum.

The disposer is provided with an outlet port for a **Safety Vent Line**, to carry air exhausted from sterilizer chamber during conditioning phase to roof outlet. Under emergency conditions, this line can carry exhausted EO to atmosphere.

CONSTRUCTION

The disposer's **cabinet** is a NEMA 3 enclosure, constructed from painted carbon steel.

The **catalyst cell** housing is type 304 stainless steel.

MOUNTING ARRANGEMENT

Electricity

All internal wiring within the disposer cabinet has been completed at the factory. Customer is responsible for providing power to the main disconnect located within the disposer cabinet (refer to Utility Requirements).

Exhaust Duct

AMSCO recommends using a positive pressure double-wall duct system for exhaust piping from the disposer. See disposer equipment drawing for details.

The use of an air-mixing valve (sold separately by AMSCO) can allow for an alternative ducting arrangement. In this arrangement, exhausted air is mixed with fresh air to reduce exhaust temperature and create negative air pressure in the exhaust duct. This installation requires the presence of a roof-mounted exhaust fan (not provided by AMSCO), which must provide a minimum air flow of 200 cfm at the air-mixing valve connection. See disposer equipment drawing for exhaust ducting details.

For either arrangement, consult local building codes to confirm appropriate ducting and duct installation requirements.

Piping from the sterilizer to disposer, vent piping from the disposer, and positive-pressure or negative/neutral-pressure exhaust ducting from the disposer are to be supplied by others.

Installation

Disposer meets seismic requirements when properly bolted to building floor or roof.

ACCESSORIES

Aerator to Disposer Interconnect Kit - Requires field installation. One interconnect kit provides connections for one AMSCO aerator.

Seismic Tie-down Kit - Seismic loading and anchorage report; required hardware is by others.

Air-mixing Valve - Exhaust-cooling device for use in alternative ducting arrangements.

PREVENTIVE MAINTENANCE

A coast-to-coast network of skilled service specialists can provide periodic inspections and adjustments to assure low-cost peak performance. AMSCO representatives can provide information regarding the optional Preventive Maintenance Agreement (PMA).

ENGINEERING DATA

Shipping Weight - 435 lbs (197 kg)

Shipping Dimensions (WxHxD) - 39-1/2x34-3/4x50 inches (1003x883x 1270 mm)

Operating Weight - 360 lbs (163 kg)

Heat Loss * - 1500 BTU/hr (1583 kJ/h)

Max. EO Flow Rate - 0.017 lbs/min (7.75 g/min)

Nominal Air Flow - 50-60 cfm (1.7 scmm)

Exhaust Temperature:

- Normal Operation, No EO - 280°F (138°C)
- Overtemp Shutdown - 500°F (260°C)

* *At 70°F (21°C)*

APPENDIX X -- ETHYLENE OXIDE STERILIZERS
EMISSION CALCULATION AND RECORDKEEPING

Permittee (Source Name) ______________________
General Permit to Install Number ____________
MONTH / YEAR ________________

		A	B	C = A x B	D = sum of C for day	E	F = A x E	G = sum of F for day
DATE	Sterilizer ID	Number of Cycles	Pounds EtO used/cycle	Pounds EtO used/sterilizer	Pounds EtO used/day	Pounds HCFC used/cycle	Pounds HCFC used/sterilizer	Pounds HCFC used/day

Note: This form was used to construct the Excel Tracking forms for the ETO sterilizer

TOTAL POUNDS ETO USED/MONTH, H = SUM OF D [ ]

TOTAL POUNDS ETO EMITTED/MONTH, I = H x (1-0.999) [ ]

TOTAL POUNDS HCFC EMITTED/MONTH, J = SUM OF G [ ]

TONS HCFC EMITTED/MONTH, K = L/2000 [ ]

PPH EtO emitted = sum of B for any 1 hour x (1-0.999)
PPH HCFC emitted = sum of E for any 1 hour

Air Permit Recordkeeping Form:

Please submit to Cathy Semer at Environmental Program Management within 5 days after end of Month

Source Name: Henry Ford Hospital

General Permit to Install Number :

Note: 1 canister of ETO = 100 grams
1 gram = .0022 lbs
100 grams = 0.22 lbs
1000 grams = 2.2 lbs

Month/Year Aug-12

Date	A Number of cycles	B Pounds ETO used/cycle	C= AxB Pounds ETO used/cycle	D= sum of C used/day
1		0.22	0	0
2	1	0.22	0.22	0.22
3		0.22	0	0
4	1	0.22	0.22	0.22
5		0.22	0	0
6		0.22	0	0
7	1	0.22	0.22	0.22
8		0.22	0	0
9		0.22	0	0
10		0.22	0	0
11		0.22	0	0
12		0.22	0	0
13		0.22	0	0
14	1	0.22	0.22	0.22
15		0.22	0	0
16		0.22	0	0
17	1	0.22	0.22	0.22
18		0.22	0	0
19	1	0.22	0.22	0.22
20		0.22	0	0
21	1	0.22	0.22	0.22
22	1	0.22	0.22	0.22
23		0.22	0	0
24		0.22	0	0
25	1	0.22	0.22	0.22
26		0.22	0	0
27		0.22	0	0
28		0.22	0	0
29		0.22	0	0
30		0.22	0	0
31		0.22	0	0

Total pounds ETO used/month
H=sum of D = 1.98

Total pounds ETO emitted/month
I= HX(1-0.999) 0.00198

Air Permit Recordkeeping Form:

Please submit to Cathy Semer at Environmental Program Management within 5 days after end of Month

Source Name: Henry Ford Hospital

General Permit to Install Number :

Note: 1 canister of ETO = 100 grams
1 gram = .0022 lbs
100 grams = 0.22 lbs
1000 grams = 2.2 lbs

Month/Year Sep-12

Date	A Number of cycles	B Pounds ETO used/cycle	C= AxB Pounds ETO used/cycle	D= sum of C used/day
1	1	0.22	0.22	0.22
2		0.22	0	0
3		0.22	0	0
4	1	0.22	0.22	0.22
5	1	0.22	0.22	0.22
6		0.22	0	0
7	1	0.22	0.22	0.22
8		0.22	0	0
9		0.22	0	0
10		0.22	0	0
11		0.22	0	0
12	1	0.22	0.22	0.22
13	1	0.22	0.22	0.22
14	1	0.22	0.22	0.22
15		0.22	0	0
16		0.22	0	0
17		0.22	0	0
18		0.22	0	0
19		0.22	0	0
20		0.22	0	0
21		0.22	0	0
22	1	0.22	0.22	0.22
23		0.22	0	0
24		0.22	0	0
25		0.22	0	0
26	1	0.22	0.22	0.22
27		0.22	0	0
28		0.22	0	0
29		0.22	0	0
30		0.22	0	0
31		0.22	0	0

Total pounds ETO used/month
H=sum of D = 1.98

Total pounds ETO emitted/month
I= HX(1-0.999) 0.00198

Air Permit Recordkeeping Form:

Please submit to Cathy Semer at Environmental Program Management within 5 days after end of Month

Source Name: Henry Ford Hospital

General Permit to Install Number :

Note: 1 canister of ETO = 100 grams
1 gram = .0022 lbs
100 grams = 0.22 lbs
1000 grams = 2.2 lbs

Month/Year – Oct 2012

Date	A Number of cycles	B Pounds ETO used/cycle	C= AxB Pounds ETO used/cycle	D= sum of C used/day
1		0.22	0	0
2	1	0.22	0.22	0.22
3		0.22	0	0
4		0.22	0	0
5		0.22	0	0
6		0.22	0	0
7		0.22	0	0
8		0.22	0	0
9	1	0.22	0.22	0.22
10	1	0.22	0.22	0.22
11		0.22	0	0
12	1	0.22	0.22	0.22
13		0.22	0	0
14		0.22	0	0
15		0.22	0	0
16		0.22	0	0
17	1	0.22	0.22	0.22
18		0.22	0	0
19	1	0.22	0.22	0.22
20		0.22	0	0
21		0.22	0	0
22	1	0.22	0.22	0.22
23		0.22	0	0
24	1	0.22	0.22	0.22
25		0.22	0	0
26	1	0.22	0.22	0.22
27		0.22	0	0
28		0.22	0	0
29		0.22	0	0
30	1	0.22	0.22	0.22
31	1	0.22	0.22	0.22

Total pounds ETO used/month
H=sum of D = 2.42

Total pounds ETO emitted/month
I= HX(1-0.999) 0.00242

Air Permit Recordkeeping Form:
Save electronic copy for each month

Please submit to Cathy Semer at Environmental Program Management within 5 days after end of Month

Source Name: Henry Ford Hospital

General Permit to Install Number :

Note: 1 canister of ETO = 100 grams
1 gram = .0022 lbs
100 grams = 0.22 lbs
1000 grams = 2.2 lbs

Month/Year 12-Nov

Date	A Number of cycles	B Pounds ETO used/cycle	C= AxB Pounds ETO used/cycle	D= sum of C used/day
1	1	0.22	0.22	0.22
2	1	0.22	0.22	0.22
3		0.22	0	0
4		0.22	0	0
5	1	0.22	0.22	0.22
6		0.22	0	0
7		0.22	0	0
8	1	0.22	0.22	0.22
9		0.22	0	0
10		0.22	0	0
11		0.22	0	0
12	1	0.22	0.22	0.22
13		0.22	0	0
14		0.22	0	0
15	1	0.22	0.22	0.22
16		0.22	0	0
17		0.22	0	0
18		0.22	0	0
19	1	0.22	0.22	0.22
20		0.22	0	0
21		0.22	0	0
22		0.22	0	0
23		0.22	0	0
24		0.22	0	0
25	1	0.22	0.22	0.22
26		0.22	0	0
27		0.22	0	0
28		0.22	0	0
29		0.22	0	0
30	1	0.22	0.22	0.22
31		0.22	0	0

Total pounds ETO used/month
H=sum of D = 1.98

Total pounds ETO emitted/month
I= HX(1-0.999) 0.00198

Air Permit Recordkeeping Form:

Please submit to Cathy Semer at Environmental Program Management within 5 days after end of Month

Source Name: Henry Ford Hospital

General Permit to Install Number :

Note: 1 canister of ETO = 100 grams
1 gram = .0022 lbs
100 grams = 0.22 lbs
1000 grams = 2.2 lbs

Month/Year 12-Dec

Date	A Number of cycles	B Pounds ETO used/cycle	C= AxB Pounds ETO used/cycle	D= sum of C used/day
1		0.22	0	0
2		0.22	0	0
3		0.22	0	0
4	1	0.22	0.22	0.22
5		0.22	0	0
6		0.22	0	0
7	1	0.22	0.22	0.22
8		0.22	0	0
9		0.22	0	0
10	1	0.22	0.22	0.22
11	1	0.22	0.22	0.22
12		0.22	0	0
13		0.22	0	0
14		0.22	0	0
15		0.22	0	0
16		0.22	0	0
17	1	0.22	0.22	0.22
18	1	0.22	0.22	0.22
19	1	0.22	0.22	0.22
20		0.22	0	0
21	1	0.22	0.22	0.22
22		0.22	0	0
23	1	0.22	0.22	0.22
24		0.22	0	0
25		0.22	0	0
26	1	0.22	0.22	0.22
27		0.22	0	0
28	1	0.22	0.22	0.22
29		0.22	0	0
30		0.22	0	0
31		0.22	0	0

Total pounds ETO used/month
H=sum of D = 2.42

Total pounds ETO emitted/month
I= HX(1-0.999) 0.00242

Air Permit Recordkeeping Form:

Please submit to Cathy Semer at Environmental Program Management within 5 days after end of Month

Source Name: Henry Ford Hospital

General Permit to Install Number :

Note: 1 canister of ETO = 100 grams
1 gram = .0022 lbs
100 grams = 0.22 lbs
1000 grams = 2.2 lbs

Month/Year Jan-13

Date	A Number of cycles	B Pounds ETO used/cycle	C= AxB Pounds ETO used/cycle	D= sum of C used/day
1		0.22	0	0
2		0.22	0	0
3	1	0.22	0.22	0.22
4		0.22	0	0
5		0.22	0	0
6		0.22	0	0
7		0.22	0	0
8		0.22	0	0
9		0.22	0	0
10	1	0.22	0.22	0.22
11		0.22	0	0
12		0.22	0	0
13		0.22	0	0
14	1	0.22	0.22	0.22
15	1	0.22	0.22	0.22
16		0.22	0	0
17	1	0.22	0.22	0.22
18		0.22	0	0
19		0.22	0	0
20		0.22	0	0
21		0.22	0	0
22	1	0.22	0.22	0.22
23		0.22	0	0
24		0.22	0	0
25	1	0.22	0.22	0.22
26		0.22	0	0
27		0.22	0	0
28		0.22	0	0
29	1	0.22	0.22	0.22
30		0.22	0	0
31		0.22	0	0

Total pounds ETO used/month
H=sum of D = 1.76

Total pounds ETO emitted/month
I= HX(1-0.999) 0.00176

Air Permit Recordkeeping Form:

Please submit to Cathy Semer at Environmental Program Management within 5 days after end of Month

Source Name: Henry Ford Hospital

General Permit to Install Number :

Note: 1 canister of ETO = 100 grams
1 gram = .0022 lbs
100 grams = 0.22 lbs
1000 grams = 2.2 lbs

Month/Year Feb-13

Date	A Number of cycles	B Pounds ETO used/cycle	C= AxB Pounds ETO used/cycle	D= sum of C used/day
1		0.22	0	0
2		0.22	0	0
3		0.22	0	0
4		0.22	0	0
5		0.22	0	0
6	1	0.22	0.22	0.22
7	1	0.22	0.22	0.22
8		0.22	0	0
9		0.22	0	0
10		0.22	0	0
11	1	0.22	0.22	0.22
12	1	0.22	0.22	0.22
13		0.22	0	0
14		0.22	0	0
15		0.22	0	0
16		0.22	0	0
17	1	0.22	0.22	0.22
18		0.22	0	0
19	1	0.22	0.22	0.22
20		0.22	0	0
21	1	0.22	0.22	0.22
22		0.22	0	0
23		0.22	0	0
24	1	0.22	0.22	0.22
25		0.22	0	0
26		0.22	0	0
27		0.22	0	0
28	1	0.22	0.22	0.22
29		0.22	0	0
30		0.22	0	0
31		0.22	0	0

Total pounds ETO used/month
H=sum of D = 1.98

Total pounds ETO emitted/month
I= HX(1-0.999) 0.00198

Air Permit Recordkeeping Form:

Please submit to Cathy Semer at Environmental Program Management within 5 days after end of Month

Source Name: Henry Ford Hospital

General Permit to Install Number :

Note: 1 canister of ETO = 100 grams
1 gram = .0022 lbs
100 grams = 0.22 lbs
1000 grams = 2.2 lbs

Month/Year Mar-13

Date	A Number of cycles	B Pounds ETO used/cycle	C= AxB Pounds ETO used/cycle	D= sum of C used/day
1		0.22	0	0
2		0.22	0	0
3		0.22	0	0
4		0.22	0	0
5	1	0.22	0.22	0.22
6		0.22	0	0
7	1	0.22	0.22	0.22
8		0.22	0	0
9		0.22	0	0
10		0.22	0	0
11	1	0.22	0.22	0.22
12		0.22	0	0
13		0.22	0	0
14	1	0.22	0.22	0.22
15	1	0.22	0.22	0.22
16		0.22	0	0
17		0.22	0	0
18		0.22	0	0
19	1	0.22	0.22	0.22
20		0.22	0	0
21	1	0.22	0.22	0.22
22		0.22	0	0
23		0.22	0	0
24		0.22	0	0
25	1	0.22	0.22	0.22
26		0.22	0	0
27	1	0.22	0.22	0.22
28		0.22	0	0
29	1	0.22	0.22	0.22
30		0.22	0	0
31	1	0.22	0.22	0.22

Total pounds ETO used/month
H=sum of D = 2.42

Total pounds ETO emitted/month
I= HX(1-0.999) 0.00242

Air Permit Recordkeeping Form: EtO Sterilizer

Source Name: Henry Ford Hospital
Emission Unit: EUTOSTER1

Note: 1 canister of ETO = 100 grams
1 gram = .0022 lbs
100 grams = 0.22 lbs
1000 grams = 2.2 lbs

Month/Year **Apr-13**

Date	A Number of cycles	B Pounds ETO used/cycle	C= AxB Pounds ETO used/cycle	D= sum of C used/day
1	1	0.22	0.22	0.22
2		0.22	0	0
3		0.22	0	0
4	1	0.22	0.22	0.22
5		0.22	0	0
6		0.22	0	0
7		0.22	0	0
8		0.22	0	0
9		0.22	0	0
10	1	0.22	0.22	0.22
11		0.22	0	0
12		0.22	0	0
13		0.22	0	0
14	1	0.22	0.22	0.22
15		0.22	0	0
16		0.22	0	0
17		0.22	0	0
18	1	0.22	0.22	0.22
19	1	0.22	0.22	0.22
20	1	0.22	0.22	0.22
21		0.22	0	0
22	1	0.22	0.22	0.22
23		0.22	0	0
24		0.22	0	0
25	1	0.22	0.22	0.22
26		0.22	0	0
27		0.22	0	0
28		0.22	0	0
29		0.22	0	0
30		0.22	0	0
31		0.22	0	0

Total pounds ETO used/month
H=sum of D = 1.98

Total pounds ETO emitted/month
I= HX(1-0.999) 0.00198

Air Permit Recordkeeping Form: EtO Sterilizer

Source Name: Henry Ford Hospital
Emission Unit: EUTOSTER1
General Permit to Install Number :

Note: 1 canister of ETO = 100 grams
1 gram = .0022 lbs
100 grams = 0.22 lbs
1000 grams = 2.2 lbs

Month/Year **May-13**

Date	A Number of cycles	B Pounds ETO used/cycle	C= AxB Pounds ETO used/cycle	D= sum of C used/day
1		0.22	0	0
2	1	0.22	0.22	0.22
3		0.22	0	0
4		0.22	0	0
5	1	0.22	0.22	0.22
6		0.22	0	0
7	1	0.22	0.22	0.22
8		0.22	0	0
9		0.22	0	0
10		0.22	0	0
11	1	0.22	0.22	0.22
12		0.22	0	0
13		0.22	0	0
14		0.22	0	0
15		0.22	0	0
16		0.22	0	0
17	1	0.22	0.22	0.22
18		0.22	0	0
19		0.22	0	0
20		0.22	0	0
21	1	0.22	0.22	0.22
22		0.22	0	0
23	1	0.22	0.22	0.22
24	1	0.22	0.22	0.22
25		0.22	0	0
26		0.22	0	0
27		0.22	0	0
28		0.22	0	0
29		0.22	0	0
30		0.22	0	0
31		0.22	0	0

Total pounds ETO used/month
H=sum of D = 1.76

Total pounds ETO emitted/month
I= HX(1-0.999) 0.00176

Air Permit Recordkeeping Form: EtO Sterilizer

Source Name: Henry Ford Hospital
Emission Unit: EUTOSTER1

Note: 1 canister of ETO = 100 grams
1 gram = .0022 lbs
100 grams = 0.22 lbs
1000 grams = 2.2 lbs

Month/Year **Jun-13**

Date	A Number of cycles	B Pounds ETO used/cycle	C= AxB Pounds ETO used/cycle	D= sum of C used/day
1		0.22	0	0
2		0.22	0	0
3		0.22	0	0
4		0.22	0	0
5	1	0.22	0.22	0.22
6	1	0.22	0.22	0.22
7		0.22	0	0
8	1	0.22	0.22	0.22
9		0.22	0	0
10		0.22	0	0
11		0.22	0	0
12	1	0.22	0.22	0.22
13	1	0.22	0.22	0.22
14		0.22	0	0
15		0.22	0	0
16		0.22	0	0
17		0.22	0	0
18	1	0.22	0.22	0.22
19	1	0.22	0.22	0.22
20	1	0.22	0.22	0.22
21		0.22	0	0
22		0.22	0	0
23	1	0.22	0.22	0.22
24		0.22	0	0
25		0.22	0	0
26	1	0.22	0.22	0.22
27	1	0.22	0.22	0.22
28		0.22	0	0
29	1	0.22	0.22	0.22
30		0.22	0	0
31		0.22	0	0

Total pounds ETO used/month
H=sum of D = 2.64

Total pounds ETO emitted/month
I= HX(1-0.999) 0.00264

Air Permit Recordkeeping Form: EtO Sterilizer

Source Name: Henry Ford Hospital
Emission Unit: EUTOSTER1

Note: 1 canister of ETO = 100 grams
1 gram = .0022 lbs
100 grams = 0.22 lbs
1000 grams = 2.2 lbs

Month/Year **Jul-13**

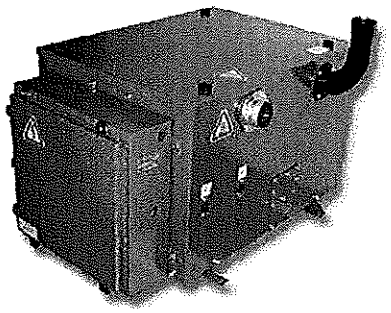
Date	A Number of cycles	B Pounds ETO used/cycle	C= AxB Pounds ETO used/cycle	D= sum of C used/day
1		0.22	0	0
2	1	0.22	0.22	0.22
3	1	0.22	0.22	0.22
4		0.22	0	0
5		0.22	0	0
6		0.22	0	0
7	1	0.22	0.22	0.22
8		0.22	0	0
9	1	0.22	0.22	0.22
10		0.22	0	0
11		0.22	0	0
12	1	0.22	0.22	0.22
13		0.22	0	0
14		0.22	0	0
15	1	0.22	0.22	0.22
16	1	0.22	0.22	0.22
17	1	0.22	0.22	0.22
18	1	0.22	0.22	0.22
19	1	0.22	0.22	0.22
20		0.22	0	0
21	1	0.22	0.22	0.22
22		0.22	0	0
23		0.22	0	0
24		0.22	0	0
25		0.22	0	0
26	1	0.22	0.22	0.22
27		0.22	0	0
28		0.22	0	0
29		0.22	0	0
30	1	0.22	0.22	0.22
31		0.22	0	0

Total pounds ETO used/month
H=sum of D = 2.86

Total pounds ETO emitted/month
I= HX(1-0.999) 0.00286

3M™ EO Abator Model 50 System

3M ID 70200738030 UPC# 00707387524302 CAT# 50AN



The 3M™ EO Abator Model 50 is an EO emission control system

Benefits

- Converts EO to carbon dioxide and water with up to 99.9% efficiency.

Overview | Documents

The 3M™ EO Abator is a highly effective device used to convert EO exhausted from a sterilizer airstream. It is designed exclusively for use with 3M™ Steri-Vac™ Sterilizer Models 5XL and 8XL. The 3M EO abator uses an exothermic (heat producing) reaction to convert EO exhaust into CO2 and water vapor. At normal operating temperatures and concentrations, conversion efficiency is 99.9+%* - virtually eliminating emissions of EO to the environment! The 3M EO Abator includes an enclosed catalyst bed, air heater, fan and all controls necessary for complete operation. The estimated life of the catalyst is three years, based on average use of 310 cycles per year. The unit comes complete, ready for installation and connection to the building utility service lines and sterilizer exhaust. Each EO Abator can be used with a maximum of two model 5XL or 8XL Sterilizers.

Suggested Applications

- To remove ethylene oxide (EO) gas exhausted from Steri-Vac sterilizer/aerators and aerators

Specifications

Brand	Steri-Vac
Depth	105 cm
Depth (metric)	105 cm
Height	80 cm
Height (Metric)	80 cm
Product Type	Sterilizer
Product Use	Accessory
Sterilization Method	Ethylene Oxide (EO)
Width	82 cm
Width (Metric)	82 cm

Main Group
Detailed Equipment History Report
Sorted by Equipment Type
08/01/2012 To 07/31/2013

(See last page for report filters & settings)

Date	Work Order	Type	Status / Reason	Hours: Regular	Hours: Over Time	Total Cost: Labor	Total Cost: Material	Total Cost: Total
☐ ST02004 Sterilizer, Gas, Small HF50013								
10/30/12	Note		Changed Condition from Average to Non-Life Suppor					
04/20/13	363819	CM	Completed customer states: K5 OR reprocessing gas sterilize is alarming - needs service tonight	4.00	0.00		0.00	
			Response/Action: Travel — Date: 04/20/2013 — Emp/Ven/Cnt: Brown, Dean — Hours: 1.00 — Finished: 07:37 AM					
			Response/Action: Reset Disposer and monitored the exhaust phase. — Date: 04/20/2013 — Emp/Ven/Cnt: Brown, Dean — Hours: 3.00 — Finished: 07:34 AM					
02/01/13	357877	PM	Completed MMS, Steris Sterilizers, ETO01 - Next Scheduled Date: 08/01/2013	3.00	0.00		0.00	
			Response/Action: Checked unit for proper operation. Cleaned door gasket and chamber. Upper leak rate 0.0 mmhg, lower leak rate 0.1 mmhg. Ran good chart cycle and humidity test. Checked unit for loose or missing hardware. — Date: 02/01/2013 — Emp/Ven/Cnt: Brown, Dean — Hours: 3.00 — Finished: 10:00 AM					
11/06/12	352074	CM	Completed Machine running, time will not execute, K5 (Tech DB notified) 11/6>SL	2.00	0.00		119.33	
			Parts/Material: Pre Filter — Qty: 1 — Cost/Item: 119.33					
			Response/Action: Repair Performed, Replaced the pre-filter. — Date: 11/06/2012 — Emp/Ven/Cnt: Brown, Dean — Hours: 2.00 — Finished: 08:13 AM					
10/25/12	350840	CM	Completed CUSTOMER STATE: GAS STERILIZER IS ALARMING LOCATED K5 REPROCESSING>TW	2.30	0.00		0.00	
			Response/Action: Test cycle ran good. returned unit to service. — Date: 10/25/2012 — Emp/Ven/Cnt: Brown, Dean — Hours: 1.00 — Finished: 01:50 PM					
			The print out shows the ETO canister either was not installed prior to starting the cycle. Or the empty canister was not removed from the previous cycle. The Disposer did not see a Temp. rise during exhaust as well indicating no ETO gas was shipped to it. I have the unit running a test cycle. — Date: 10/25/2012 — Emp/Ven/Cnt: Brown, Dean — Hours: 1.30 — Finished: 07:57 AM					
08/29/12	344950	PM	Completed MMS, Steris Sterilizers, ETO01 - Next Scheduled Date: 02/01/2013	3.00	0.00		0.00	
			Response/Action: Checked unit for proper operation. Ran leak test and chart cycle. Checked humidity calibration. Checked Temperature probes and Pressure transducer calibration. Checked unit for damage, loose and missing hardware. — Date: 08/29/2012 — Emp/Ven/Cnt: Brown, Dean — Hours: 3.00 — Finished: 12:43 PM					
Equipment Summary: No. of Work Order Records:				14.30	0.00		119.33	
Sort Summary: No. of Work Order Records: 5				14.30	0.00		119.33	

Date	Work Order	Type	Status	Hours		Total Cost		
			Reason	Regular	Over Time	Labor	Material	Total
Grand Total: No. of Work Order Records: 5				14.30	0.00	0.00	119.33	119.33

End of Report

Main Group
Detailed Equipment History Report
Sorted by Equipment Type
08/01/2012 To 07/31/2013

(See last page for report filters & settings)

Date	Work Order	Type	Status / Reason	Hours: Regular	Hours: Over Time	Total Cost: Labor	Total Cost: Material	Total Cost: Total

☐ ST02001 Sterilizer, Gas, Aerator

HF50348

10/30/12 Note — Changed Condition from Average to Non-Life Suppor

06/06/13 365020 PM — Completed — 2.00 — 0.00 — 142.45

MMS, Donaldson EO Disposer Semi-Annual01 - Next Scheduled Date: 11/01/2013

Parts/Material	Qty	Cost/Item
Pre Filter	1	142.45

Response/Action	Date	Emp/Ven/Cnt	Hours	Finished
Checked disposer for proper operation. Changed the pre filter. Checked the bed temp. Cleaned unit and checked the chart recorder.	06/06/2013	Brown, Dean	2.00	09:48 AM

02/26/13 358714 CM — Completed — 10.50 — 0.00 — 949.00

ETO sterilizer is alarming, disposer not ready. DB>

Parts/Material	Qty	Cost/Item
Motor	1	949.00

Response/Action	Date	Emp/Ven/Cnt	Hours	Finished
Put disposer back togeather, after catalytic bed was dry. tested unit and returned it to service.	02/26/2013	Brown, Dean	4.00	02:33 PM
Cleaned and repacked the disposer catalyst. Cleared the inside of disposer with vacuum.	02/22/2013	Brown, Dean	3.00	05:52 AM
Installed new blower motor.	02/18/2013	Brown, Dean	2.50	05:54 AM
Found the blower motor burned up on the D'sposer. will order a new one.	02/13/2013	Brown, Dean	1.00	07:26 AM

11/23/12 351713 PM — Completed — 1.50 — 0.00 — 0.00

MMS, Donaldson EO Disposer Semi-Annual01 - Next Scheduled Date: 05/01/2013

Response/Action	Date	Emp/Ven/Cnt	Hours	Finished
Ran unit on manual and checked for proper operation. Checked bed temperature against the chart recorder. Checked the pre filter and cleand the lint screen. changed the chart paper. Also turned on the heater for the disposer area to keep the area at 50 deg. k or higher.	11/23/2012	Brown, Dean	1.50	09:57 AM

11/02/12 351052 CM — Completed — 7.30 — 0.00 — 949.00

ETO sterilizer alarming. Low air flow.
Attached Steris Packing Slip 10292012, 11/15>SL

Parts/Material	Qty	Cost/Item
Motor	1	949.00

Response/Action	Date	Emp/Ven/Cnt	Hours	Finished
Calibrated/Adjusted Equipment, system checks out good. returned to service.	11/02/2012	Brown, Dean	2.00	09:44 AM
Replaced blower motor and the pre Filter.	11/01/2012	Brown, Dean	2.30	09:19 AM
Blower motor on the disposer is frozen. Cleaned and lubed motor. Motor still sounds bad. will order new one on Monday 10/29/12. DB>	10/27/2012	Brown, Dean	3.00	08:46 AM

Date	Work Order	Type	Status	Hours		Total Cost		
			Reason	Regular	Over Time	Labor	Material	Total
08/15/12	345244	CM	Completed	16.00	0.00		0.00	
			ETO Sterilizer is stuck in exhaust. Disposer shows overtemp tripped. DB>					

Parts/Material	Qty	Cost/Item
Controler	1	0.00

Response/Action	Date	Emp/Ven/Cnt	Hours	Finished
Checked and Ready for use, unit ran a good cycle and the chart recorder showed a good cycle as well. Returned unit to service. DB>	08/15/2012	Brown, Dean	1.00	10:17 AM
Repair Performed, Installed used controler and calibrated the chart recorder. Ran an operational check in manual mode. unit checked out good. Letting customer run a gas load tonight 8-14-12 for a complete operational check in auto mode. DB>	08/15/2012	Brown, Dean	4.00	10:14 AM
Administrative Function Perfor,Located a controler at H-Ford Warren (Bi-County) hospital. Went through John Khoury and am using the controler off the Disposer CS had. Will replace that controler when one is located through my sources. DB>	08/13/2012	Brown, Dean	3.00	10:14 AM
Troubleshooting, Trouble shot the problem down to the controler DB> In the process of locating a controler DB>	08/09/2012	Brown, Dean	6.00	09:08 AM
Troubleshooting, reset the overtemp and disposer heated up fine and ETO Sterilizer started exhausting fine. Can't work on system until load is complete. It won't be complete until 7pm tonight. will work on system thursday morning.DB>	08/08/2012	Brown, Dean	1.00	06:51 AM
Troubleshooting, reset disposer and ETO Sterilizer started exhausting. will monitor ETO system as it Exhausts and aerates. DB>	08/06/2012	Brown, Dean	1.00	07:58 AM

Equipment Summary: No. of Work Order Records:	37.30	0.00		2040.45	
Sort Summary: No. of Work Order Records: 5	37.30	0.00		2040.45	
Grand Total: No. of Work Order Records: 5	37.30	0.00	0.00	2040.45	2040.45

End of Report

CATERPILLAR®

GEN SET PACKAGE PERFORMANCE DATA [25Z05755]

SEPTEMBER 05, 2013

For Help Desk Phone Numbers Click here

Performance Number: TM9337 **Change Level:** 08

Sales Model: 3516 DITA **Combustion:** DI **Aspr:** TA

Engine Power:
1500 W/F EKW 1547 W/O F EKW
2,168 HP

Speed: 1,800 RPM **After Cooler:** JWAC

Manifold Type: DRY **Governor Type:** WDWRD **After Cooler Temp(F):** 180

Turbo Quantity: 4 **Engine App:** GP **Turbo Arrangement:** Parallel

Hertz: 60 **Application Type:** PACKAGE-DIE **Engine Rating:** PGS **Strategy:**

Rating Type: STANDBY **Certification:**

General Performance Data

GEN W/F EKW	PERCENT LOAD	ENGINE POWER BHP	ENGINE BMEP PSI	FUEL BSFC LB/BHP-HR	FUEL RATE GPH	INTAKE MFLD TEMP DEG F	INTAKE MFLD P IN-HG	INTAKE AIR FLOW CFM	EXH MFLD TEMP DEG F	EXH STACK TEMP DEG F	EXH GAS FLOW CFM
1,500	100	2157	225.39	0.35	107.28	200.48	57.98	4,989.97	1,136.48	923.18	13,387.8
1,350	90	1945	203.2	0.35	97.72	196.7	51.41	4,686.26	1,091.3	907.16	12,416.65
1,200	80	1734	181.15	0.35	87.92	193.28	44.83	4,393.15	1,047.74	882.68	11,420.77
1,125	75	1629	170.28	0.36	83	191.66	41.55	4,244.83	1,025.96	869	10,908.71
1,050	70	1524	159.25	0.36	78.14	189.68	38.29	4,075.32	1,004	855.5	10,378.99
900	60	1316	137.5	0.36	68.5	184.64	32.01	3,732.76	958.82	827.06	9,305.42
750	50	1108	115.74	0.37	58.88	178.16	26	3,393.74	911.3	796.28	8,217.73
600	40	904	94.42	0.38	49.29	167.72	20.64	3,065.32	858.38	747.32	7,133.57
450	30	697	72.81	0.4	39.55	157.1	15.7	2,726.29	794.84	687.38	6,024.69
375	25	592	61.79	0.41	34.58	151.7	13.41	2,556.78	759.02	653.36	5,463.18
300	20	486	50.76	0.43	29.77	149	11.31	2,383.74	716	617.18	4,919.34
150	10	270	28.28	0.53	20.47	149.18	7.64	2,027.06	610.7	537.98	3,874.02

MECHANICAL Sound Data: 22.97 FEET

GEN W/F EKW	PERCENT LOAD	OVERALL SOUND DB(A)	OBCF 63HZ DB	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCJ 8000HZ DB
1,500	100	98	100	109	100	92	89	90	87	91
1,350	90	98	100	109	100	92	89	90	87	91
1,200	80	98	100	109	100	92	89	90	87	91
1,125	75	98	100	109	100	92	89	90	87	91
1,050	70	98	100	109	100	92	89	90	87	91
900	60	98	100	109	100	92	89	90	87	91
750	50	98	100	109	100	92	89	90	87	91
600	40	98	100	109	100	92	89	90	87	91
450	30	98	100	109	100	92	89	90	87	91
375	25	98	100	109	100	92	89	90	87	91
300	20	98	100	109	100	92	89	90	87	91
150	10	97	100	109	100	92	88	88	85	90

MECHANICAL Sound Data: 49.21 FEET

GEN W/F EKW	PERCENT LOAD	OVERALL SOUND DB(A)	OBCF 63HZ DB	OBCF 125HZ DB	OBCF 250HZ DB	OBCF 500HZ DB	OBCF 1000HZ DB	OBCF 2000HZ DB	OBCF 4000HZ DB	OBCF 8000HZ DB
1,500	100	92	94	103	94	86	84	84	82	86
1,350	90	92	94	103	94	86	84	84	82	86
1,200	80	92	94	103	94	86	84	84	82	86
1,125	75	92	94	103	94	86	84	84	82	86
1,050	70	92	94	103	94	86	84	84	82	86
900	60	92	94	103	94	86	84	84	82	86
750	50	92	94	103	94	86	84	84	82	86
600	40	92	94	103	94	86	84	84	82	86
450	30	92	94	103	94	86	84	84	82	86
375	25	92	94	103	94	86	84	84	82	86
300	20	92	94	103	94	86	84	84	82	86
150	10	91	94	103	94	86	82	82	80	84

EMISSIONS DATA

Certification:

To properly apply this data you must refer to performance parameter DM1176 for additional information...

REFERENCE EXHAUST STACK DIAMETER	12 IN
WET EXHAUST MASS	22,707.6 LB/HR
WET EXHAUST FLOW (923.00 F STACK TEMP)	13,398.40 CFM
WET EXHAUST FLOW RATE (32 DEG F AND 29.98 IN HG)	4,764.00 STD CFM
DRY EXHAUST FLOW RATE (32 DEG F AND 29.98 IN HG)	4,364.90 STD CFM
FUEL FLOW RATE	107 GAL/HR

RATED SPEED "Potential site variation"

GEN PWR EKW	PERCENT LOAD	ENGINE POWER BHP	TOTAL NOX (AS NO2) LB/HR	TOTAL CO LB/HR	TOTAL HC LB/HR	PART MATTER LB/HR	OXYGEN IN EXHAUST PERCENT	DRY SMOKE OPACITY PERCENT	BOSCH SMOKE NUMBER
1,500	100	2157	70.2300	10.1600	.9600	.5400	10.1000	5.1000	1.3900
1,125	75	1629	60.0500	6.4000	1.2500	.5200	11.2000	3.4000	1.3000
750	50	1108	42.2300	4.1600	1.1500	.5100	12.2000	2.8000	1.3100
375	25	592	22.2500	3.2200	.9900	.4700	13.9000	2.6000	1.2900
150	10	270	12.5600	6.6800	1.1600	.6100	16.1000	3.9000	1.2900

RATED SPEED "Nominal Data"

GEN PWR EKW	PERCENT LOAD	ENGINE POWER BHP	TOTAL NOX (AS NO2) LB/HR	TOTAL CO LB/HR	TOTAL HC LB/HR	TOTAL CO2 LB/HR	PART MATTER LB/HR	OXYGEN IN EXHAUST PERCENT	DRY SMOKE OPACITY PERCENT	BOSCH SMOKE NUMBER
1,500	100	2157	58.5200	5.6400	.7200	2,266.4	.3900	10.1000	5.1000	1.3900
1,125	75	1629	50.0400	3.5500	.9400	1,743.7	.3700	11.2000	3.4000	1.3000
750	50	1108	35.1900	2.3100	.8700	1,234.7	.3600	12.2000	2.8000	1.3100
375	25	592	18.5400	1.7900	.7400	725.7	.3300	13.9000	2.6000	1.2900
150	10	270	10.4600	3.7100	.8700	423.4	.4400	16.1000	3.9000	1.2900

Altitude Capability Data(Corrected Power Altitude Capability)

Ambient Operating Temp.	50 F	68 F	86 F	104 F	122 F	NORMA
Altitude						
0 F	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43
984.25 F	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43
1,640.42 F	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43
3,280.84 F	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43
4,921.26 F	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43
6,561.68 F	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,168.43
8,202.1 F	2,168.43 hp	2,168.43 hp	2,168.43 hp	2,106.74 hp	2,041.03 hp	2,168.43
9,842.52 F	2,168.43 hp	2,113.45 hp	2,043.71 hp	1,978 hp	1,916.32 hp	2,168.43
10,498.69 F	2,132.22 hp	2,059.81 hp	1,991.41 hp	1,928.39 hp	1,868.04 hp	2,136.24

The powers listed above and all the Powers displayed are Corrected Powers

Identification Reference and Notes

Engine Arrangement:	6I2939	**Lube Oil Press @ Rated Spd(PSI):**	55.8
Effective Serial No:	25Z05343	**Piston Speed @ Rated Eng SPD (FT/Min):**	2,244.1
Primary Engine Test Spec:	2T4665	**Max Operating Altitude(FT):**	10,016.4
Performance Parm Ref:	TM5739	**PEEC Elect Control Module Ref**	
Performance Data Ref:	TM9337	**PEEC Personality Cont Mod Ref**	
Aux Coolant Pump Perf Ref:			
Cooling System Perf Ref:	TD3099	**Turbocharger Model**	TV8302-1.39
Certification Ref:		**Fuel Injector**	1113718
Certification Year:		**Timing-Static (DEG):**	--
Compression Ratio:	13.0	**Timing-Static Advance (DEG):**	--
Combustion System:	DI	**Timing-Static (MM):**	--
Aftercooler Temperature (F):	180	**Unit Injector Timing (MM):**	86.3
Crankcase Blowby Rate(CFH):	1,084.2	**Torque Rise (percent)**	--
Fuel Rate (Rated RPM) No Load (Gal/HR):	8.6	**Peak Torque Speed RPM**	--
Lube Oil Press @ Low Idle Spd(PSI):	20.0	**Peak Torque (LB.FT):**	--

Reference Number: TM9337 --

Parameters Reference: TM5739

GEN SET - PACKAGED - DIESEL

TOLERANCES:
AMBIENT AIR CONDITIONS AND FUEL USED WILL AFFECT THESE VALUES. EACH OF THE VALUES MAY VARY IN ACCORDANCE WITH THE FOLLOWING TOLERANCES.

Power	+/- 3%
Exhaust Stack Temperature	+/- 8%
Generator Power	+/- 5%
Inlet Airflow	+/- 5%
Intake Manifold Pressure-gage	+/- 10%
Exhaust Flow	+/- 6%
Specific Fuel Consumption	+/- 3%
Fuel Rate	+/- 5%
Heat Rejection	+/- 5%
Heat Rejection - Exhaust Only	+/- 10%

T4i Tolerance Exceptions
C15: Power Tolerance +4%, -0%
C27: Power Tolerance +0%, -4%

CONDITIONS:
ENGINE PERFORMANCE IS CORRECTED TO INLET AIR STANDARD CONDITIONS OF 99 KPA (29.31 IN HG) AND 25 DEG C (77 DEG F).
THESE VALUES CORRESPOND TO THE STANDARD ATMOSPHERIC PRESSURE AND TEMPERATURE IN ACCORDANCE WITH SAE J1349. ALSO INCLUDED IS A CORRECTION TO STANDARD FUEL GRAVITY OF 35 DEGREES API HAVING A LOWER HEATING VALUE OF 42,780 KJ/KG (18,390 BTU/LB) WHEN USED AT 29 DEG C (84.2 DEG F) WHERE THE DENSITY IS 838.9 G/L (7.002 LB/GAL).
THE CORRECTED PERFORMANCE VALUES SHOWN FOR CATERPILLAR ENGINES WILL APPROXIMATE THE VALUES OBTAINED WHEN THE OBSERVED PERFORMANCE DATA IS CORRECTED TO SAE J1349, ISO 3046-2 & 8665 & 2288 & 9249 & 1585, EEC 80/1269 AND DIN70020 STANDARD REFERENCE CONDITIONS.
ENGINES ARE EQUIPPED WITH STANDARD ACCESSORIES; LUBE OIL, FUEL PUMP AND JACKET WATER PUMP. THE POWER REQUIRED TO DRIVE AUXILIARIES MUST BE DEDUCTED FROM THE GROSS OUTPUT TO ARRIVE AT THE NET POWER AVAILABLE FOR THE EXTERNAL (FLYWHEEL) LOAD. TYPICAL AUXILIARIES INCLUDE COOLING FANS, AIR COMPRESSORS, AND CHARGING ALTERNATORS.
RATINGS MUST BE REDUCED TO COMPENSATE FOR ALTITUDE AND/OR AMBIENT TEMPERATURE CONDITIONS ACCORDING TO THE APPLICABLE DATA SHOWN ON THE PERFORMANCE DATA SET.

ALTITUDE:
ALTITUDE CAPABILITY - THE RECOMMENDED REDUCED POWER VALUES FOR SUSTAINED ENGINE OPERATION AT SPECIFIC ALTITUDE LEVELS AND AMBIENT TEMPERATURES.
COLUMN "N" DATA - THE FLYWHEEL POWER OUTPUT AT NORMAL AMBIENT

TEMPERATURE.
AMBIENT TEMPERATURE - TO BE MEASURED AT THE AIR CLEANER AIR INLET DURING NORMAL ENGINE OPERATION.
NORMAL TEMPERATURE - THE NORMAL TEMPERATURE AT VARIOUS SPECIFIC ALTITUDE LEVELS IS FOUND ON TM2001.
THE GENERATOR POWER CURVE TABULAR DATA REPRESENTS THE NET ELECTRICAL POWER OUTPUT OF THE GENERATOR.

GENERATOR SET RATINGS

EMERGENCY STANDBY POWER (ESP)
OUTPUT AVAILABLE WITH VARYING LOAD FOR THE DURATION OF AN EMERGENCY OUTAGE. AVERAGE POWER OUTPUT IS 70% OF THE ESP RATING. TYPICAL OPERATION IS 50 HOURS PER YEAR, WITH MAXIMUM EXPECTED USAGE OF 200 HOURS PER YEAR.
STANDBY POWER RATING
OUTPUT AVAILABLE WITH VARYING LOAD FOR THE DURATION OF AN EMERGENCY OUTAGE. AVERAGE POWER OUTPUT IS 70% OF THE STANDBY POWER RATING. TYPICAL OPERATION IS 200 HOURS PER YEAR, WITH MAXIMUM EXPECTED USAGE OF 500 HOURS PER YEAR.
PRIME POWER RATING
OUTPUT AVAILABLE WITH VARYING LOAD FOR AN UNLIMITED TIME. AVERAGE POWER OUTPUT IS 70% OF THE PRIME POWER RATING. TYPICAL PEAK DEMAND IS 100% OF PRIME RATED EKW WITH 10% OVERLOAD CAPABILITY FOR EMERGENCY USE FOR A MAXIMUM OF 1 HOUR IN 12. OVERLOAD OPERATION CANNOT EXCEED 25 HOURS PER YEAR.
CONTINUOUS POWER RATING
OUTPUT AVAILABLE WITH NON-VARYING LOAD FOR AN UNLIMITED TIME. AVERAGE POWER OUTPUT IS 70-100% OF THE CONTINUOUS POWER RATING. TYPICAL PEAK DEMAND IS 100% OF CONTINUOUS RATED EKW FOR 100% OF OPERATING HOURS.

SOUND DEFINITIONS:

Sound Power : DM8702
Sound Pressure : TM7080

Date Released : 03/14/12

SAMPLE – All generators have similar forms

B-unit GENERATOR # 9

MONTHLY ON LINE TESTING ATS 35

Record time ATS takes to transfer (normal to emergency) 6 sec

BEFORE ENGINE START UP: ✓

CHECK COOLANT LEVEL: ✓ (NORMAL)

CHECK BATTERY LEVEL: FULL/FILL (NORMAL FULL)

CHECK WATER TEMPERATURE: 115 degrees (NORMAL > 80 < 110 degrees)

CHECK OIL LEVEL 0 psi 115 degrees (NORMAL)

START ENGINE: **START TIME** 5:10

BATTERY VOLTAGE 26 (NORMAL volts)

BATTERY AMPERAGE — (NORMAL amps)

DAY TANK PUSH TO TEST BUTTON / NA ✓ (NORMAL fuel pump runs stops)

DAY TANK FUEL LEVEL ✓ % (NORMAL > 90%)

TANK PIPING TIGHTNESS /NA ✓ (NORMAL)

AFTER START UP FULL LOAD

CHECK OIL PRESSURE: 68/66 psi 127/148 (180° on shutdown) temp (NORMAL psi)

WATER TEMPERATURE: ____ egrees (NORMAL degrees)

VOLTAGE: L1 487 L2 487 L3 488 (NORMAL volts)

AMPS: L1 70/92 L2 59/148 L3 59/123 (NORMAL)

KW: L1 ✓ L2 ✓ L3 ✓ (NORMAL)

HERTZ: 60 cycles (NORMAL 60 cycles)

RPM: 1801 (NORMAL 1800 rpm)

LOUVERS OPEN: YES NO NA (NORMAL YES)

After engine is started check for odor in building

YES.... Stop testing ____ NO.....Continue testing ✓

AFTER ENGINE IS STOPPED: **STOP TIME** —

SWITCH POSITION: AUTO ✓ OFF ____ (NORMAL AUTO)

ENGINE STARTS — HOURS 787 (NORMAL > LAST WEEK)

CHECK FOR LEAKS: (FUEL, COOLANT, OIL) ✓ (NORMAL NO LEAKS)

Date: 7-5-13 **Signature:** BRC, SDB

EUBUNITGEN

PERFORMANCE DATA[DM2267]

September 5, 2013

erformance Number: DM2267 **Change Level: 03**

SALES MODEL:	3406C	**COMBUSTION:**	DI
ENGINE POWER (BHP):	449	**ENGINE SPEED (RPM):**	1,800
GEN POWER W/O FAN (EKW):	311.0	**HERTZ:**	60
GEN POWER WITH FAN (EKW):	300.0	**FAN POWER (HP):**	14.1
COMPRESSION RATIO:	14.5	**ASPIRATION:**	TA
APPLICATION:	PACKAGED GENSET	**AFTERCOOLER TYPE:**	JWAC
RATING LEVEL:	STANDBY	**AFTERCOOLER CIRCUIT TYPE:**	JW+OC+AC
SUB APPLICATION:	STANDARD	**AFTERCOOLER TEMP (F):**	172
PUMP QUANTITY:	1	**JACKET WATER TEMP (F):**	192.2
FUEL TYPE:	DIESEL	**TURBO CONFIGURATION:**	SINGLE
MANIFOLD TYPE:	DRY	**TURBO QUANTITY:**	1
GOVERNOR TYPE:	HYDRA	**TURBOCHARGER MODEL:**	4MF721-5.00
CAMSHAFT TYPE:	STANDARD	**COMBUSTION STRATEGY:**	LOW BSFC
IGNITION TYPE:	CI	**PISTON SPD @ RATED ENG SPD (FT/MIN):**	1,950.0
INJECTOR TYPE:	MUI		
TIMING-STATIC (DEG):	21.0		
TIMING-STATIC ADVANCE (DEG):	8.0		
REF EXH STACK DIAMETER (IN):	5		
MAX OPERATING ALTITUDE (FT):	1,230		

General Performance Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (VFC)	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP
EKW	%	BHP	PSI	LB/BHP-HR	GAL/HR	IN-HG	DEG F	DEG F	IN-HG	DEG F
300.0	100	449	221	0.357	22.9	40.6	188.4	1,233.8	28.2	1,000.8
270.0	90	403	199	0.359	20.7	35.1	185.0	1,198.1	24.2	979.9
240.0	80	359	177	0.362	18.6	29.5	182.7	1,162.2	20.7	959.3
225.0	75	337	166	0.364	17.5	26.8	182.2	1,143.2	19.0	949.1
210.0	70	315	155	0.367	16.5	24.0	181.6	1,123.3	17.5	939.0
180.0	60	272	134	0.374	14.6	19.3	178.8	1,074.6	14.6	911.2
150.0	50	230	113	0.384	12.6	15.1	175.5	1,013.8	12.1	872.4
120.0	40	188	93	0.399	10.7	11.1	173.3	940.0	9.8	819.4
90.0	30	146	72	0.424	8.8	7.5	172.6	852.3	7.7	752.4
75.0	25	125	62	0.443	7.9	5.9	175.0	803.3	6.8	713.5
60.0	20	104	51	0.472	7.0	4.4	177.5	749.4	6.1	669.8
30.0	10	59.5	29	0.571	4.9	2.0	178.9	624.6	4.9	565.9

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP	WET INLET AIR VOL FLOW RATE	ENGINE OUTLET WET EXH GAS VOL FLOW RATE	WET INLET AIR MASS FLOW RATE	WET EXH GAS MASS FLOW RATE	WET EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)	DRY EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)
EKW	%	BHP	IN-HG	DEG F	CFM	CFM	LB/HR	LB/HR	FT3/MIN	FT3/MIN
300.0	100	449	42	295.1	870.7	2,458.0	3,771.0	3,931.1	827.5	760.2
270.0	90	403	36	272.3	811.7	2,255.7	3,515.4	3,660.0	770.4	709.6
240.0	80	359	30	248.7	746.9	2,045.1	3,234.8	3,364.6	708.6	653.9
225.0	75	337	27	236.8	713.3	1,938.8	3,089.2	3,211.8	676.6	624.9
210.0	70	315	25	224.9	679.9	1,833.1	2,944.7	3,060.3	644.4	595.7
180.0	60	272	20	201.8	618.8	1,632.8	2,680.2	2,782.1	585.6	542.6
150.0	50	230	15	179.7	563.8	1,442.9	2,442.0	2,530.4	532.6	495.2
120.0	40	188	11	159.5	515.5	1,263.5	2,233.2	2,308.3	485.7	453.8
90.0	30	146	8	141.0	468.5	1,084.9	2,028.9	2,090.8	440.1	413.7
75.0	25	125	6	132.8	443.5	992.6	1,919.4	1,974.8	416.0	392.3
60.0	20	104	5	125.3	417.8	898.5	1,806.7	1,855.5	391.1	370.2
30.0	10	59.5	2	113.6	371.6	717.9	1,604.1	1,638.1	344.2	329.3

Emissions Data

RATED SPEED POTENTIAL SITE VARIATION: 1800 RPM

GENSET POWER WITH FAN		EKW	300.0	225.0	150.0	75.0	30.0
PERCENT LOAD		%	100	75	50	25	10
ENGINE POWER		BHP	449	337	230	125	59.5
TOTAL NOX (AS NO2)		G/HR	3,995	3,099	2,025	1,033	555
TOTAL CO		G/HR	1,152	367	253	280	314
TOTAL HC		G/HR	70	58	61	43	59
PART MATTER		G/HR	340.7	141.4	108.5	89.2	72.8
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	4,299.9	4,462.4	4,163.5	3,456.8	3,152.7
TOTAL CO	(CORR 5% O2)	MG/NM3	1,234.1	526.7	523.6	954.7	2,357.4
TOTAL HC	(CORR 5% O2)	MG/NM3	85.2	73.5	109.8	132.6	463.0
PART MATTER	(CORR 5% O2)	MG/NM3	304.5	171.1	191.3	266.5	424.1
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	2,094	2,174	2,023	1,684	1,536
TOTAL CO	(CORR 5% O2)	PPM	987	421	419	764	1,886
TOTAL HC	(CORR 5% O2)	PPM	122	137	205	248	864
TOTAL NOX (AS NO2)		G/HP-HR	8.97	9.26	8.88	8.33	9.39
TOTAL CO		G/HP-HR	2.59	1.10	1.11	2.26	5.31
TOTAL HC		G/HP-HR	0.16	0.17	0.27	0.35	0.99
PART MATTER		G/HP-HR	0.76	0.42	0.48	0.72	1.23
TOTAL NOX (AS NO2)		LB/HR	8.81	6.83	4.46	2.28	1.22
TOTAL CO		LB/HR	2.54	0.81	0.56	0.62	0.69
TOTAL HC		LB/HR	0.15	0.13	0.14	0.09	0.13
PART MATTER		LB/HR	0.75	0.31	0.24	0.20	0.16

RATED SPEED NOMINAL DATA: 1800 RPM

GENSET POWER WITH FAN		EKW	300.0	225.0	150.0	75.0	30.0
PERCENT LOAD		%	100	75	50	25	10
ENGINE POWER		BHP	449	337	230	125	59.5
TOTAL NOX (AS NO2)		G/HR	3,302	2,561	1,674	854	458
TOTAL CO		G/HR	616	196	135	150	168
TOTAL HC		G/HR	37	31	32	23	31
TOTAL CO2		KG/HR	186	139	98	61	38
PART MATTER		G/HR	174.7	72.5	55.6	45.7	37.3
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	3,553.6	3,687.9	3,432.7	2,856.9	2,605.5
TOTAL CO	(CORR 5% O2)	MG/NM3	659.9	281.7	280.0	510.5	1,260.6
TOTAL HC	(CORR 5% O2)	MG/NM3	34.5	38.9	58.1	70.2	244.9
PART MATTER	(CORR 5% O2)	MG/NM3	156.2	87.7	98.1	136.7	217.5
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,731	1,796	1,672	1,392	1,269
TOTAL CO	(CORR 5% O2)	PPM	528	225	224	408	1,008
TOTAL HC	(CORR 5% O2)	PPM	64	73	108	131	457
TOTAL NOX (AS NO2)		G/HP-HR	7.41	7.65	7.33	6.89	7.76
TOTAL CO		G/HP-HR	1.38	0.59	0.59	1.21	2.84
TOTAL HC		G/HP-HR	0.08	0.09	0.14	0.18	0.52
PART MATTER		G/HP-HR	0.39	0.22	0.24	0.37	0.63
TOTAL NOX (AS NO2)		LB/HR	7.28	5.65	3.69	1.88	1.01
TOTAL CO		LB/HR	1.36	0.43	0.30	0.33	0.37
TOTAL HC		LB/HR	0.08	0.07	0.07	0.05	0.07
TOTAL CO2		LB/HR	409	307	215	134	83
PART MATTER		LB/HR	0.39	0.16	0.12	0.10	0.08
OXYGEN IN EXH		%	10.2	10.7	11.7	13.9	16.1
DRY SMOKE OPACITY		%	4.6	1.6	1.0	1.2	1.0
BOSCH SMOKE NUMBER			2.29	1.07	0.66	0.78	0.67

Regulatory Information

NON-CERTIFIED	1970 - 2100
THIS ENGINE RATING IS NOT EMISSIONS CERTIFIED BY ANY DOMESTIC OR FOREIGN AGENCY.	

Performance Parameter Reference

Parameters Reference:DM9600-05
PERFORMANCE DEFINITIONS

PERFORMANCE DEFINITIONS DM9600

APPLICATION:
Engine performance tolerance values below are representative of a typical production engine tested in a calibrated dynamometer test cell at SAE J1995 standard reference conditions. Caterpillar maintains ISO9001:2000 certified quality management systems for engine test Facilities to assure accurate calibration of test equipment. Engine test data is corrected in accordance with SAE J1995. Additional reference material SAE J1228, J1349, ISO 8665, 3046-1:2002E, 3046-3:1989, 1585, 2534, 2288, and 9249 may apply in part or are similar to SAE J1995. Special engine rating request (SERR) test data shall be noted.

PERFORMANCE PARAMETER TOLERANCE FACTORS:
Power +/- 3%
Torque +/- 3%
Exhaust stack temperature +/- 8%
Inlet airflow +/- 5%
Intake manifold pressure-gage +/- 10%
Exhaust flow +/- 6%
Specific fuel consumption +/- 3%
Fuel rate +/- 5%
Heat rejection +/- 5%
Heat rejection exhaust only +/- 10%

Torque is included for truck and industrial applications, do not use for Gen Set or steady state applications.

On C7 - C18 engines, at speeds of 1100 RPM and under these values are provided for reference only, and may not meet the tolerance listed.

These values do not apply to C280/3600. For these models, see the tolerances listed below.

C280/3600 HEAT REJECTION TOLERANCE FACTORS:
Heat rejection +/- 10%
Heat rejection to Atmosphere +/- 50%
Heat rejection to Lube Oil +/- 20%
Heat rejection to Aftercooler +/- 5%

TEST CELL TRANSDUCER TOLERANCE FACTORS:

Torque +/- 0.5%
Speed +/- 0.2%
Fuel flow +/- 1.0%
Temperature +/- 2.0 C degrees
Intake manifold pressure +/- 0.1 kPa

OBSERVED ENGINE PERFORMANCE IS CORRECTED TO SAE J1995 REFERENCE AIR AND FUEL CONDITIONS.

REFERENCE ATMOSPHERIC INLET AIR

FOR 3500 ENGINES AND SMALLER
SAE J1228 reference atmospheric pressure is 100 KPA (29.61 In hg) and standard temperature is 25 (77) at 60% relative humidity.

FOR 3600 ENGINES
Engine rating obtained and presented in accordance with ISO 3046/1 and SAE J1995 JAN90 standard reference conditions of 25, 100 KPA 30% relative humidity and 150M altitude at the stated aftercooler water temperature.

MEASUREMENT LOCATION FOR INLET AIR TEMPERATURE
Location for air temperature measurement air cleaner inlet at stabilized operating conditions.

PERFORMANCE DATA[DM2267]

REFERENCE EXHAUST STACK DIAMETER
The Reference Exhaust Stack Diameter published with this dataset is ly used for the calculation of Smoke Opacity values displayed in ..is dataset. This value does not necessarily represent the actual stack diameter of the engine due to the variety of exhaust stack adapter options available. Consult the price list, engine order or general dimension drawings for the actual stack diameter size ordered or options available.

REFERENCE FUEL

DIESEL
Reference fuel is #2 distillate diesel with a 35API gravity; A lower heating value is 42,780 KJ/KG (18,390 BTU/LB) when used at 29 (84.2), where the density is 838.9 G/Liter (7.001 Lbs/Gal).

GAS
Reference natural gas fuel has a lower heating value of 33.74 KJ/L (905 BTU/CU Ft). Low BTU ratings are based on 18.64 KJ/L (500 BTU/CU FT) lower heating value gas. Propane ratings are based on 87.56 KJ/L (2350 BTU/CU Ft) lower heating value gas.

ENGINE POWER (NET) IS THE CORRECTED FLYWHEEL POWER (GROSS) LESS EXTERNAL AUXILIARY LOAD
Engine corrected gross output includes the power required to drive standard equipment; lube oil, scavenge lube oil, fuel transfer, common rail fuel, separate circuit aftercooler and jacket water pumps. Engine net power available for the external (flywheel) load is calculated by subtracting the sum of auxiliary load from the corrected gross flywheel out put power. Typical auxiliary loads are radiator cooling fans, hydraulic pumps, air compressors and battery charging alternators.

ALTITUDE CAPABILITY
Altitude capability is the maximum altitude above sea level at standard temperature and standard pressure at which the engine could ..velop full rated output power on the current performance data set. ..tandard temperature values versus altitude could be seen on TM2001.

Engines with ADEM MEUI and HEUI fuel systems operating at conditions above the defined altitude capability derate for atmospheric pressure and temperature conditions outside the values defined, see TM2001. Mechanical governor controlled unit injector engines require a setting change for operation at conditions above the altitude defined on the engine performance sheet. See your Caterpillar technical representative for non standard ratings.

REGULATIONS AND PRODUCT COMPLIANCE
TMI Emissions information is presented at 'nominal' and 'Potential Site Variation' values for standard ratings. No tolerances are applied to the emissions data. These values are subject to change at any time. The controlling federal and local emission requirements need to be verified by your Caterpillar technical representative. Log on to the Technology and Solutions Divisions (T&SD) web page (https://pdgt.cat.com/cda/layout) for information including federal regulation applicability and time lines for implementation. Information for labeling and tagging requirements is also provided.

NOTES:
Regulation watch covers regulations in effect and future regulation changes for world, federal, state and local. This page includes items on the watch list where a regulation change or product change might be pending and may need attention of the engine product group. For additional emissions information log on to the TMI web page.

Additional product information for specific market application is available.
Customer's may have special emission site requirements that need to be verified by the Caterpillar Product Group engineer.

EAT REJECTION DEFINITIONS:
Diesel Circuit Type and HHV Balance : DM9500

EMISSIONS DEFINITIONS:
Emissions : DM1176

PERFORMANCE DATA[DM2267]

SOUND DEFINITIONS:
Sound Power : DM8702

Sound Pressure : TM7080

RATING DEFINITIONS:
Agriculture : TM6008

Fire Pump : TM6009

Generator Set : TM6035

Generator (Gas) : TM6041

Industrial Diesel : TM6010

Industrial (Gas) : TM6040

Irrigation : TM5749

Locomotive : TM6037

Marine Auxiliary : TM6036

Marine Prop (Except 3600) : TM5747

Marine Prop (3600 only) : TM5748

MSHA : TM6042

Oil Field (Petroleum) : TM6011

Off-Highway Truck : TM6039

On-Highway Truck : TM6038

Date Released : 11/23/11

Attachment 16

EUENGINE9

Pending Manufacturer submittal of specifications

EU Engine 10

Attach 17

750DFHA

ONAN GENERATOR SET

EXHAUST EMISSION DATA SHEET

ENGINE

Model: Cummins QST30-G1
Type: 4 Cycle, 50°V 12 Cylinder Diesel
Aspiration: Turbocharged and Aftercooled
Compression Ratio: 14:1
Emission Control Device: Turbocharger and Aftercooler

Bore: 5.51 in. (140 mm)
Stroke 6.5 in. (165 mm)
Displacement: 1860 cu. in. (30.5 liters)

PERFORMANCE DATA	STANDBY	PRIME
BHP @ 1800 RPM (60 Hz)	1135	1030
Fuel Consumption (gal/Hr)	54.7	49.0
Exhaust Gas Flow (CFM)	6160	5546
Exhaust Gas Temperature (°F)	895	850

EXHAUST EMISSION DATA

(All Values are Grams per HP-Hour)

COMPONENT	STANDBY	PRIME
HC (Total Unburned Hydrocarbons)	0.22	0.23
NOx (Oxides of Nitrogen as NO2)	7.97	8.23
CO (Carbon Monoxide)	0.14	0.12
PM (Particulate Matter)	0.09	0.09
SO_2 (Sulfur Dioxide)	0.06	0.58

TEST CONDITIONS

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load (± 2%).
Pressures, temperatures, and emission rates were stablized.

Fuel Specification:	ASTM D975 No. 2-D diesel fuel with 0.2% sulfur content (by weight), and 42-50 cetane number.
Fuel Temperature:	99 ± 9 ° F (at fuel pump inlet)
Intake Air Temperature:	77 ± 9 ° F
Barometric Pressure:	29.6 ± 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb dry air

The NOx, HC, CO and PM emission data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subject to instrumentation, and engine to engine variability. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

#11 H-6/A-6/I-6 Gas St EUENGINES 11 Attachment 18

900DFHC
ONAN GENERATOR SET
EXHAUST EMISSION DATA SHEET

ENGINE

Model: Cummins QST30-G3
Type: 4 Cycle, 50°V 12 Cylinder Diesel
Aspiration: Turbocharged and Aftercooled
Compression Ratio: 14:1
Emission Control Device: Turbocharger and Aftercooler

Bore: 5.51 in. (140 mm)
Stroke 6.5 in. (165 mm)
Displacement: 1860 cu. in. (30.5 liters)

PERFORMANCE DATA	STANDBY	PRIME
BHP @ 1800 RPM (60 Hz)	1350	1220
Fuel Consumption (gal/Hr)	60.2	54.6
Exhaust Gas Flow (CFM)	6945	6365
Exhaust Gas Temperature (°F)	897	867

EXHAUST EMISSION DATA

(All Values are Grams per HP-Hour)

COMPONENT	STANDBY	PRIME
HC (Total Unburned Hydrocarbons)	0.19	0.18
NOx (Oxides of Nitrogen as NO2)	7.58	7.28
CO (Carbon Monoxide)	0.21	0.18
PM (Particulate Matter)	0.08	0.08
SO_2 (Sulfur Dioxide)	N/A	N/A

TEST CONDITIONS

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load (± 2%).
Pressures, temperatures, and emission rates were stablized.

Fuel Specification:	ASTM D975 No. 2-D diesel fuel with 0.2% sulfur content (by weight), and 42-50 cetane number.
Fuel Temperature:	99 ± 9 ° F (at fuel pump inlet)
Intake Air Temperature:	77 ± 9 ° F
Barometric Pressure:	29.6 ± 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb dry air

The NOx, HC, CO and PM emission data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subject to instrumentation, and engine to engine variability. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

HANDS & ASSOCIATES, INC.

500 Griswold, Suite 1650
Detroit, MI 48226
Phone (313)-963-8870
Fax (313) 963-8876

April 11, 2013

Terseer Hemben, DM
Environmental Engineer
Michigan Department of Environmental Quality
Detroit District Office
3058 W. Grand Blvd, Suite 2-300
Detroit, MI 48202

RE: Henry Ford Hospital (K1271) "Notification of Change" Form for ROP

Dear Terseer:

On behalf of Henry Ford Hospital, Detroit, please find the following Notification of Change form and certification, related to the Hospital's ROP.

The forms were completed using the MDEQ Guidance document "Life after ROP, Renewable Operating Permit Reporting & Revisions" (pages 2-6 and 2-7), based on the situations described in the forms. If this is not the correct method/form, please advise.

Thank you and please feel free to call if you have any questions about this submittal.

Sincerely,
HANDS & ASSOCIATES, INC.

Charles Barker

HANDS & ASSOCIATES, INC.

500 Griswold, Suite 1650
Detroit, MI 48226
Phone (313)-963-8870
Fax (313) 963-8876

April 11, 2013

USEPA
Air Compliance Data
Air and Radiation Division
Attn: Permits - Michigan
77 West Jackson Boulevard
Chicago, IL 60604

RE: Henry Ford Hospital (K1271) Notification of Change Form and certification

Dear Michigan Air Permits Division:

On behalf of Henry Ford Hospital, Detroit, please find the following documents:

M-001 Notification of Change Form and certification.

Please feel free to call if you have any questions about this submittal.

Sincerely,
HANDS & ASSOCIATES, INC.

Charles F. Barker

Michigan Department of Environmental Quality
Air Quality Division

RENEWABLE OPERATING PERMIT
M-001: RULE 215 CHANGE NOTIFICATION OR RULE 216 AMENDMENT/MODIFICATION APPLICATION

This information is required by Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment.

Please type or print clearly. Complete this form for changes to be made to the Renewable Operating Permit (ROP) after the ROP is issued. Refer to the instructions for detailed information including guidance on the types of changes. Items 1 - 7 and 14 must be completed for all submittals. Additional items that must be completed for each category are identified in Item 7.

Form Type **M-001**	1. SRN K1271	2. ROP Number MI-ROP-K1271-2012
3. Stationary Source Name Henry Ford Hospital		
4. Street Address 2799 W. Grand Blvd		
5. City Detroit		6. County Wayne

7. Submittal Type - *The submittal must meet the criteria for the box checked below. Check only one box.*

- ☐ **Rule 215(1) Notification of change.** *Complete Items 8 – 10.*
- X☐ **Rule 215(2) Notification of change.** *Complete Items 8 – 10.*
- ☐ **Rule 215(3) Notification of change.** *Complete Items 8 – 11.*
- ☐ **Rule 216(1)(a)(i)-(iv) Administrative Amendment.** *Complete Items 8 – 10.*
- ☐ **Rule 216(1)(a)(v) Administrative Amendment.** *Complete Items 8 – 13. Results of testing, monitoring & recordkeeping must be submitted. See detailed instructions.*
- ☐ **Rule 216(2) Minor Modification.** *Complete Items 8 – 12.*
- ☐ **Rule 216(3) Significant Modification.** *Complete Items 9 – 12. ROP application forms are required. See detailed instructions.*
- ☐ **Rule 216(4) State-Only Modification.** *Complete Items 8 – 12.*

8. Effective date of the change. (MM/DD/YYYY) 04/29/2013	9. Change in emissions? ☐ Yes	X☐ No (reduced)

10. Description of Change - *Describe any changes or additions to the ROP, including any changes in emissions and/or pollutants that will occur. If additional space is needed, complete an Additional Information form (AI-001).*

Dismantle and Remove the emission unit: 16.3 mmBtu/hr boiler listed in the ROP as EUCLBOILER.

Dismantle and remove emission units: EUGENGINE1, EUENGINE2, EUENGINE3 These are three electrical generators used for peak shaving or emergencies installed in 1967 (currently disengaged emission units -- not yet dismantled)

Additional information: HFHS will add 3 smaller (1.67 mmbtu/hr each) boilers to serve their sterilization process. These are natural gas fired boilers that are exempt from a Permit to Install per Rule R336.1282, but are mentioned here for completeness.

11. New Source Review Permit(s) to Install (PTI) associated with this application? ☐ Yes X☐ No

If Yes, enter the PTI Number(s) _____ _____ _____ _____ _____

12. Compliance Status - *A narrative compliance plan, including a schedule for compliance, must be submitted using an AI-001 if any of the following are checked No.*

a. Is the change identified above in compliance with the associated applicable requirement(s)? ☐ Yes ☐ No

b. Will the change identified above continue to be in compliance with the associated applicable requirement(s)? ☐ Yes ☐ No

c. If the change includes a future applicable requirement(s), will timely compliance be achieved? ☐ Yes ☐ No

13. Operator's Additional Information ID - *Create an Additional Information (AI) ID for the associated AI-001 form used to provide supplemental information.*

AI

M-001 Instructions

14. Contact Person – *Name, Telephone Number and / or Email Address*
Charles Barker, Hands & Associates, Inc. (313) 506-5643 cfbarker@hands-assoc.com

NOTE: A CERTIFICATION FORM (C-001) SIGNED BY A RESPONSIBLE OFFICIAL MUST ACCOMPANY ALL SUBMITTALS

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MDEQ-Air Quality
3058 W. Grand Blvd.
Suite 2-300
Detroit, MI 48202

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

RECEIVED
APR 22 2013
Air Quality Division
Detroit Office

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7012 3050 0002 1631 6575

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

USEPA-Attn: Permits, Mich.
77 W. Jackson Blvd.
Chicago, IL 60604

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X L. Owens ☐ Agent ☐ Addressee

B. Received by (Printed Name) L Owens C. Date of Delivery 4-17-13

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7012 3050 0002 1631 6636