

**DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Self Initiated Inspection**

N295025300

FACILITY: Eaton Corporation - Marshall Proving Ground		SRN / ID: N2950
LOCATION: 19218 B DRIVE S, MARSHALL		DISTRICT: Kalamazoo
CITY: MARSHALL		COUNTY: CALHOUN
CONTACT: Gipp Klein, EHS Manager, Galesburg and Marshall, MI facilities		ACTIVITY DATE: 05/06/2014
STAFF: Rex Lane	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Self Initiated Inspection		
RESOLVED COMPLAINTS:		

On May 6, 2013, Air Quality Division (AQD) staff (Rex Lane) arrived at Eaton Proving Ground located at 19218 B Drive South, Marshall, Michigan at 2:10 pm to conduct an unannounced air quality inspection. The facility was last inspected on September 8, 2010 and was compliant at that time. The facility entrance has a security gate and office and staff provided a business card to the officer and stated the purpose of their visit. Staff pulled over to the side of the security building while the officer made arrangements to have someone escort staff around the facility. The officer came over a few minutes later to have staff sign in, get a visitor badge, etc. and informed staff that a Mr. Ben Crane, Facilities Manager would be out soon. Shortly thereafter, Mr. Crane arrived and staff again stated the purpose of their visit and provided him with their ID credentials, a business card and a copy of MDEQ's Environmental Inspections brochure. Mr. Crane indicated that the AQD's previous contact, Mr. Vincent Paige has been replaced by Mr. Gipp Klein, EHS Manager, whose office is located at Eaton's facility in Galesburg, Michigan.

Eaton Proving Ground is an automotive research and development facility that has operated at this location since 1967. This facility primarily tests truck transmission and engine components in two main buildings, Administration and Technical, and the facility also has a test track and several smaller outbuildings for storage and vehicle maintenance along with a conference center. The facility has between 200 – 250 associates and operates one shift per day Monday through Friday.

The facility tour started in the Administration building which primarily tests drivetrain components and superchargers. The majority of the testing rooms use electrically and hydraulically driven equipment to test components. The Administration building currently has one diesel engine (Komatsu) test cell rated at 255 bhp which was not in operation at the time of the inspection. Staff went into a nearby lab room that contained a powder coat booth and associated oven and a small sand blast cabinet to coat and strip coating from helical rotors used in the superchargers. The filters in the powder coat booth appeared to be in good shape. The powder coat process is exempt from air use permitting under Rule 287(d) and the sand blast cabinet is exempt under Rule 285(l)(vi)(B). There is a TIG/MIG welding process that is being moved to the machine shop that has a down draft vent to the outside air. The welding equipment is exempt from permitting under Rule 285(i). The maintenance garage had a traditional cold cleaner and a spray booth style cold cleaner with a front-facing door that remains closed until the operator steps on to a mat. Staff advised Mr. Crane that the open lid on the traditional cold cleaner needed to be kept closed when not in use in order to meet the air use permitting exemption under Rule 281(h). The spray booth style cold cleaner is exempt under Rule 285(r)(iv). Staff provided Mr. Crane with MDEQ stickers to post near these units that contain information on the Part 6 and 7 rules concerning unit operations. The cold cleaners use a 100% mineral spirits solvent (MSDS attached). The maintenance garage also had a small paint booth with filter panels that uses only paint spray cans which is exempt under Rule 287(b).

The Technical building is used primarily to test engine valve train components. As in the Administration building, the majority of the testing rooms use electrically and hydraulically driven equipment to test the valve train components. The Technical building currently has two gas engine (Volvo) test cells rated at 302 bhp which were in operation at the time of the inspection. Staff stepped outside to observe the stacks for these engine test cells and no visible emissions were noted at the time of the inspection. The exhaust stacks appeared to meet diameter and height limits in the permit and were fitted with flap caps. The maintenance garage area is set up with very similar equipment to the Administration Building with two cold cleaners that are exempt under Rule 281(h) and 285(r)(iv) and a small paint booth with filter panels that uses only paint spray cans which is exempt under Rule 287(b). There is a 0.3 MMBtu/hour hot water boiler that provides additional heat to the office area that was inspected by MI LARA on 1/20/14 and is exempt from permitting under Rule 282(b)(i).

Staff asked Mr. Crane about fuel consumption records and NOX and CO emission calculations that are required to be maintained under the facility's synthetic minor air use permit to install (PTI) No. 34-98B. He said that Mr. Klein who was at their Galesburg facility today maintains this information and provided staff with his email and phone contact information. Staff thanked Mr. Crane for his time and left the facility around 3:45 pm.

On 5/13/14, staff contacted Mr. Klein via email to obtain usage and emission records to determine compliance with PTI No. 34-98B. This information was provided by Mr. Gipp Klein and Mr. Scott Fergon (hereafter "Eaton staff") to staff during a meeting at the facility on May 30, 2014. A summary of the equipment included in PTI No. 34-98B is listed below with associated compliance evaluation comments:

#### EU-Generator (Technical Building):

The facility is maintaining monthly and 12-month rolling natural gas usage records for this generator. This natural gas fired emergency generator (EU-G-001) is adjacent to the Technical Building and provides power to the campus server room in the event of an outage which is exempt from permitting under Rule 285(g). Based on facility records, the emergency generator was installed in 1995 and is now subject to 40 CFR Part 63, Subpart ZZZZ (aka RICE MACT). Staff did not evaluate compliance with the RICE MACT since our agency has not taken delegation for this regulation from USEPA.

#### EU-Heater (Facility Wide air handling units, ovens, heaters and hot water boilers):

The facility is maintaining an inventory of all air handling units, heaters, ovens and hot water boilers for the entire source. The facility is maintaining monthly and 12-month rolling natural gas usage records for EU-Heater. Based on a facility records, the April 2014 12-month rolling gas usage was 10.8 MMCF which is well below the permit limit in Condition 2.1 of 17 MMCF.

#### FG-Gas Dynos:

The permit has daily and 12-month rolling gasoline usage limits for gas engine test cells that are operated in a thermal shock cycle. According to Eaton staff, the facility has never operated the gas engine test cells under a thermal shock cycle since permit issuance. The permit also has daily and 12-month rolling gasoline usage limits for gas engine test cells that are operated under a performance cycle. The facility is maintaining daily, monthly and 12-month rolling usage records for FG-Gas Dynos. Based on facility records, the daily maximum consumption rate observed over the past year was 52 gallons per day which is well below the permit limit in Condition 3.3 of 1,898 gallons. The highest observed 12-month rolling gas usage was 5,399 gallons in May 2014 which is in compliance with Condition 3.4 limit of 33,296 gallons.

#### FG-Diesel Dynos:

Condition 4.1 establishes a 12-month rolling time period diesel usage limit of 317,219 gallons. The facility is maintaining monthly and 12-month rolling time period diesel usage records. The highest observed 12-month rolling diesel usage rate over the past year was 1,910 gallons which is < 1% of the allowable limit.

#### FG-Facility:

Conditions 5.1a and 5.1b limit source wide emissions of NOx and CO to 95.8 tons per year (tpy) and 89.9 tpy, respectively. The facility is maintaining monthly and 12-month rolling NOx and CO emission calculation records based on the emission factors listed in Appendix A of the permit. For April 2014, NOx emissions were 14.0 tpy and CO emissions were 37.9 tpy which is < 15% and 42% of their respective emission limits.

#### May 30, 2014 Meeting Discussion:

PTI No. 34-98B was issued in May 2005 and allows for seven engine test cells (4 gas; 3 diesel), one emergency generator and all natural gas fired air handling units, space heaters, ovens and hot water boilers up to a usage rate not to exceed 17 MMCF/year. The permit is not reflective of current operations because the facility has a total of three engine test cells and operates two additional emergency generators under exemption that are not included under EU-Generator in the permit. Furthermore, there are permit conditions for operating the gas engine test cells under thermal shock duty and this type of testing has not been conducted at this location. Staff recommended to Eaton staff that they consider submitting an application to modify PTI No. 34-98B so it reflects current operations.

A diesel fired emergency generator (EU-G-003) installed south of the administration building is used to provide fire protection service in the event of a power outage is exempt from permitting under Rule 285(g). EU-G-003 was manufactured and installed in 2013 which makes the emission unit subject to 40 CFR Part 60, Subpart IIII (aka CI NSPS). The Conference building (aka Eaton Lodge) also has a natural gas fired emergency generator (EU-G-002) rated at 45 bhp that was manufactured and installed in 2012 along with a small HVAC system. Staff did not request a tour of this building during the inspection since it did not contain any other process equipment and the listed equipment would be considered to be exempt from permitting. EU-G-002 is subject to 40 CFR Part 60, Subpart JJJJ (aka SI NSPS). The emergency generators are in compliance with 40 CFR Part 63, Subpart ZZZZ provided they are in compliance with applicable requirements of 40 CFR Part 60, Subpart IIII or JJJJ. Staff did not evaluate compliance with the RICE MACT since our agency has not taken delegation for this regulation from USEPA. Eaton is using an outside contractor to perform required maintenance on all three emergency generators. Staff informed Mssrs. Klein and Fergon that these units are required to be fitted with non-resettable hour meters and use records maintained.

Staff also provided Eaton with a copy of an administrative consent order (AQD No. 9-2006) that was entered into in 2006 for a minimum effective term of five years. If the facility believes that they have met the provisions of consent order AQD No. 9-2006, they may submit a written certification under Paragraph 20 that the company has fully complied with the requirements of the order to the AQD Enforcement Unit in Lansing and request termination of the order.

At the time of the inspection and based on a review of records received following the inspection, it appears that the facility is in compliance with PTI No. 34-98B and applicable state air quality regulations. -RIL

NAME RILDATE 5/30/14SUPERVISOR 10/5/30/2014

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data.

In the second section, the author outlines the various methods used to collect and analyze the data. This includes both manual data entry and the use of specialized software tools. The goal is to ensure that the data is both accurate and easy to interpret.

The third section provides a detailed breakdown of the results. It shows that there is a significant correlation between the variables being studied. This finding is supported by statistical analysis and is consistent with previous research in the field.

Finally, the document concludes with a series of recommendations for future research. It suggests that further studies should be conducted to explore the underlying causes of the observed trends. This will help to develop more effective strategies for addressing the issues at hand.