M4780
MANUAL

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

M478028383

FACILITY: ROUSH INDUSTRIES		**SRN / ID:** M4780
LOCATION: 36630 COMMERCE, LIVONIA		**DISTRICT:** Detroit
CITY: LIVONIA		**COUNTY:** WAYNE
CONTACT: Robert Mullenax , Manager		**ACTIVITY DATE:** 01/08/2015
STAFF: Terseer Hemben	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Dynamometer Testing-Scheduled Compliance Inspection		
RESOLVED COMPLAINTS:		

INSPECTED BY : **Terseer Hemben, MDEQ**

PERSONNEL PRESENT : **Robert Mullenax, Manager**
FACILITY PHONE NUMBER : **(734)-779-7647**
FACILITY FAX : **(734) - 779-7915**
DATE OF INSPECTION : **1/8/2015**
SRN: M4780
Précis: The compliance evaluation adopts the conditions stipulated in Federal and State regulatory rules -
Federal:- 40 CFR 52.21
State Rule:- R 205, R 225, R 702, R 213, R 2001, R 2003, R 2004, R 910

FACILITY BACKGROUND: ROUSH INDUSTRIES

Roush Industries is an engineering and development company specializing in the area of high-performance engines and related components, such as powertrains, and instrumentation. In addition, Roush owns and operates, produces, and markets merchandise associated with the automobile racing team.

As part of the operations, Roush owns a group of buildings along the Levan Road Industrial corridor in the Livonia community. Operations of the engineering and development business take place in three buildings designated as Bldg.1, 15 and 16. The operations are primarily related to testing of performance and durability of internal combustion engines and related components. About 110 employees work in Bldg. 1, less than 20 employees work in Bldg. 15, and 7 work in Bldg. 16. The three buildings are grouped as a single stationary source according to Title V determination. These three buildings met the 3 criteria for classification: 1) the properties are contiguous; 2) the properties are under common ownership and control; 3) operations at all the three buildings fall under the same standard industrial classification major group (the 87 group, which comprises engineering, accounting and related services).

There are 20 internal combustion engine test cell in Bldg. 1. These test cells are exempt per 285 (g) thus the test cells' operation is not restricted by New Source Review (NSR) permit conditions. The test cells in buildings 15 and 16 (which contain 12 and 9 internal combustion test cells, respectively) were recently installed. The operation of the test cells is restricted by the NSR requirements. Currently, the test cells in building 15 operate per terms and conditions put forth in MI-ROP-M4780-2010. Test cells in Bldg. 16, which are the most recently installed at the facility, are used strictly for durability testing of engines and related parts. The Bldg. 16 test cells operate per under the terms and conditions of Renewable Permit No. MI-ROP-M4780-2010. In overall, the facility operates under NSR permit requirements.

The test cells are typically operated in two shifts, six days per week, and 52 weeks per year. Test cells primarily use unleaded gasoline-fired engines, but some engines are fueled by methanol, compressed natural gas, and LPG. The permits do not limit the amount of fuel type used in the testing. The permits limit total heat input to the engines tested in the test cells, both on a daily and monthly basis.

Practically, the Bldg. 15 test cells use gasoline with Octane Numbers 87 and 93 with typical run time of 4 hrs, and Diesel engines. These cells are run with or without catalyst conversion technology. The test cells are equipped with analyzers for emissions tracking. The Bldg. 16 carries out durability testing that last 4-6 hours long. Engines run continuously for 4 hours. The Bldg 15 shares two 12,000 gallon fuel tanks with Bldg 16. Bldg. 16 does not use Liquefied gas. Bldg. 1 is equipped with test cells that met exemption 285(g) conditions. The engines were installed before 1970, and shares two 4000 gallon, two 12000 gallon tanks with Bldg. 16. Durability testing takes 6 days a week employing 2 shift schedules. Roush replaces the engines in Bldg. 1 with reconditioned dynamometers only.

INSPECTION NARRATIVE

I arrived at the premises of Roush Industries on January 8, 2015 at 1010 hours for a scheduled inspection at Roush Industries facility. The purpose of the inspection was to determine annual compliance with the source's ROP conditions and operational limits. Temperature at the hour was 1.9 F with wind speed 17.3 mph coming from the SW, and humidity 66%. I met with Robert Mullenax. Robert and I went through a pre-inspection conference in one of the Bldg. 15 office rooms. Mr. Robert Mullenax informed me the computer system for the facility was down. Technical consultants were at the site working on repairing the system. Mr. Mullenax walked me through the facility to inspect the test cells. All test cells were shut down due to the computer failure. I left the area at 1100 hours.

COMPLAINT/COMPLIANCE HISTORY:

Roush Industries has not been a source of citizen air quality complaints since the last annual inspection.

OUTSTANDING CONSENT ORDERS:

The consent order entered into by Roush Industries with the AQD following a previous violation is no longer enforceable owing to a mutual decision to terminate.

OUTSTANDING LOV'S:

None

OPERATING SCHEDULE/PRODUCTION RATE:

The facility is capable of operating 24 hours per day, 365 days per year. At the time of this inspection, the facility was operating at lesser hours a day than usual (for Bldg. 15 & 16) with several test cells setting idle. Bldg. 1 was active with research projects.

EQUIPMENT AND PROCESS CONTROLS:

Roush operates engine test cells in the three buildings: 1, 15 and 16.

APPLICABLE RULES/PERMIT # MI-ROP-M4780-2010 CONDITIONS:

Permit # MI-ROP-M4780-2010 Conditions require the following fulfillment by Roush Industries (RI):

Bldg 16

1. In compliance - RI demonstrated there has not been any modification to any Bldg16Tcells system or process at the facility in the last 12 months. The attached response from RI stated no changes had occurred in Bldg. 16. Staff verified through tour of the facility [Cover Pg. item# 1]

2. In compliance – RI demonstrated that the double ended test cells in Bldg. 16 were not operated simultaneously. Response from RI stated one controller is located in the center of two dynamometers in the combined test cell and it is incapable of running two engines simultaneously [Cover Pg. Item# 2].

3. In compliance-RI demonstrated the maximum emissions of NOx in Bld16Tcells did not exceed 6.0 tpy. based on 12-month rolling time period determined at each end of calendar month [SC I.1] Records for the last 12 months reflecting rolling average calculations indicated the highest NOx emission occurred at the end of month of December, 2014 in the amount 3.68 tpy [Doc.# 1].

4. In compliance – RI demonstrated the maximum amount of emissions of CO in Bld16Tcells did not exceed 1,510 pounds per consecutive 8 hours [SC I.2]. Records for the last 12 months indicated the highest CO emission took place on February 19, 2014 in the amount of 526 lbs. /8 hours [Doc. # 2].

5. In compliance – RI demonstrated the maximum amount of emissions of CO in Bld16Tcells did not exceed 65.3 tpy based on 12-month rolling time period determined at each end of calendar month [SC I.3]. Records for the last 12 months indicated the maximum emission of CO was 36.98 tpy. and occurred at the end of December, 2014 [Doc. # 1].

6. In compliance – RI demonstrated the maximum amount of 1, 3 Butadiene emission in Bldg16Tcells did not exceed 0.423 tpy. based on 12-month rolling time period [SC I.4]. Records for the last 12 months indicated the maximum emission of 1, 3-Butadiene was 0.00652 tpy., and occurred at the end of December, 2014 [Doc. # 1].

7. In compliance - RI demonstrated the maximum fuel usage in EU- TcellB16F6/G7 and EU-TcellB16H8/I9 did not exceed 20,000 gal/yr. based on 12-month rolling time period [SC II.1]. Records for the last 12 months indicated the maximum fuel usage in the Bldg. 16's Double Tcells was 6,991 Gallons/yr. and occurred in February, 2014 [Doc. # 1].

8. In compliance – RI demonstrated the Maximum fuel usage in Bldg16Tcells did not exceed 3,748 gallons/day based on daily time period [SC II.2]. Records for the last 12 months

indicated the maximum fuel usage in Bldg. 16 was 1,354 gallons/day, and occurred on February 7, 2014 [Doc. # 2, Response# 8].

9. In compliance – RI demonstrated the Maximum fuel usage in Bldg16Tcells did not exceed 160, 000gallon/yr. based on 12-month rolling time period [SC II.3]. Records for the last 12 months indicated the maximum fuel usage was 100,246 gallons/year and occurred at the end of December 2014 [Doc# 1, Response # 9].

10. In compliance – RI demonstrated each emission unit in Bldg16Tcells, except EU-TCellB16F6/G7 and EU-TCellB16H8/I9, was equipped and maintained with a catalytic converter [IV.1]. Records for the last 12 months indicated compliance with use of catalytic converter in specified cells. Document# 5 showed emissions were reduced in EU-TcellBldg16D4 compared to EU-TcellBldg15C on a 2.5L engine at 3750 rpm. NOx emissions decreased by 96%, CO emissions decreased by 95%, and 1,3 Butadiene decreased by 82% [Doc. # 1, Response# 10].

11. In compliance – RI confirmed that within 180 days after permit issuance, verification of NOx, CO, and 1, 3-Butadiene emission rates from a representative number of test cells in FG-Bld16TCells were tested, at owner's expense, in accordance with Department requirements and submitted to the AQD [SC V.1]. Response from RI indicated results from testing submitted to AQD on July 21, 2010 were determined to be in compliance. The results are on file Doc[Cover Pg. item# 11].

12. In compliance - RI demonstrated the fuel usage for FG-Bld16TCells was performed on a daily basis in a satisfactory manner [SC VI.1]. Records summary for the last 12 months indicated compliance. Daily records were tabulated [Doc. # 2].

13. In compliance – RI demonstrated the monthly and previous 12- months NOx emission calculation
records for FG-Bld16TCells were kept daily in a satisfactory manner. [SC VI.2] Records summary for
the last 12 months indicated compliance. Monthly records were tabulated [Doc. # 1].

14. In compliance - RI demonstrated monthly and previous 12-month CO emission calculation records for
FG-Bld16TCells were kept in a satisfactory manner [SC VI.3]. Records for the last 12 months indicated records summary were properly documented [Doc. # 1].

15. In compliance –RI demonstrated the 8-hour CO emission rate had been calculated based upon daily records prorated to an 8-hour rate [SC VI.4]. Records summary for the last 12 months indicating compliance were tabulated [Doc. # 2].

16. In compliance – RI demonstrated monthly and previous 12-month 1.3-butadiene emission calculation records for FG-Bld16TCells were kept in a satisfactory manner [SC VI.5]. Records summary for the last 12 months indicating compliance were tabulated [Doc. # 1].

17. In compliance – RI demonstrated daily fuel use records for FG-Bld16TCells were kept in a satisfactory manner [SC VI.6]. Records summary for the last 12 months indicating compliance were tabulated [Doc. #2].

18. In compliance – RI demonstrated monthly fuel use records for FG-Bld16TCells were kept in a satisfactory manner [SC VI.7]. Records summary for the last 12 months indicating compliance were tabulated [Doc. # 1].

19. In compliance- RI demonstrated gases from stacks were discharged vertically unobstructed to the ambient air [SC. VII]. Visual inspection verified compliance.

20. The Bldg. 16 unit has 7 employees [Cover Pg. item# 19]

Building 15.

21. In compliance – RI demonstrated there had not been any modification to any Bldg15Tcells system or process at the facility in the last 12 months. Response from RI stated no changes had occurred in Building 15 that would modify emissions for the building. The tour verified the evaluation.

22. In compliance – RI demonstrated the monthly and previous 12 month NOx emission calculation records for FG-Bld15TCells were kept in a satisfactory manner [3.71 tpy SC I.1]. Records summary for the last 12 months indicated the records were properly documented. The maximum amount of NOx emission was 0.684 tpy and occurred at the end of October, 2014 [Doc. # 3].

23. In compliance – RI demonstrated the 8-hour CO emission rate for FG-Bld15TCells had been calculated based upon daily records prorated to an 8-hour rate **[952 lb. /8 hour SC I.2].** The maximum amount of CO emission was 759 lbs. /8 hrs. and occurred at the end of March, 2014 [Doc.# 3].

24. In compliance – RI demonstrated monthly and previous 12-month CO emission calculation records for FG-Bld15TCells were kept in a satisfactory manner [83.3 tpy. based on 12-months rolling time period [SC I.2]. The maximum amount of CO emission was 15.698 tpy. and occurred at the end October, 2014 [Doc. # 3].

25. In compliance–RI demonstrated monthly and previous 12-month Lead emission calculation records for FG-Bld15TCells were kept in a satisfactory manner [0.132 tpy] based on 12-months rolling time period [SC I.5]. Records for the last 12 months indicated the amount of lead emission was 0 tpy. RI stated that leaded fuel had not been delivered or used at FG-Bld15TCells since October, 2014 [Doc.# 4, Response# 25]

26. In compliance - RI demonstrated monthly and previous 12-month 1.3-butadiene emission calculation records for FG-Bld15TCells were kept in a satisfactory manner [0.054 tpy.] based on 12-month rolling time period [SC I.4]. The maximum amount of 1, 3-Butadiene emission was 0.0010 tpy. and occurred at the end of October, 2014 [Doc. # 3].

27. In compliance - RI demonstrated the monitoring of fuel usage for FG-Bld15TCells was performed on a daily basis in a satisfactory manner 1,200 gal. /day for uncontrolled engines [SC II.1]. The maximum amount of fuel usage was 319 gallons per day and occurred on March 11, 2014 [Doc. # 4].

28. In compliance –RI demonstrated the monitoring of fuel usage for FG-Bld15TCells was performed on a daily basis in a satisfactory manner [3,815 gal. /day] for controlled engines [SC II.2]. The maximum fuel usage was 250 gal. /day. and occurred on January 31, 2014 [Doc.# 4].

29. In compliance - RI demonstrated the monitoring of fuel usage for FG-Bld15TCells was performed on a daily basis in a satisfactory manner [70,000 gal. /yr.] for uncontrolled engines based on 12-months rolling time period [SC II.3]. The maximum amount of fuel used was 12,168 gal/yr., and occurred at the end of October, 2014 [Doc. # 3].

30. In compliance –RI demonstrated the monitoring of fuel usage for FG-Bld15TCells was performed on a daily basis in a satisfactory manner [166,000 gal. /yr.] for controlled engines based on 12-months rolling time period [SC II.4]. The maximum amount of fuel used was 4,435 gal. /yr. and occurred at the end of February 2014 [Doc. # 3].

31. In compliance - RI demonstrated the monitoring of leaded fuel usage for FG-Bld15TCells was performed on a daily basis in a satisfactory manner [30,000 gal. /yr.] based on 12-months rolling time period [SC II.5]. The maximum amount of leaded fuel used was 0 gal. /yr. calculated at the end of December, 2014. [Doc. # 3].

32. In compliance - RI demonstrated the permittee did not use leaded gasoline in any of FG-Bld15TCells that were controlled by catalytic converters [SC III.1]. Response from RI confirmed leaded fuel had not been delivered to the facility since October of 2005 [Cover Pg. item# 31]

33. In compliance – RI demonstrated at least once per ROP term, verification of NOx, CO, and 1, 3 -Butadiene emission rates from a representative number of test cells in FG-Bld15TCells by testing, at owner's expense, in accordance with Department requirements, was performed and results communicated to the AQD [SC V.1]. Response from RI stated that emission testing results were submitted on July 21, 2010. The results on file show compliance with the condition requirement. [Doc.# 5, Cover Pg. item# 32].

34. In compliance - RI demonstrated permittee monitored, in a satisfactory manner, the fuel usage for controlled and uncontrolled engines in FG-Bld15TCells on a daily basis [SC VI.1]. The monitoring quality is reflected in records submitted by RI [Doc. # 4].

35. In compliance - RI demonstrated the permittee kept, in a satisfactory manner, monthly and previous 12-month NOx emission calculation records for FG-Bld15TCells [SC VI.2]. Records for the past 12 months indicated compliance [Doc. # 3].

36. In compliance – RI demonstrated the permittee kept, in a satisfactory manner, monthly and previous 12-month CO emission calculation records for FG-Bld15TCells [SC VI.3]. Records for the past 12 months indicated compliance [Doc. # 3].

37. In compliance - RI demonstrated the 8-hour CO emission rate was calculated based upon daily records, prorated to an 8-hour rate. Should the prorated emission rate exceed 90 percent of the limit, the permittee did keep 8-hour records for a minimum of two months until the emission rate fell below 90 percent of the limit [SC VI.4]. Records for the past 12 months indicated compliance. Roush stated an 8-hour rate for CO emissions based on daily records were prorated ton an 8-hour rate [Doc. # 4].

38. In compliance - RI demonstrated the permittee kept, in a satisfactory manner, monthly and previous 12-month lead emission calculation records for FG-Bld15TCells [SC VI.5]. Records for the past 12 months indicated compliance [Doc. # 3.]

39. In compliance – RI demonstrated the permittee kept, in a satisfactory manner, monthly and previous 12-month 1, 3-butadiene emission calculation records for FG-Bldg15TCells [SC VI.6]. Records for the past 12 months indicated compliance [Doc. # 3].

40. In compliance - RI demonstrated the permittee kept, in a satisfactory manner, daily fuel use records for FG-Bld15TCells. The records should specify the fuel usage for engines equipped with catalytic converters and the fuel usage for uncontrolled engines [SC VI.7]. Records for the past 12 months indicated compliance [Doc. # 4].

41. In compliance – RI demonstrated the permittee kept, in a satisfactory manner, monthly fuel use records for FG-Bld15TCells. The records should specify the fuel usage for engines equipped with catalytic converters and the fuel usage for uncontrolled engines [SC VI.8]. Records for the past 12 months indicated compliance [Doc. # 3].

42. In compliance - RI demonstrated the permittee kept, in a satisfactory manner, monthly leaded fuel use records for FG-Bld15TCells [SC VI.9]. Records for the past 12 months indicated compliance. Leaded fuel had not been delivered or used at FG-Bld15TCells since October, 2005 [Doc. # 4].

43. In compliance - RI demonstrated the permittee kept, in a satisfactory manner, records of the maximum lead content in the leaded fuel for each delivery [SC VI.10]. Response from RI

stated that leaded fuel had not been delivered to the facility since October of 2005 [Cover Pg. item# 42].

44. In compliance- RI demonstrated the gases 19. In compliance- RI demonstrated gases from stacks were discharged vertically unobstructed to the ambient air [SC. VII]. Visual inspection verified compliance.

Inspection Areas of Focus:

1. Building 1 – 22 uncontrolled cells –the area around the uncontrolled cells was neatly maintained. There were no liquid spills. The cells were not in operation at the time of inspection.
2. – Engine Dynamometer test cells: General safety and Hygiene the safety and hygiene around the dynamometers was satisfactory-
3. Building 15- Controlled cells- Engine Dynamometer test cells -The equipment were well up kept.
4. Building 16 – Controlled cells – Engine Dynamometer test cells-The equipment were well up kept.
5. Visible emissions on Bldg.1, 15 & 16Tcells –There were no visible emissions from stacks at the time of inspection.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:

This facility does not have nor is in need of a fugitive dust plan.

MAERS REPORT REVIEW:

Roush's, 2014 MAERS submittal is yet to be evaluated.

FINAL COMPLIANCE DETERMINATION:

Based on the 2015 inspection, the Roush Industries facility was determined to be in compliance with the applied rules and regulations requirement of permit #MI-ROP-M4780-2010. RI operated the facility in compliance with the permit conditions during the reporting period.

NAME th DATE 8/26/15 SUPERVISOR JK