

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
**ACTIVITY REPORT: Off-site Inspection**

P067756108

<b>FACILITY:</b> Kawasaki Motors Corp USA		<b>SRN / ID:</b> P0677
<b>LOCATION:</b> 5080 36th Street SE, GRAND RAPIDS		<b>DISTRICT:</b> Grand Rapids
<b>CITY:</b> GRAND RAPIDS		<b>COUNTY:</b> KENT
<b>CONTACT:</b> Kevin Kline , Senior Supervisor		<b>ACTIVITY DATE:</b> 11/17/2020
<b>STAFF:</b> David Morgan	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> MAJOR
<b>SUBJECT:</b>		
<b>RESOLVED COMPLAINTS:</b>		

At 2:00 P.M. on November 17, 2020, Air Quality Division (AQD) staff Dave Morgan conducted an off-site inspection of Kawasaki Motors Corp USA (Kawasaki) located at 5080 36th Street in Cascade Township. The purpose of the inspection was to determine the facility's compliance with Renewable Operating Permit (ROP) No. MI-ROP-P0677-2018 and state and federal air pollution regulations. The off-site inspection was conducted virtually in accordance with AQD Digital Inspection Procedures using Microsoft Teams. Kevin Kline, Senior Supervisor for R&D Testing was the site contact.

**FACILITY DESCRIPTION**

This Kawasaki facility conducts performance, durability and other testing on small engines up to 50 horsepower. The engines primarily burn gasoline but can also burn ethanol and gasoline/ethanol blends. The facility contains twenty engine test cells, fuel storage tanks and ancillary equipment. The facility is a major source of carbon monoxide (CO) emissions and is a minor source of hazardous air pollutants (HAPS); 40 CFR Part 63, Subpart P for Engine Test Cells does not apply.

**COMPLIANCE EVALUATION**

**FGTESTCELLS:**

The following is an inventory of permitted engine test cell emission units and permitted exhaust stacks. Each engine test cell is essentially a room which contains an engine dynamometer and other test equipment. The company only burns gasoline or ethanol blended fuels as limited by ROP No. MI-ROP-P0677-2018.

Stack Vent ID	Emission Units	Description
SV-EF5A	EUTEST1, EUTEST2, EUTEST3, EUTEST4, EUTEST5	Durability/endurance testing of engines up to 50 horsepower.
SV-EF5B	EUTEST6, EUTEST7, EUTEST8, EUTEST9	Durability/endurance testing of engines up to 50 horsepower.
SV-EF5C	EUTEST10, EUTEST11, EUTEST13, EUTEST14	Performance testing of engines up to 50 horsepower.
SV-EF5E	EUTEST12	Performance testing of engines up to 50 horsepower.
SV-EF5D	EUTEST15, EUTEST16, EUTEST17, EUTEST18, EUTEST19, EUTEST20	Rain, climactic, chassis and anechoic testing of engines up to 50 horsepower

It is noted that initially each test endurance cell had a conical vent hood which surrounded the engine exhaust and ducted to the corresponding permitted stack. This exhaust system has been modified which eliminated the conical hood and the exhaust is more directly exhausted which provides for better capture. AQD staff observed the new exhaust design within the test cell via video conference. The company also voluntarily installed a catalytic oxidizer on the endurance test cells, or referred to as "E-cells", (EUTEST1, EUTEST2, EUTEST3, EUTEST4, EUTEST5, EUTEST6, EUTEST7, EUTEST8, EUTEST9) that reduces CO emissions by 99% according to the manufacturer. This action was exempt from permitting under Michigan Air Pollution Control Rule 285(2)(f). It is also noted that the company does not need the catalytic oxidizer to comply with CO emission limits.

In addition, there is a separate general ventilation exhaust (or scavenge) for each test cell which is ducted to a corresponding stack. The scavenge exhaust is used as a safety measure to prevent the accumulation of flammable vapor in the room. There are five permitted stacks on the outside of the building that appear to meet the 48 feet above ground requirement. AQD staff observed these stacks virtually and it appears that there have been no changes to the stacks. In addition, there were no visible emissions observed from these stacks.

In addition, for safety, the company is monitoring CO levels in each test cell; if CO levels get too high then the system is shutdown.

**-Testing-**

The company will be required to test CO emissions within five years of the last test which was conducted on September 20, 2017.

**-Recordkeeping-**

The company is maintaining daily and monthly fuel usage records in accordance with the permit. The company uses a programmable logic controller (PLC) to monitor and record all fuel usage. AQD staff observed that the PLC was recording daily and monthly fuel usage. According to company records (attached), the company had the following fuel usage:

Month	Total Fuel Usage (gallons)	Highest Daily Fuel Usage (Gallons)	Fuel Limit (gallons)	Compliance?
Nov 2019	6,770	303	864 daily	
Dec 2019	5,887	314		Y
Jan 2020	6,454	369		Y
Feb 2020	7,705	694		Y
Mar 2020	3,566	360		Y
Apr 2020	1,155	257		Y
May 2020	5,568	301		Y
Jun 2020	6,469	393		Y
Jul 2020	3,948	303		Y
Aug 2020	2,908	159		Y
Sep 2020	5,975	355		Y
Oct 2020	5,621	347		Y
Total	62,026		73,000 12-month rolling	Y

The company is also maintaining records of monthly emissions for CO, benzene, 1,3-butadiene, formaldehyde, and acetaldehyde using emission factors found in Appendix A of the permit. Emissions for November 2019 through October 2020 were as follows:

Pollutant	Factor (lbs/gal)	Actual (tons)	Limit (tons per 12-month rolling)	Compliance	Comments
CO	6.57	38.34	239.8	Y	For all E-cell fuel usage, a CO control efficiency factor of 95% is applied.
Benzene	0.614	0.05	0.22	Y	
1,3butadiene	0.00207	0.001	0.08	Y	
formaldehyde	0.00339	0.012	0.12	Y	
acetaldehyde	0.0241	0.116	0.88	Y	

**FGCIRICEMACT:**

There is one emergency generator that is exempt from permitting under Rule 285(2)(g). Because the facility is not a major source of HAP emissions, the major source requirements of 40 CFR 63, Subpart ZZZZ do not apply to the generator. However, the area source requirements do apply and have been incorporated into ROP No. MI-ROP-P0677-2018. This unit has only operated for a total of 92 hours since installation and has only operated 8 hours since the last inspection in 2018. Maintenance on the unit is conducted by Caterpillar Inc.. Attached are preventative maintenance records for 2019 and 2020.

**FGCOLDCLEANERS:**

There is one aqueous cold cleaner used to wash parts. No non-compliance issues were identified.

**EUTANKS:**

There is one 2,000 gallon gasoline storage tank. This tank was evaluated under the original Permit to Install No. 230-15A as part of the permit project, however there are no applicable requirements specific to the tank.

**SUMMARY**

Kawasaki Motors Corp USA is evaluated to be in compliance. Records obtained during the inspection are attached to this report.

NAME David L. Ryan DATE 11/17/2020 SUPERVISOR HH