

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

N698970630

FACILITY: AVL POWERTRAIN ENGINEERING		SRN / ID: N6989
LOCATION: 1801 E ELLSWORTH RD, ANN ARBOR		DISTRICT: Jackson
CITY: ANN ARBOR		COUNTY: WASHTENAW
CONTACT: Steve Plewa , Environmental Health and Safety/Facilities Manager		ACTIVITY DATE: 01/24/2024
STAFF: Mike Kovalchick	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: On-site inspection of an engine test cell facility.		
RESOLVED COMPLAINTS:		

Major / ROP Subject Source. Full Compliance Evaluation (FCE) and Partial Compliance Inspections (PCEs) SRN N6989

Contact

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Purpose

On January 24, 2024, I conducted an unannounced compliance inspection of AVL Powertrain Engineering (Company) located in Ann Arbor, Michigan (Washtenaw County) at 1801 E. Ellsworth Road. The purpose of the inspection was to determine the facility's compliance status with applicable federal and state air pollution regulations, particularly Michigan Act 451, Part 55, Air Pollution Control Act and administrative rules, and the conditions of the Company's Renewable Operating Permit (ROP) number MI-ROP-N6989-2020, issued on July 21, 2020. This facility was last inspected on February 8, 2022, and found to be in compliance.

Background

Facility is located in a commercial business area of Ann Arbor. This facility houses twenty (20) different engine test cells, identified starting from #8 through #27. The numbering reflects seven (7) other test cells located at their Plymouth, MI location. This facility tests a host of vehicle components, from single cylinder test engines through large diesel semi-truck engines and all other powertrain-related equipment.

The Company has the capability to use gasoline, diesel, and natural gas in their test cells, though they have not used natural gas in recent years. (Note: More recently, some test cells are being powered by batteries.) They are minor for all criteria pollutants except for carbon monoxide (CO), which is listed in the ROP as having an emission limit that requires a Title V ROP permit. Historically, emissions have been well below permitted limits.

The throughput of fuel requires this facility to comply with provisions contained in 40 CFR Part 63, Subpart CCCCC for Nation Emission Standards for Hazardous Air Pollutants (NESHAP) at Gasoline Dispensing Facilities (GDF). This facility is an area source of HAP. The State of Michigan does not have delegation of this regulation.

Review of records for calendar year 2023 showed the following:

1.46 Tons of CO and 2.16 tons of NOX. The emission totals continue to reflect a declining trend noted previously mostly since the engines that they test have catalytic controls in place. The Company is currently considering whether it would make sense to apply for an opt-out permit and void their ROP based on future expectations of emission well below major thresholds.

Compliance Evaluation

During the inspection, the following test cells were active/operating: 8, 12, 14, 15, 17, 19 and 21. Test cells 8, 12, and 17 were being fired with gasoline; 14 & 15 with diesel, and 19 & 21 with batteries. Test Cell #9 which was offline, was inspected. This test cell is where they normally test NATO diesel engines; the same test cell that had opacity issues during a previous inspection. As a result, the Company installed a Diesel Particulate Filter (DPF) on this test cell. A spare DPF is kept on hand. The pressure drop on the DPF is monitored to determine when the DPF must be taken offline and sent offsite for refurbishment. The DPF was observed to be in place downstream of the engine. No opacity was noted coming from any of the stacks from the facility.

FGTESTCELLS (Compliant)

This flexible group (FG) is the section of the ROP that contains conditions for all 20 test cells. A spreadsheet of 12-month rolling emissions and fuel use for 2023 was reviewed. Fuel use records for diesel, gasoline, and natural gas are used to calculate facility emissions. (Note: Natural gas has not been used since 2022.) Aggregate gasoline and diesel use are limited to 392,692 gallons per 12-month rolling time. Gasoline is further limited to total yearly use of 150,000 gallons and 34,500 gallons of uncontrolled gasoline use. 12-month rolling totals for diesel and gasoline are at 35,249 gallons. Current 12-month rolling totals for gasoline usage was 4590. gallons. Current 12-month rolling totals for uncontrolled gasoline usage was 0 gallons.

The ROP requires opacity from the engine test cells to not exceed 20%. During a previous inspection, there was a 30-minute period where excess opacity was observed coming from a stack on the NW side of the building associated with engine test cell 17.) Opacity was estimated to about 35%. The test cell was being used to test a NATO military diesel engine. The Company resolved this issue by using an off the shelf aftertreatment diesel particulate filter (DPF) and installed this downstream on the engine out exhaust. The Company now uses a DPF on any engine system that has the

potential to generate opacity greater than 20%. (Most due not as they are already equipped with catalytic converter systems. Also, Gasoline Particulate Filters (GPF) are coming online.) Pressure drop is monitored across the device to ensure that it doesn't become plugged with particulate.

FGCOLDCLEANERS (Compliant)

The facility still maintains two cold cleaners in which they use mineral spirits. No halogenated solvents are used in this equipment. A total of 84 gallons was reported during 2023.

FGGDFMACT (Compliant)

This is the FG that describes the requirements under NESHAP CCCCCC for GDF area sources. There are three tanks identified as emission units under this part, two of which are sectioned tanks. These three existing tanks were installed on 4/14/2002 and are listed as follows: EUTANK1 – 19,000-gallon capacity, EUTANK2/3 – 7,500- and 11,500-gallon capacity, and EUTANK4/5 – 11,500- and 7,500-gallon capacity. The tanks are equipped with a Veeder Root system for tracking tank levels. During the previous inspection, Monthly fuel in August 2020 for EUTANK2 exceeded 10,000 gallons and thus exceeded the threshold set in 40 CFR 63.11116(b) and Special Condition VI.1 of this FG. This triggers additional requirements under NESHAP CCCCCC. Specifically, that the loading fill pipe be located near the bottom of the tank so that it is generally submerged when the tank is being filled. The Company verified on 9/29/20 that this tank meets the additional requirements under NESHAP CCCCCC. There are no current compliance concerns with this emission unit.

Compliance Determination

After on-site inspection and review of necessary record keeping, I have determined AVL to be in compliance with State of Michigan and federal air quality rules and regulations and MI-ROP-N6989-2020.

NAME Mike Koralchick

DATE 1/24/2024

SUPERVISOR 