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

N756466464

FACILITY: MARTIN TECHNOLOGIES		**SRN / ID:** N7564
LOCATION: 55390 LYON INDUSTRIAL DR., NEW HUDSON		**DISTRICT:** Warren
CITY: NEW HUDSON		**COUNTY:** OAKLAND
CONTACT: Chris Taylor , Facility Manager		**ACTIVITY DATE:** 02/10/2023
STAFF: Adam Bognar	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

On February 10, 2023, Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) staff, I, Adam Bognar conducted a scheduled inspection of Martin Technologies (the "facility") located at 55390 Lyon Industrial Drive, New Hudson, MI. The purpose of this inspection was to determine the facility's compliance status with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment, Great Lakes, and Energy, Air Quality Division (EGLE-AQD) rules; and Permit to Install No. 352-05A.

I arrived at Martin Technologies at around 1 pm. I met with Chris Taylor, Facility Manager. I identified myself and stated the purpose of the inspection. My previous contact at the facility, Brian Jones, has left the company. Chris showed me around the facility, explained current operations, and provided me with the records I requested.

Martin Technologies builds, tests, and evaluates automotive engines. This includes gasoline, diesel, and more recently, electric, and possibly hydrogen engines. The process includes designing, engineering, machining of parts, assembly, and testing the engines. The facility operates between 8 am and 5 pm Monday through Friday.

Previously, the facility was in the business of building portable engine testing equipment for other companies in the engine manufacturing business. According to Chris, this part of the business is not currently operated. I observed 8 portable engine test carts at the facility located in the permitted test bays. Chris stated that they are no longer in use. The two test bays closest to the dynamometer cells have been dismantled (pipes capped and equipment disassembled).

Chris stated that they do not do much dynamometer testing in recent years. Some of the dynamometers that were previously in the test cells were sold to a company in Mexico. There are currently five permitted test cells.

Cell 1 has not been used in the past year according to Chris. There was no dynamometer installed in this test cell during my inspection.

Cell 2 contains an eddy current dynamometer, but no engine. According to Chris this dynamometer could be used, but has not been used in the last year.

Cell 3 contains a brand new dynamometer that has not been used or hooked up to electricity. Chris stated they have had this dynamometer since 2020. They will use this if there is customer demand.

Cell 4 did not contain a dynamometer during this inspection.

Performance Cell - Chris stated the performance cell is the only test cell that gets used somewhat regularly. This cell contained a water brake dynamometer and a Mopart Helliphant engine.

There is an additional test cell that contains equipment to test hydrogen engines. According to Chris, this test cell was only used for a brief R&D activity and has not been used in the past year. Some of the equipment has been disconnected or removed. Chris stated that there are no plans to restart this testing. Based on my discussions with facility staff this test cell is exempt from Rule 201 requirements pursuant to Rule 283(2)(a).

In one section of the building I observed an employee in the process of building a race car engine. There are various machining equipment in the facility used to machine engine parts. This includes a lathe, mill machine, drill press, sand blaster, and other machining equipment. I observed that all of this machining equipment is exhausted to the general in-plant environment. Based on my observations, the machining equipment is exempt from Rule 201 requirements pursuant to Rule 285(2)(l)(vi)(B).

Permit to Install No. 352-05A

FGENGTESTING

This flexible group permits internal combustion engine testing equipment consisting of four engine dynamometer test cells for development and testing, one engine dynamometer test cell for performance engine testing, and eight test bays for non-loaded engine testing. Engines tested in the dynamometer test cells burn unleaded gasoline, leaded gasoline, and diesel fuels.

Chris was able to provide me with all the records I requested during my inspection. I reviewed records from January 2022 through January 2023.

Section I – Special Conditions (SC) 1,2,3: Establishes emission limits for FGENGTESTING. CO emissions are limited to 86.9 tons per year and 6.0 lb/gallon of gasoline. NOx emissions are limited to 35.7 tons per year. Based on the records provided to me, Martin Technologies meets these emission limits. CO emissions are reported at 0.16 tons for all of 2022. NOx emissions are reported at 0.0075 tons for all of 2022. A total of 148 gallons of fuel was used for testing engines during all of 2022. Chris stated that he is not sure if/when the engine testing business will pick up again.

Section II – Special Condition 1: States that the permittee shall only burn unleaded gasoline, leaded gasoline, and diesel in engines/test bays. Chris stated that these are the only types of fuel used. According to facility staff, the only storage tank on-site contains diesel fuel and 93 octane gasoline (premium). Leaded gasoline (racing fuel) is delivered in 5-gallon containers. The records I reviewed indicated that only these types of fuel are used.

Section II – Special Condition 2: Limits total fuel usage in FGENGTESTING to 62 gallons per hour. Of the 62 gallons per hour, the leaded gasoline usage shall not exceed 10 gallons per hour. These limits have not been exceeded based on the records I reviewed. There was only 1 month during the period I reviewed where the monthly fuel usage exceeded 62 gallons - in January 2022. Chris provided me records of daily fuel usage. Records of daily fuel usage in January 2022 show that the maximum amount of fuel used per day was 7 gallons on January 14, 2022. Chris further stated that it would be physically impossible for them to exceed these usage limits with the current equipment they have.

In a previous inspection, the manager, Brian, stated that operators used to watch the fuel gauges on the computer screen to ensure compliance with this limit, but now fuel usage is so low that this would never happen. Chris stated that it is very unlikely that Martin Technologies will come remotely close to these limits; however, he stated that he would make a note near the dynamometer computers that these limits exist. If the engine testing business starts to pick up again, it may become necessary for Martin Technologies to maintain hourly fuel use records as required by this permit.

Section II – Special Condition 3: States that total fuel usage for FGENGTESTING shall not exceed 117,000 gallons per 12-month rolling time period. Of the 117,000 gallons, the gasoline usage shall not exceed 27,000 gallons per 12-month rolling time period. Of the 27,000 gallons, the leaded gasoline usage shall not exceed 200 gallons per 12-month rolling time period. I verified that Martin Technologies maintains records of the usage of each fuel type separately. A total of 148 gallons of fuel was used in 2022.

Section V – Special Condition 1: States that upon request by the AQD District Supervisor, the permittee shall verify CO and/or NOx emission rates from FGENGTESTING by testing at the owners expense. AQD is not

requesting testing at this time. This test has never been completed based on the records I reviewed and remarks from past inspection reports.

Section VI – Special Conditions 1,2,3,4: Specifies recordkeeping requirements for FGENGTESTING. Martin Technologies must keep records of any test reports, number of days operated per month, gallons of fuel used per hour, gallons of each fuel used per month, rolling 12-month usage records of fuel usage (separate totals for total fuel, leaded gasoline, regular gasoline), and CO/NOx emission calculations on a monthly and 12-month rolling basis. Chris provided me with all of these records with the exception of hourly fuel usage data. I was able to determine compliance with the hourly fuel usage limits by looking at the facilities daily fuel usage.

FGFACILITY

Section I – Special Condition 1: Establishes a Title V opt-out limit for CO emissions of 89.8 tons per year. Martin Technologies reported a total of 0.219 tons of CO in all of 2022.

Section II – Special Condition 2: States that total fuel usage for the engines being tested in FGFACILITY shall not exceed 117,000 gallons per 12-month rolling time period. Of the 117,000 gallons, the gasoline usage shall not exceed 27,000 gallons per 12-month rolling time period. Based on the records I reviewed, a total of 148 gallons of fuel was used at Martin Technologies in all of 2022.

Section II – Special Condition 3: States that natural gas usage for FGFACILITY shall not exceed 70MM cubic feet per 12-month rolling time period. Based on the records I reviewed, total natural gas usage was 1.3MMCF in all of 2022. This gas was used for heating the facility via a ceiling mounted space heater. Based on the size of the space heater and building, the space heater is exempt from Rule 201 requirements pursuant to Rule 282 (2)(b) since the maximum heat input is less than 50,000,000 BTU/hr. None of this natural gas was used for engine testing based on the records I reviewed and conversations with Chris.

Section IV – Special Condition 1: Requires the permittee to install, calibrate, maintain, and operate in a satisfactory manner, a device to monitor and record the natural gas usage in FGFACILITY on a continuous basis. Chris stated that natural gas has not been used in any engines at the facility for around 10 years. I observed that the natural gas line has been disconnected from the test cell which used to test natural gas engines. There is a meter in this test cell, but it is no longer used. Martin Technologies uses data from their gas provider to maintain records of natural gas used for building heating purposes.

Section VI – Special Condition 1 & 2: Specifies recordkeeping requirements for FGFACILITY. Martin Technologies must keep records of the gallons of gasoline/diesel used per month, total gasoline (unleaded and leaded) usage on a 12-month rolling basis, total fuel used in engine testing (total gasoline and diesel) on a 12-month rolling basis, MMcf natural gas used per month and per 12-month rolling period, CO emission calculations on a monthly and 12-month rolling basis, and any other information that may be needed to quantify CO emissions. I verified that these records are maintained.

Heated Wash Tank

There is a heated wash tank used to clean parts. There is a steam vent that is ventilated through the roof to the outside air. A detergent is used in the parts cleaner, called Aquatene GM571. I collected the safety data sheet for Aquatene GM571 in a previous inspection. The detergent contains sodium carbonate, sodium metasilicate, oxirane methyl polymer, and diethylene glycol mono-butyl ether (3%). Based on my research, diethylene glycol mono-butyl ether is not a hazardous air pollutant as defined by the EPA. Based on my observations, the heated wash tank is exempt from Rule 201 requirements pursuant to Rule 281 (2)(k).

Cold Cleaners

There are two mineral spirits based cold cleaners on-site. The lids were closed during my inspection. Proper usage instructions were posted inside the cold cleaners on the bottom of the lid. The cold cleaners are approximately 2'x2'. Based on my research, mineral spirits have a Reid vapor pressure less than 0.6 psia (around 0.2 psia). I observed a device for draining solvent off parts. The cold cleaners comply with Rule 707 based on my

observations/research. Based on my observations, these cold cleaners are exempt from Rule 201 requirements pursuant to Rule 281(2)(h).

Storage Tanks
Chris led me to the storage tank area behind the facility. I observed a 15,000 gallon tank that is split into two separate 7,500 gallon chambers. According to Chris, one container contains diesel fuel and the other contains 93 octane gasoline. Based on my observations, these tanks are exempt from Rule 201 requirements pursuant to Rule 284(2)(g)(iii).

I did not check compliance with Rule 703 during this inspection. Under Rule 703, the tank is required to have a submerged fill pipe and a vapor balance system. Based on my brief research, the tank is subject to 40 CFR, Part 63, Subpart CCCCCC - National Emission Standards for Hazardous Air Pollutants for Gasoline Dispensing Facilities (MACT CCCCCC). I did not evaluate compliance with MACT CCCCCC. AQD has not taken enforcement delegation of MACT CCCCCC.

Hydrogen Testing
Chris stated that Martin Technologies may engage in testing hydrogen engines. Chris asked if this activity would require permitting. I told chris that a short 1-time test may be allowable under our R&D permit exemption; however, if Martin Technologies wants to test hydrogen engines on a more regular basis, then re-permitting may be required. This is partly because PTI No. 352-05A states that unleaded gasoline, leaded gasoline, and diesel are the only fuels allowed to be used in the engines being tested in FGENGTESTING. Burning hydrogen should cause less emissions than the current fuels used. It is possible that hydrogen testing on a more regular basis could meet another AQD permit exemption.

Compliance Determination
Based on my observations during this inspection and record review, Martin Technologies is operating in compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment, Great Lakes, and Energy, Air Quality Division (EGLE-AQD) rules; and Permit to Install No. 352-05A.

A violation notice was issued to Martin Technologies on June 14, 2022 for failing to provide records to the AQD, installing a hydrogen dynamometer without obtaining a permit to install, and for failing to submit a 2021 MAERS report. This violation will be resolved as a result of this inspection. Martin Technologies provided me with the records I needed to determine compliance with PTI No. 352-05A during this inspection. Martin Technologies is no longer operating a hydrogen engine at the facility. Martin Technologies submitted their 2021 MAERS report late in August 2022. Chris stated that he is working on submitting the 2022 MAERS report prior to the March 15, 2023 deadline.

NAME Adam Bognar DATE 3/6/2023 SUPERVISOR K. Kelly