

A8217
MANILA

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

A821763447

FACILITY: McLAREN PERFORMANCE TECHNOLOGIES		SRN / ID: A8217
LOCATION: 32233 W EIGHT MILE RD, LIVONIA		DISTRICT: Detroit
CITY: LIVONIA		COUNTY: WAYNE
CONTACT: Kristen Baumia, EHS Specialist		ACTIVITY DATE: 06/23/2022
STAFF: C. Nazaret Sandoval	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: FY 2022 Targeted Inspection		
RESOLVED COMPLAINTS:		

SRN: A8217

FACILITY ADDRESS: 32233 W EIGHT MILE RD, LIVONIA

REASON FOR INSPECTION: Targeted Inspection

INSPECTED BY: Nazaret Sandoval, AQD

INSPECTION DATE: 6/23/2022

PERSONNEL PRESENT: Kristen Baumia, McLaren EHS Specialist

1. FACILITY BACKGROUND AND REGULATORY ANALYSIS

McLaren Performance Technologies (McLaren), a subsidiary of Linamar Corporation, is located at 32233 West Eight Mile Road, Livonia, Michigan and has historically provided engine diagnostic testing services to engine manufacturers, automotive suppliers, and catalyst manufacturers. Within the last several years, due to a significant decrease in demand for conventional engine testing, the facility conducts electrical testing of drive train units, transmission components, and electrical engines.

The larger main building (Building 1) currently houses most of the offices, engine test cells, testing equipment, and cold cleaners. Building 2, located east of Building 1, houses electrical motor dynamometers, electric rotary actuators, and cold cleaners. McLaren is one of several commercial and light industrial establishments lining the north and south sides of Eight Mile Road. Residential neighborhoods lie in the rear of these facilities. The residential neighborhood to the south of McLaren borders the facility and is within an estimated 500 feet of the engine test cell building.

McLaren is a major stationary source under 40 Code of Federal Regulations (CFR) Part 52, Prevention of Significant Deterioration (PSD), due to the facility wide potential emissions of carbon monoxide greater than 250 tons per year. The source is subject to Title V (Renewable Operating Permit [ROP]) permitting regulations; the potential to emit for carbon monoxide (CO) exceeds 100 tons per year. McLaren is subject to 40 CFR 63, Subpart CCCCC, National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities. The potential to emit hazardous air pollutants (HAP) does not exceed 10 tons per year for any individual HAP nor 25 tons per year for all HAPs combined. Therefore, the Maximum Achievable Control Technology (MACT) standard (40 CFR 63 Subpart PPPPP) regulating engine test cells/stands at major HAP sources is not applicable to this facility. Storage tanks for volatile organic compounds at this facility do not exceed 75 cubic meters (19,813 gallons) volumetric capacity therefore the Standards of Performance for New Stationary Sources (NSPS) for volatile organic liquid storage tanks (40 CFR 60 Subpart Kb) is not applicable to emission units at the source. The facility also operates a natural gas fired emergency generator subject to 40 CFR Part 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.

In the current ROP, MI-ROP-A8217-2012, ten of the test cells (Cell Nos. 2, 3, 6, 8, 9, 11, 12, 14, 15, and 16) are equipped with catalytic converters for CO, nitrogen oxides (NOx), and volatile organic compound (VOC) control. The ten cells are grouped in a flexible group FG-TestCellsCC under permitted fuel restrictions. However, since the last ROP renewal, there have been changes in some of the listed cells. Cell Nos. 14, 15, and 16, have been permanently converted or removed. These changes will be reflected during the upcoming ROP renewal. In addition, there have been changes in Cell No. 9. Those changes will be described later in this section of the report.

There is another group of cells, “the grandfathered test cells”, which were installed when test cells were considered exempt. The original group consisted of Cell Nos. 1, 4, 5, 7, 10 and 13 and they historically operated with gasoline-only-fuel. Out of that group, Cells 4, 5, 7 and 13 have no fuel restrictions and emit uncontrolled to the atmosphere. These cells have not triggered Rule 201 or New Source Review because of a fuel change. As such, they will remain in the ROP under the flexible group (FG-TestCells) with minimal requirements, if they remain unmodified. Cell Nos. 1 and 10 have been modified as explained below.

During the inspection of 2019 it was observed that test cell 1, which formerly combusted gasoline, was testing a natural gas type burner. The project had started in November 2017 to test various generations of a prototype heating and cooling system. AQD requested a Rule 278(a) analysis to demonstrate that an exemption was applicable for this change in the method of operation at test cell 1. A letter provided by McLaren in January 2020 demonstrated that the fuel change at test cell 1 met the Rule 282(2)(b) exemption, was not excluded from exemption by Rule 278, and therefore did not require a permit to install under Rule 201. During the inspection of 6/23/2022 it was observed the facility is no longer conducting natural gas burner testing in Cell No. 1 and equipment relating to this testing has been removed.

Test cell 10 or EU-TESTCELL10 was issued permit to install (PTI) 67-05 to allow it to operate on unleaded gasoline without add-on emissions controls. PTI 67-05 was incorporated into the ROP. This permit has since been modified to allow for multiple fuels (unleaded gasoline, diesel, kerosene, compressed natural gas [CNG] and liquid petroleum gas [LPG]) and now requires a catalytic converter for emissions control. In the current PTI 67-05C, issued on 02/22/2018, test cell 10 is subject to CO and 1,3 butadiene emission limits along with fuel usage restrictions. PTI 67-05C is an active permit with requirements and conditions for EU-TESTCELL10 that has not yet been incorporated into the ROP.

Test cell 9 was modified to allow combustion of diesel, CNG, and LPG under PTI 32-22, issued on 3/29/2022. Test cell 9 is subject to CO and 1,3 butadiene emissions limits along with fuel restrictions. A catalytic converter was also required to be installed for emissions control, and the stack was raised to 40.1 feet high. Test cell 9 has been removed from the flexible group FG-TestCellsCC. PTI 67-05C and PTI 32-22 will be incorporated into the ROP during its renewal.

2. PROCESS OVERVIEW

McLaren currently has limited operation of conventional engine test cells. Dynamometers of different types and sizes allow the testing of different engines from chain saw engines up to truck engines. Internal combustion engines make the highest mechanical demands on their support and on the complete performance test bed. Electric, hydraulic and pneumatic motors can also be tested.

The catalytic converters are installed and monitored by McLaren and serve as pollution control devices. Catalytic converters control emissions from individual test cells and are inserted into the exhaust pipes leading out from the engine test stand; they appear as annular cylinders with a diameter larger than that of the exhaust pipe and are located between the engine and the muffler. The catalytic converter containers may be unbolted, removed from the exhaust line, replenished with active catalyst, and reinstalled. Cells used for testing engines with dual exhaust are equipped with two converters, one for each exhaust.

The combustion fuel is metered to the test stands from one of three above-ground, fixed-roof, vertical storage tanks bordering the main building's eastern edge or from fuel drums/containers stored in the test cell or fuel storage room. The test cells are housed individually in small rooms outlining the laboratory/workshop areas on the northeast side of the main building. Exhaust gases vent vertically out of the roof of the building (the presence of stacks on the east roof of the main building may be observed from ground level) through stacks ranging 29 feet to 40.1 feet in height, one stack dedicated for each test cell.

McLaren's clients deliver engines, the engines are secured in one of the test stands, and the engines are operated for the time, loads, and characteristics requested by the client. McLaren measures and records engine performance on computer consoles located outside the door of each engine test cell.

Currently, the facility houses seven cold cleaners containing mineral spirit solvent. Six of them are in the main building, Building 1, and one cold cleaner is located in Building 2 which houses electrical motor testing. All cold cleaners vent to the general in-plant environment. A paint spray booth is in a small room in Building 1. Paint usage is low; the booth is operated to coat engine equipment, building maintenance or prototype parts, as necessary. Paint is applied using a high-volume low pressure (HVLV) spray gun or applied by hand. Emissions from the paint area are vented through panel filters and a vertical stack.

Building 2 houses two electrical test cells, electric rotary actuators, test vehicle storage area, and one cold cleaner. Building 3 was demolished for the construction of an expanded office area and flexible manufacturing complex (completed in 2016).

3. COMPLIANCE HISTORY/COMPLAINTS

McLaren was determined to be in compliance with MI-ROP-A8217-2012 and PTI 67-05C during the previous inspection conducted in 2019. In addition, a Rule 278(a) letter demonstrated that the change in fuel usage from gasoline to natural gas, in test cell 1, was exempt from permitting pursuant to Rule 282(2)(b). This facility does not have a history of complaints.

4. OUTSTANDING CONSENT ORDERS

None

5. OUTSTANDING VIOLATION NOTICES

None

6. INSPECTION NARRATIVE

On June 23, 2022, the Michigan Department Environment, Great Lakes, and Energy (EGLE) Air Quality Division (AQD) inspector, Nazaret Sandoval, conducted an inspection of McLaren located at 32233 West Eight Mile Road, Livonia, Michigan. The inspection was conducted to determine the facility's compliance with applicable State and Federal air quality regulations, ROP No. MI-ROP-A8217-2012, PTI 32-22 and PTI 65-05C. McLaren is permitted for the operation of 16 engine test cells, seven cold cleaners, and a paint area.

At approximately 11:00 AM, AQD staff arrived onsite and entered the facility, stated the purpose for the inspection, and was greeted by Kristen Baumia, McLaren EHS Specialist, who provided information and tour of facility operations relating to air quality permits. At the opening meeting, the facility operations and record keeping requirements were discussed.

The facility currently has approximately 200 employees and operates during normal business hours (7 AM to 5 PM), although dyno cells may operate during evening and weekend hours, depending on client needs.

The current operational use of each test cell was discussed, and Ms. Baumia provided an updated inventory, as listed below.

Cell 1 – Last used for natural gas burner testing under permit exemption – Not in use.

Cell 2 – Converted to electric testing (spin rig)

Cell 3 – Converted to electric motor gear box testing

Cell 4 – Conventional engine testing

Cell 5 – Conventional engine testing

Cell 6 – Converted to electrical testing

Cell 7 – Conventional engine testing

Cell 8 – Conventional engine testing

Cell 9 – Conventional engine testing (controls were installed and cell was operational)

Cell 10 – Conventional engine testing

Cell 11 – Converted to electric testing (spin rig)

Cell 12 – Conventional engine testing

Cell 13 – Conventional engine testing

Cell 14 – Converted to electronics and networking rooms. Stacks removed (will not be included in ROP renewal).

Cell 15 – Converted to electronics and networking rooms. Stacks removed (will not be included in ROP renewal).

Cell 16 – Physically removed, replaced with machining and fabrication (will not be included in ROP renewal)

Following discussion of the test cell operation status, the records required in the ROP, PTI 67-05C and PTI 32-22 were discussed. Requested records were received on the day of the inspection, with the exemption of the emergency generator time log for the last 12-month, the fuel storage capacity information and a copy of the Building 1 first floor plan view, which were provided electronically on 6/30/2022.

Following the discussion of the operation status and records collection, a tour of the facility was provided.

The tour began at the expanded portion of Building 1 with observation of the transmission assembly area and dunnage washer. Any potential emissions are released to the general in-plant environment.

Following observation of the assembly area, the test cells were observed. Conventional engine test cells are set up similarly in every test cell room. The engine to be tested is secured in a cradle in the middle of the room. Extending out the back of the engine is a cylindrical driveshaft which connects to the dynamometer. The dynamometer measures engine characteristics and transmits the data to monitors outside the rooms. An exhaust pipe extends from the side of each engine and trails near the floor to the back of the room into a vertical muffler and then through the ceiling to the stack on the roof. The catalyst(s), if present, are located in shells between the engine and the muffler. An operator reads the gas meter each morning to determine the gasoline usage for the day. Backpressure, air to fuel ratio, and inlet to bed catalyst temperature readings are collected during testing for reporting purposes.

As indicated in the previous inspection report for year 2019, several of the test cells have been converted to electrical testing. At the time of the inspection on 6/23/2022, I observed that test cells 2, 3, 6, and 11 were used to perform electrical testing. Test cells 2, 3, and 6 had the gas lines removed. The previous inspection report indicated that it would take considerable investment to re-convert the cells to do conventional engine testing again. I did not verify if test cell 11 had the gas lines removed. It is unknown if test cell 11 could be converted back to conventional engine testing. Test cell 10 was observed with catalytic converters in place. Similarly, a catalytic converter had been installed for test cell 9 and the stack was raised to 40.1 feet high.

Following the engine test cells, the cold cleaners in Building 1 were observed. The cold cleaner lids were closed, and instructions were posted.

Within Building 1, the fabrication and machine shop were observed. The shop includes drill presses, lathes, and CNC machines. All emissions are released to the general in-plant environment. It is in this area that test cells 14, 15, and 16 were formerly located. Cell 16 has been physically removed. Cells 14 and 15 are now used as networking (internet, server, etc.) rooms (stacks have been removed). The fabrication and machine shop also contains a natural gas fired 600 Btu/hr Bayco oven. The oven is used maybe once a month, to heat metal to "slip fit parts". The oven is not used as a burn off oven. Next to the Bayco oven is a natural gas fired "block washer" where engine blocks can be cleaned. Emissions from the "block washer" are vented to outside ambient air.

The tour continued in Building 1 where a small paint booth was observed. The paint booth was not in operation at the time of inspection. Filters were in place. A paint use log was hung outside the door for record keeping of paint quantities used.

The facility tour concluded in Building 2, where the following were observed: eight electrical test cells, six rotary actuators (electrical), test vehicle storage area, and two cold cleaners. The cold cleaners' lids were closed. Signs were posted on the wall in front of each cold cleaner reminding employees to close the lid when not in use. The electrical testing in Building 2 is not subject to air quality regulations.

7. APPLICABLE RULES/PERMIT CONDITIONS

Renewable Operating Permit No. MI-ROP-A8217-2012

The ROP was renewed with an effective date of April 18, 2012. The General Condition (GC) and Special Condition (SC) are listed as appropriate. For brevity, permit conditions and the language of federal and state rules have been paraphrased. In general, this inspection will evaluate the records for the period from January 2021 to May 2022.

GC 11 – **IN COMPLIANCE**. Opacity limited to a six-minute average of 20 percent (%), except for one six-minute average or not more than 27% opacity. Visible emissions were zero from all stacks during the inspection.

EU-Paint Area

SC II. 1 **IN COMPLIANCE**. Spray coating usage limited to 55 gallons per 12-month rolling time period. Records provided indicate that the paint usage is significantly less than 55 gallons per 12-month rolling time period. The facility typically uses less than one gallon per month. For the evaluated period, the highest 12-month rolling paint usage was 3.97 gallons, recorded at the end of February 2022.

SC VI. 1 **IN COMPLIANCE**. Shall maintain monthly and annual coating usage records. January 2021 through May 2022 monthly records were submitted.

EU-TestCell10

EU-TestCell10 permit conditions will be evaluated later in this report, as permitted by PTI 67-05C.

FG-ColdCleaners

The ROP table lists seven cold cleaners. The condition is written to cover any cold cleaner that is grandfathered or exempt. During the inspection, it was confirmed that there are still seven cold cleaners that can be used as part washers. The requirements below apply to each cold cleaner individually.

SC II MATERIAL LIMITS

1. **IN COMPLIANCE**. Based on a review of safety data sheet (SDS) in AQD files, solvents used at the facility do not contain more than 5 % by weight of the prohibited chemicals listed in this condition. They continue to use Vescol Mineral Spirits.

SC IV DESIGN/EQUIPMENT RESTRICTIONS

1,2,3, 4, 5 **IN COMPLIANCE**. (1) Each cold cleaner must either have an air/vapor interface of 10 square feet or less or the cold cleaner must vent to the in-plant environment; (2) be equipped with a device for draining cleaned parts; (3) be equipped with a cover and cover is closed when not in use; (4) the cover mechanically assisted if the solvent's Reid vapor pressure exceeds 0.3 pounds per square inch absolute (psia) or the solvent is heated or the solvent is agitated; (5) for new cold cleaners; special conditions that apply to Reid vapor pressure greater than 0.6 psia.

Observations indicate that each cold cleaner vents to the in-plant environment and is equipped with a cover. The covers were closed at the time of the inspection. Parts are left in the tanks to drain. According to McLaren, the solvent is neither heated nor agitated during cleaning. The SDS provided indicates the vapor pressure is 2.1 mmHg (0.04 psia).

SC VI MONITORING/RECORDKEEPING

1,2,3, & 4 **IN COMPLIANCE**. (1) if solvent is heated, solvent temperature shall be monitored; (2) Recordkeeping on the make/model, size, description, date of installation, air/vapor surface area, type of solvent for each cold cleaner; (3) written

procedures posted; (4) waste solvent stored in closed containers unless a safety hazard.

A summary table listing the information cited on item (2) above, for each individual cold cleaner, was provided on 6/23/2022. Cold cleaner #1 to # 6, appear to be exempt from PTI requirements under R336.1281(2)(h), Cold cleaner #7 is exempt from PTI requirements under R336.1285(2)(iv).

Written procedures were posted near the cold cleaners. Waste solvent was not observed during the inspection.

FG-TestCells

FG-TestCells (test cell Nos. 1, 4, 5, 7, and 13) contain no fuel restrictions, and emit uncontrolled to the atmosphere. These cells are exempt per Rule 285(g) and were installed before the promulgation of Rule 278. Within the initial ROP application 199600113, the test cells at the facility are only listed as using gasoline. The facility keeps records of fuel usage and the days of engine testing for the group of cells. The facility is limited to using the "grandfathered" exempt test cells to gasoline. During the inspection of 2019 it was observed that the EUTESTCELL1 was testing a natural gas type burner. A Rule 278(a) letter demonstrated that the change in fuel usage from gasoline to natural gas in test cell 1 was exempt from permitting pursuant to Rule 282(2)(b). Cell No. 1 is not currently used. The gas equipment was removed from the cell.

SC VIII STACK/VENT RESTRICTION(S)

1 to 6, **IN COMPLIANCE**. Based on visual observation from ground level the stacks appear to be discharging unobstructed vertically upwards to the ambient air and the dimensions seem to be in compliance with the permitted values.

FG-TestCellsCC

According to the active ROP, this flexible group originally included 10 test cells with catalytic converters serving as the primary control devices. However, as indicated earlier in this report, only test cells 8, 9 and 12 are currently used for conventional engine testing. In addition, test cell 9 which operated as part of FG-TestCellsCC, was removed from the flexible group after being modified under PTI 32-22 issued on 3/29/2022. Please note that test cell 9 started engine testing operations under the new conditions of PTI 32-22 on 3/30/2022, before that date the operations in cell 9 were regulated under the ROP requirements and conditions for FG-TestCellsCC that are herein evaluated.

SC I EMISSION LIMITS

1&3 **UNABLE TO DETERMINE**. CO and VOC emissions from FG-TestCellsCC shall not exceed 0.59 pounds CO per gallon of gasoline combusted (SC 1) nor 0.008 pounds VOC per gallon of gasoline combusted (SC 3). The monitoring method for the pounds per gallon limit is a stack test through General Condition No. 13, a condition indicating the Department may require a stack test through R 336.2001 and R 336.12003. The AQD has previously requested stack testing (during 2007), but this requirement has been placed on hold as the facility is not operating under normal representative conditions. SC V.1 states that CO and 1,3-butadiene testing is required no later than 1 year prior to permit renewal. However, this condition identifies EU-TestCell10 and is likely in error as FG-TestCellsCC do not have a 1,3-butadiene emission limit.

2&4 **IN COMPLIANCE**. CO and VOC emissions from FG-TestCellsCC shall not exceed 133.4 tons per year (SC 2) nor 1.8 tons per year (SC 4), respectively; the

tons per year limit is to be evaluated on a 12-month rolling time. For the evaluated period, from January 2021 to May 2022, the highest 12-month rolling emissions for CO and VOCs were 4.9 tons and 0.07 tons respectively, reported at the end of August 2021.

SC II MATERIAL LIMITS

1&2 IN COMPLIANCE. Fuel usage shall not exceed 2,000 gallons per day (SC 1) nor 450,000 gallons per 12-month rolling time period (SC 2). The maximum average daily fuel usage for all controlled cells from January 2021 through May 2022 was 135 gallons and occurred during May 2022. While the daily value is an average, the AQD accepts the record provided as the number of days of testing is documented (15 days), the amount of fuel (2022 gallons) is documented, and monthly usage is very low. The highest 12-month rolling fuel usage was 16,693 gallons (August 2021). Please note that the facility reported a total of 6515 gallons of unleaded fuel for the month of April, for 21 days of testing, which would calculate to an average daily fuel usage of 310 gallons; however, the spreadsheet calculated 0 gallons daily fuel and 0 pounds of daily emissions. The facility shall review the daily fuel records and the calculated emissions.

SC IV DESIGN/EQUIPMENT

1. IN COMPLIANCE. Shall not operate any test cell unless each test cell has a catalytic converter installed, maintained, and operating in a satisfactory manner. Catalytic converters are maintained and operating properly. Proper performance of the catalytic convertor is based on operating temperature which is recorded continuously during testing.

SC V TESTING/SAMPLING

1. TO BE DETERMINED One gasoline engine with catalytic control within FG-TESTCELLSCC will be tested to verify CO and VOC emission rates. A complete protocol was timely submitted to AQD prior to testing. The testing has been scheduled to occur on August 10, 2022.

SC VI MONITORING/RECORDKEEPING

1. IN COMPLIANCE. Shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor and record the inlet temperature and catalyst bed temperature for each catalytic converter during an engine test. Records provided indicate that inlet temperature and catalyst bed temperature are recorded during each engine test. Samples of calibration records for the thermocouples for FG-TESTCELLSCC test cells in use were provided for 8/19/2021 and 6/16/2022.

2. IN COMPLIANCE. Shall use catalytic converters to assure compliance with the carbon monoxide limit. An excursion for non-compliance shall be 2 consecutive 1-hour block average catalyst bed temperature readings less than 230°C. A spot check of the catalyst records indicate that the catalyst bed temperature has been greater than 230°C (446°F) on a one-hour block average.

3, 4, & 5. IN COMPLIANCE. Shall keep daily, monthly and previous 12-month rolling records for CO, VOC, and 12-month fuel usage. Daily fuel usage records are available. Monthly and 12-month rolling CO, VOC, and fuel usage were provided.

6. IN COMPLIANCE. Shall keep, in a satisfactory manner, continuous records of the inlet temperature and catalyst bed temperature. Records for the inlet and catalyst

bed temperature when in operation were checked at the site. The facility records show that the catalyst temperature was within the permit limits. Sample of printed record were not requested.

SC VIII STACK/VENT RESTRICTIONS

1-9 **IN COMPLIANCE.** Stacks were determined to be in compliance.

EU-TESTCELL10 (PTI 67-05C)

EUTESTCELL10 will be evaluated based on the conditions of PTI 67-05C issued on February 22, 2018. The permit was issued for the modification of gasoline throughput based on stack testing conducted on March 23, 2016, at EU-TestCell10.

EUTESTCELL10 has a catalytic converter servicing as a primary control device.

SC I. EMISSION LIMITS

1. **IN COMPLIANCE.** CO – 709.2 pounds per day (lb/day). Daily fuel usage is estimated based on monthly usage divided by the number of days operated. The AQD accepts this method based on the low monthly fuel usage. The highest daily fuel usage for the evaluated period occurred during April 2022 at 44 gallons. Based on the emission factor (EF) determined from CO stack testing on March 23, 2016 (EF = 1.45 lbs. CO/gal [see MACES report CA_A821736673]), the CO daily emissions in April 2022 were 63.9 lbs CO/day. The spreadsheet lists various months in 2021 with no daily fuel usage but the monthly fuel usage shows actual values. The facility shall review the daily fuel records to explain this discrepancy.

2. **IN COMPLIANCE.** CO – 16 tons per year on a 12-month rolling time period determined at the end of each calendar month. The highest CO 12-month rolling emissions for the evaluated period was 1.58 tons/year (March 2022).

3. **IN COMPLIANCE.** 1,3-butadiene – 8.28 lbs/year on a 12-month rolling time period determined at the end of each calendar month. The highest 1,3-butadiene 12-month rolling emissions for the evaluated period was 0.8 lbs/year (March and April 2022).

SC II MATERIAL LIMITS

1. **IN COMPLIANCE.** Shall only burn unleaded gasoline, diesel, kerosene, CNG, and LPG. According to the records provided EUTESTCELL10 has only burned diesel, CNG, and LPG.

2. **IN COMPLIANCE.** Fuel usage shall not exceed 489 gallons per calendar day. As described in SC I.11, the highest daily fuel usage for the evaluated period occurred during April 2022, at 44 gallons.

3. **IN COMPLIANCE.** Fuel usage shall not exceed 22,069 gallons per 12-month rolling time period as determined at the end of each calendar month. The highest 12-month rolling fuel usage for the evaluated period was 2,180 gallons (March 2022).

SC IV DESIGN/EQUIPMENT PARAMETERS

1. **IN COMPLIANCE.** EU-TESTCELL10 shall be equipped and maintained with a catalytic converter. The test cell has with a catalytic convertor which is maintained and operated at the proper temperature for optimal emission control performance.

SC V TESTING

1. IN COMPLIANCE. Verification of CO emission rates. Testing to be completed no later than 1 year prior to the ROP renewal. CO stack testing occurred on March 23, 2016. The ROP has been in renewal phase since October 14, 2016, prior to the issuance of PTI 67-05C.

SC VI MONITORING

1 & 2a through f. **IN COMPLIANCE.** Shall maintain record of days of operation, total combined gallons, CNG and LPG use calculations, monthly and 12-month rolling emission records for CO, and monthly and 12-month rolling emission records for 1,3-butadiene. The facility is maintaining the required records and they were provided during the inspection.

3a & b. **IN COMPLIANCE.** Shall maintain daily fuel used calculations based upon the total combined gallons used divided by the number of days operated. Fuel use records are maintained.

SC VII REPORTING

1. IN COMPLIANCE. Shall notify the AQD within 30 days after completion of modification. The AQD has been notified.

SC VIII STACK RESTRICTIONS

IN COMPLIANCE. STACK/VENT RESTRICTIONS. The stack for EU-TestCell10 appears to be in compliance based on visual observation from ground level and reported value.

EU-TESTCELLCC9 (PTI 32-22)

A test cell with a maximum capacity of 1000 HP with a catalytic converter for emission control.

At the time of the inspection on 6/23/2022 there had been only three months since the modification of test cell 9 and its start in operations on 3/30/2022, with just a few days (26 days) of engine testing. To date, only 277 gallons of fuel (exclusively diesel) have been combusted, resulting in less than 1 ton of CO emissions and less than 1 pound of 1,3-butadiene emissions. Therefore, only a few conditions of PTI 32-22 will be evaluated, as follows:

SC IV DESIGN/EQUIPMENT

1. **IN COMPLIANCE.** Shall not operate EU-TESTCELLCC9 unless the test cell has a catalytic converter installed, maintained, and operating in a satisfactory manner. Catalytic converters are maintained and operating properly. Proper performance of the catalytic convertor is based on operating temperature which is recorded continuously during testing.

2. **IN COMPLIANCE.** Shall install, calibrate, maintain, and operate in a satisfactory manner a device to continuously monitor and record the inlet temperature and catalyst bed temperature for the catalytic converter in EU-TESTCELLCC9 during an engine test. Records provided indicate that inlet temperature and catalyst bed temperature are recorded during each engine test.

3. **IN COMPLIANCE.** Shall use catalytic converters to assure compliance with the carbon monoxide limit. An excursion for non-compliance shall be 2 consecutive 1-hour block average catalyst bed temperature readings less than 230°C. A spot

check of the catalyst records indicate that the catalyst bed temperature has been greater than 230°C on a one-hour block average.

SC V TESTING

1. TO BE DETERMINED. Verification of emission rates for CO, PM2.5, and 1,3-butadiene from EU-TESTCELLCC9 within 180 days after permit issuance. A complete stack test protocol was submitted to AQD within the required timeframe. The gases exhausted from a diesel engine with catalytic control within EU-TESTCELLCC9 will be sampled to verify the PM2.5 and CO emission rates. Emissions testing will be performed on the engine test cell for three (3) 60-minute test runs. The dynamometer test cells will operate the test engines at variable speed and load, which is representative of normal operations. The AQD acknowledged that it is not technically feasible to measure 1,3-butadiene emissions at or below the permit limit at this time. The test is scheduled to be performed on August 9, 2022.

The same comment cited earlier applies to EU-TESTCELLCC9. There seem to be errors in the reported daily fuel usage. Daily fuel usage is reported as zero even though monthly fuel usage are not zeros.

PERMIT TO INSTALL EXEMPT EQUIPMENT

Machining Equipment/CNC Machine

The machining equipment and CNC machine appear to be exempt from PTI requirements under the following Rule.

R336.1285(2)(l)(vi)(B): "Equipment for carving, cutting, routing, turning, drilling, machining, etc. which has emissions that are released only into the general in-plant environment."

The small assembling line and electrical testing does not appear to generate any air emissions and would not require an AQD permit. Any potential emissions are released to the general in-plant environment.

Bayco oven - 600 Btu/hr

The Bayco oven appears to be exempt from PTI requirements under the following Rule.

R 336.1282(2)(b): "Fuel-burning equipment which is used for ...indirect heating which burns...natural gas.. and the equipment has a rated heat input capacity of not more than 50,000,000 Btu per hour."

Dunnage Washer

The dunnage washer appears to be exempt from PTI requirements under the following Rule.

R 336.1281(2)(e): "Equipment used for washing or drying materials, where the material itself cannot become an air contaminant, if no volatile organic compounds that have a vapor pressure greater than 0.1 mmHg at standard conditions are used in the process and no oil or solid fuel is burned.

There have been no changes to this process within the last five years. According to the information provided in 2019, the vapor pressure of the organic compounds used in this process is 0.09 mmHg.

Block Washer

The block washer appears to be exempt from PTI requirements under the following Rule.

R 336.1285(2)(l)(iii): "Equipment for surface preparation of metals by use of aqueous solutions, except for acid solutions."

There have been no changes to this process within the last five year. According to the SDS provided during the 2017 inspection for material used in the block washer, the pH concentrate is 10.475.

Compliance Assurance Monitoring (40 CFR Part 64)

Per 40 CFR Part 64.5(b) the facility has submitted a CAM plan with the ROP renewal for ROP No. MI-ROP-A8217-2012. The ROP has incorporated the CAM requirements as appropriate. A copy of the CAM plan has been attached to this inspection report.

40 CFR 63, Subpart CCCCCC—National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities

Subpart CCCCCC was not evaluated during the inspection. This regulation will be incorporated in the ROP upon renewal. The AQD has not accepted delegation to implement and enforce this regulation.

40 CFR Part 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (Emergency Generator)

According to information provided in 2019 the engine was manufactured on June 19, 2015, and began start up on April 16, 2017. The specification sheet indicated a maximum power of 60 KW (96 horsepower).

60.4233(d) and 60.4233(e), 40 CFR Part 60, Subpart JJJJ, Table 1 - Owner/operator must comply with emission standards specified in this subpart. **IN COMPLIANCE**. The facility provided a USEPA Certificate of Conformity for the engine during the 2017 inspection and the document is on file.

40 CFR 60.4243(a)(2)(ii) – **IN COMPLIANCE** -To the extent practicable, must maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. The facility appears to meet this requirement.

40 CFR 60.4243(d) – **IN COMPLIANCE** - The emergency engine may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of the emergency engine in emergency situations. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. Emergency stationary ICE may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. For owners and operators of emergency engines, any operation other than emergency operating, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as permitted in this section, is prohibited.

The hour meter was not observed during the inspection of 2022, but the records of generator usage were requested. Time-logs for the last 12-months were provided by McLaren via email on June 30, 2022. The records indicate that from June 2021 to June 2022, the generator was used for emergency purposes in various occasions, for a total of

27.28 hours in that period. The total engine usage for readiness and maintenance purposes added up to 12.58 hours.

40 CFR 60.4237(b) – **IN COMPLIANCE** - Shall not operate the generator unless it is equipped with a functional non-resettable hour meter. The engine is equipped with a non-resettable hour meter.

40 CFR 60.4245(a) – **IN COMPLIANCE** - The permittee must keep records as outlined below.

All notifications submitted to comply with 40 CFR Part 60, Subpart JJJJ and all documentation supporting any notification.

a. Maintenance conducted on the engine.

b. If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable.

c. If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to § 60.4243(a)(2), documentation that the engine meets the emission standards.

The emergency engine appears to meet the above requirements. The Certificate of Conformity and emissions data was provided during the previous inspection. Maintenance records were not requested during the 2022 inspection.

The emergency generator appears to be exempt under R336.1285(2)(g) – Internal combustion engines that have less than 10,000,000 Btu/hr maximum heat input. According to information provided during the previous inspection, the engine has a natural gas consumption rate of 923 ft³/hr at 100% load. This equates to a heat input capacity of 969,150 Btu/hr (923 ft³/hr x 1050 Btu/ft³).

MAERS REPORT REVIEW:

The facility is required to report to the Michigan Air Emission Reporting System (MAERS). Facility submitted MAERS and ROP certification form for reporting year 2021 in a timely manner. No issues were identified with the 2021 MAERS report. Refer to MACES report CA_A821762309 for the 2021 MAERS review report.

FINAL COMPLIANCE DETERMINATION:

As a result of the inspection conducted on 6/23/2022 and the evaluation of the records for the period January 2021 to May 2022, the facility appears to be in compliance with MI-ROP-A8217-2012; PTI 67-05C and the evaluated conditions of PTI 32-22. At the date of the inspection, 6/23/2022, the modified test cell 9 permitted under PTI 32-22 had been in operation for about three months and many of the material and emission limits couldn't be evaluated.

General Comment: The facility shall review the daily fuel usage records/calculations. Some discrepancies were found in the hardcopy of the spreadsheet that was provided during the inspection. At this time, these discrepancies do not appear to affect the compliance status of the facility because overall fuel usage is low.

NAME *A. Anderson*

DATE 11/22/2022

SUPERVISOR *JK*