

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

B160440208

FACILITY: GM LLC Customer Care & Aftersales - Swartz Creek		SRN / ID: B1604
LOCATION: 6060 W. BRISTOL RD., FLINT		DISTRICT: Lansing
CITY: FLINT		COUNTY: GENESEE
CONTACT: Marvin Asbury , Environmental Operations Supervisor		ACTIVITY DATE: 05/18/2017
STAFF: Julie Brunner	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Compliance Inspection		
RESOLVED COMPLAINTS:		

On May 18, 2017, I conducted a scheduled inspection of GM Customer Care & Aftersales – Swartz Creek (B1604) in Corunna. The last inspection of the facility was on June 25, 2014.

Facility Name/Address:

6060 W. Bristol Road, Swartz Creek, Michigan

Facility Contact:

Marvin Asbury, office: 810-635-5069, cell: 248-467-9322, marvin.k.asbury@gm.com

Facility Description:

GM Customer Care & Aftersales (formerly GM Service Parts Operation) in Swartz Creek (GM Swartz Creek) warehouses automotive parts. A powerhouse containing three active boilers supplies heat to the 3.2 million square foot facility. Some of the auto parts, mostly doors, side panels, hoods, hatches, and fenders are coated with a black primer prior to being shipped to aftermarket customers. The facility is divided into two plants. Plant 1 is the warehouse and coating operations. Plant 2 is shipping.

The facility is a synthetic minor source. The GM Swartz Creek is not subject to the Title V - Renewable Operating Permit (ROP) Program and any applicable federal standards with the permitted restrictions on emissions to below major source thresholds.

Commencement of Mfg. Operations: The facility is owned and operated under the "new" GM company, General Motors LLC, since 2009 when the restructuring occurred.

Plant Capacity: The coating system is currently a 1-shift operation. It can run 3-shifts if necessary.

Staff #: 350 - 400 Shifts/Day: 1-shift (8-10 hours) Days of Operation/Week: 5-6 days/week

List of Active Air Use Permits:

Permit to Install (PTI) No. 95-09 was modified May 10, 2016 to include a hazardous air pollutants (HAPs) content limit for the electrodeposition coating. The following emission units and flexible groups are covered by PTI 95-09A:

Emission Unit (EU) / Flexible Group (FG)	Description	Applicable Regs
EU-ELPO1	Electro-coating (ELPO) of metal parts consisting of a pre-treatment, prime-coating (dipping), and a cure oven.	Rule 205; Rule 702(a)
EU2-BLR001 / FG2-BLRGRP	48 MMBtu/hr natural gas-fired boiler with low-NOx burners	Rule 205; 40 CFR 60, Subpart Dc
EU2-BLR002 / FG2-BLRGRP	48 MMBtu/hr natural gas-fired boiler with low-NOx burners	Rule 205; 40 CFR 60, Subpart Dc

EU2-BLR003 / FG2-BLRGRP	48 MMBtu/hr natural gas-fired boiler with low-NOx burners	Rule 205; 40 CFR 60, Subpart Dc
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The permit also includes the following limits to restrict potential emissions: VOC content of 1.2 lb/gallon (minus water) as applied and a hazardous air pollutant (HAP) content of 0.3% by weight as received on the prime electrodeposition coatings, and combustion of natural gas only in the boilers (FG2-BLRGRP).

Emergency Generators:

There are two (2) diesel fuel-fired generators and one (1) natural gas-fired emergency generator for lights and power. There are three (3) diesel fuel-fired fire pumps for fire water.

Regulatory Discussion:

GM Swartz Creek was issued a Title V Renewable Operating Permit (ROP) in 1999 because the boilers were capable of emitting sulfur dioxide (SO₂) at greater than 100 tpy. In 2001, the coal-fired boilers were converted to natural gas and a fourth coal-fired boiler was decommissioned. The changes significantly reduced the potential to emit (PTE) for several pollutants. In 2005, the ROP was renewed. In the staff report, PTE for VOC and HAP were identified as being greater than 100 tpy and 25 tpy, respectively. A flow coater primecoat process was removed later that year. A reformulation of the primer coating for the electrophoretic deposition process (EU1-ELPO) was made to remove HAPs. These last process changes significantly reduced VOC and HAP emissions. Because the facility was less than the major source threshold for all criteria pollutants and HAPs, they applied for and were issued a permit to opt-out of the Title V Program in 2009.

On December 20, 2004, an initial notification was received indicating processes were subject to 40 CFR 63, Subpart M. The coatings used on the EU1-ELPO coating line were reformulated to remove HAPs. A letter was received on December 20, 2006 indicating the reformulation, and that no existing processes were subject to 40 CFR 63, Subpart M at the facility. The reformulation occurred before the compliance date of January 2, 2007, and the facility was no longer an existing affected source as defined by 40 CFR 63, Subpart M.

The three natural gas-fired boilers are subject to 40 CFR 60, Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. GM Swartz has one emergency engine that is subject to 40 CFR 60, Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

GM Swartz Creek is an "area source" of HAPs and operates natural gas-fired boilers. Gas-fired boilers are not subject to 40 CFR 63 Subpart JJJJJ, the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boiler Area Sources.

Michigan Air Emissions Reporting System (MAERS):

The facility is required to report to MAERS. The MAERS reporting for 2016 was audited. In the report, the pollutants reported to be emitted in the greatest quantity were 4.68 tpy of nitrogen oxides (NOx) and 6.97 tpy of carbon monoxide (CO) from combustion, and 8.3 tpy of VOC from the EU1-ELPO coating line.

Inspection:

Arrived: 9:36 am

Departed: 1:25 pm

Weather: 76°F, SSW 18 MPH, UV Index 2 Low

When I arrived, I detected no odors around the facility. There were no visible emissions from any exhaust stack vents. I checked in with security and was then met by Mr. Marvin Asbury. A pre-inspection meeting was conducted and I discussed the purpose of my visit. Facility operations were discussed followed by a walk through of the facility.

FG2-BLRGRP - Three (3) Natural Gas-Fired Boilers (PTI 95-09A):

Boiler unit nos. 2, 3, and 4 were converted to natural gas and boiler no. 1 was retired in place. The boiler emission unit numbers on the permit are for EU2-BLR001, EU2-BLR002, and EU2-BLR003 which doesn't quite match the numbering used by the facility. Units 3 and 4 are combined in a single stack and unit 2 has its own stack. The stacks appeared to be appropriately greater than 75 feet tall and 30 inches in diameter, and are not listed on the permit. I did not witness any visible emissions from the stacks.

Boiler Equipment Information:

Unit No.	Manufacturer / Type	Date Built	Heat Input Rating*	Operational Capacity
2	Union / Water Tube	3-29-1957	40 MMBtu/hr	100 PSI, 40,000 lb steam/hr
3	Union / Water Tube	3-29-1957	40 MMBtu/hr	100 PSI, 40,000 lb steam/hr
4	Keeler / Water Tube	1961	50 MMBtu/hr	100 PSI, 50,000 lb steam/hr

* The heat input rating is from the facility staff and does not exactly meet the emission unit description.

Only Unit 3 was operating at an average summer load of ~70 PSI and 6,000 lbs steam/hr to support the ELPO operation. (Picture of the operating screen "Boiler Overview" is attached.) Winter load is typically 70 PSI and 40,000 to 45,000 lbs steam/hr. The boilers are used much less in the summer as the heat demand for the building is much less.

Combustion of pipeline quality gas and recordkeeping of fuel usage are the only permit requirements. Compliance with Special Conditions (SC) II.1 and VI.2 was demonstrated. The emission unit description on the permit lists low-NOx burners on the boilers, but there are no requirements in the permit to have low-NOx burners installed and operating properly. The boilers are inspected annually, and a preventative maintenance (PM) program is in place.

EU-ELPO1 - Electrophoretic Prime Coating Line (PTI 95-09A):

The primer coating system is an electrophoretic deposition dip application (ELPO). The coating process starts with a zinc phosphate pre-treatment to prepare the parts for coating. The ELPO coating is a two-part coating consisting of resin and paste mixed in water. About 18 to 21% solids are maintained in the dip tank, and electrical usage is used to adjust the tank contents. An on-demand PLC tracks electrical usage. The coated parts are dried in a natural gas-fired oven that according to the application for PTI 95-09 has seven (7) burners with a total of 27.5 MMBtu/hr heat input. The ELPO coating system has two (2) stacks, one (1) on the dip tank and one (1) on the natural gas-fired oven.

A schematic of the diagram of the phosphate/ELPO system overview is attached. D.I. water on the diagram has been replaced by R.O. water. The parts are hung on racks and travel through the coating process on an overhead conveyor.

The process overview is as follows:

1. Phosphating
2. Dip tank – 60,000 gallons, flow through
3. 4-stages of rinse with R.O. water, ultra filtration removes ELPO solids and returns to ELPO tank.
4. Drying oven
=>It takes about 1-hour for a part to travel through the ELPO coating process.

The line was operating, and I observed parts loading, and being coated in the ELPO bath. The racks that the parts are hung on for coating is sent to a 3rd party for cleaning to remove coating build-up.

Safety Data Sheets (SDS) and Environmental Data Sheets (EDS) are maintained in compliance with SCs V.1 and VI.2. Recordkeeping as required by SC VI.3 is maintained.

EU1-MAINTPNT - Maintenance paint booth:

This booth was installed in 1957 and is grandfathered. A particulate control system is in place. This booth is used very sparingly. Records of coating usage are being maintained. In March of 2017, 4.5 gallons of topcoat and a little over 1 gallon of thinner were used in the booth. March was the highest usage month in 2017 so far.

Miscellaneous Exempt Equipment:

Cold Cleaners Exempt per Rule 281(2)(h) -

Several water-based parts washers are on-site. Safety-Kleen owns and services the parts washers. ArmaKleen

4 in 1 Cleaner – Cleaning Solution is used in the parts washers. It is a water-based cleaner that according to the SDS has a mild detergent odor and a pH greater than 10. A parts washer in the boiler house was viewed. It was a Model 91 Aqueous Vat Parts Cleaner. The lid was closed and procedures were posted along with safe operating practices.

Emergency Generators Exempt per Rule 285(2)(g) –

1. Plant 1 natural gas-fired emergency generator for lighting – EMGENERATOR EL3.
2. Plant 2 diesel fuel-fired emergency generator for lighting.
3. ELPO diesel fuel-fired emergency to keep the dip tank mixed in the event of power failure – ELPO Generator GG-9.
4. Three (3) diesel fuel-fired fire pump engines – Fire pump Generators #1, #2, and #3.

The emergency generators are tested monthly, PM logs are kept for each engine, and annual engine inspections are generally done in April by a contractor.

The following is a list of specifics for each generator:

Generator	Unit / Engine	Operating Hours	Notes
EMGENERATOR EL3, natural gas-fired, Manf.: 05/2005	Kohler Power System 125, Model # 125RZG, Serial # 2042338 / GM engine (8.1 L), 130 kW, Model # GM8.1L, Serial # 8P1L10430	54.9 hours	Vents out the roof
Plant 2 Emergency Lighting Generator, diesel fuel-fired, Manf.: 1990	Detroit Model # GC-659300, Serial # L3011-6 / John Deere, 125 kW, Model # 6466TF-00, Serial # RG6466T308638	75.7 hours	On a platform above the plant floor
ELPO Generator GG-9, diesel fuel-fired, Manf.: 1987	Marathon Model #NTVEMDA30600XJLU, Serial # SSI03939 / GM Detroit Diesel Engine, 250 kW (415 BHP), Model # 80637405, Serial # 06VF156056	178.9 hours	Diesel fuel tank with secondary containment beside the generator
Fire Pump #1, diesel fuel-fired, Manf.: 1996	Clarke Detroit Diesel, 265 BHP, Model # DDFP-L6FA, Serial # 6VF-215372	656.4 hours	Located in firepump house
Fire Pump #2, diesel fuel-fired, Manf.: 1/2012	Cummins, 311 BHP, Model # CFP9E-F40, Serial # 73335180	134.7 hours	Located in firepump house, Subject to 40 CFR 60, Subpart IIII, Certificate No. CEX-STATCI-11-21
Fire Pump #3, diesel fuel-fired, Manf.: 1996	Clarke Detroit Diesel, 265 BHP, Model # DDFP-L6FA, Serial # 6VF-215372	518.5 hours	Located in firepump house

The emergency engines and fire pumps at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) promulgated in 40 CFR Part 63, Subparts A and ZZZZ. This subpart establishes national emission limitations and operating limitations for HAPs emitted from stationary RICE located at major and area sources of HAP emissions. 40 CFR 63, Subpart ZZZZ applies to the RICE located at GM Swartz Creek which is considered an area source of HAPs. Michigan does not have delegation to implement and enforce this standard, but sources are still required to comply with this standard.

Fire Pump #2 is subject to 40 CFR 60, Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. It is a certified engine.

The sulfur content of the fuel oil used in the generators is less than 0.0015% by weight as required by the NRLM diesel fuel standard in 40 CFR 80.510(c). For emergency generators, it is assumed that they operate no more than 500 hours per year at worst-case.

Boilers and Other Natural Gas-Fired Equipment Exempt per Rule 282(2)(b)(i).-

1. Small natural gas-fired boiler (Hydrotherm, Serial # MSD-2179, 474,000 Btu/hr) for fire water protection tanks.
2. Natural gas-fired overhead door space heater (assumed less than 14.4 MMBtu/hr for all space heaters in the opt-out application).

Numerous small tanks (less than 500 gallons) for storage of propane, diesel fuel, etc. exempt per Rule 284(2)(b), (c), or (d).

Records Review:

An electronic copy of records was emailed, and paper copies are attached to this inspection report for the file.

A list of the following records obtained during the inspection is as follows:

1. Maintenance Paint Spray Booth coating usage records, January – April 2017
2. Emergency Engine: 2017 annual maintenance reports and January – May 2017 operating hour records for the following engines:
 - a. ELPO Generator GG-9
 - b. Plant 2 Emergency Lighting Generator
 - c. Emergency Lighting Generator (Wrap Side)
 - d. Fire Pump 1
 - e. Fire Pump 2 – please note the EPA Emission Certification is attached for this engine.
 - f. Fire Pump 3
 - g. Diesel fuel Safety Data Sheet (SDS) (Product Name: Marathon Petroleum No. 2 Ultra Low Sulfur Diesel)
3. Aqueous parts washer SDS (Product Name: ArmaKleen 4 in 1 Cleaner – Cleaning Solution)
4. Diagram of the Phosphate/ELPO System overview
5. Phosphate System SDSs broken into 4 separate files
6. ELPO System SDSs and Environmental Data Sheets
7. Emissions and Natural Gas Usage Spreadsheets
 - a. EU1-ELPO Monitoring and Recordkeeping Form (April 2016 to April 2017)
 - b. FG2-BLRGRP Monitoring and Recordkeeping Form (April 2016 to April 2017)
8. Pipeline Quality Natural Gas Analysis
9. Copy of the Boiler Overview diagram and three boiler's Certification of Boiler Inspection issued by the Michigan Department of Licensing and Regulatory Affairs.

EU-ELPO1 - Electrophoretic Prime Coating Line (PTI 95-09A):

VOC emissions for the rolling 12-month period ending in April 2017 were 7.67 tons well below the allowable limit of 30.0 tpy. The VOC content in the tank was less than the allowable limit of 1.2 lb/gal (minus water) at an estimated 0.4 lb/gal (minus water) for April 2017. The highest HAP content was in the paste at 0.2 % by weight less than the permit limit of 0.3 % by weight.

Review of the SDS for all materials indicates that there are some VOCs (i.e., alcohols, petroleum distillates, acetaldehydes, etc.) in the pre-treatment chemicals. VOC emissions due to resin and paste are accounted for in the mass emission calculations. A review of whether VOC emissions could come from the pre-treatment chemicals should probably be completed. The VOCs in the pre-treatment may not be emitted but a demonstration should be kept on-file.

FG2-BLRGRP - Three (3) Natural Gas-Fired Boilers (PTI 95-09A):

Through April of 2017, 147,954,000 cubic feet of natural gas was combusted for the 12-month rolling time period in the boilers.

Summary:

GM Swartz Creek was in compliance with applicable air quality rules and regulations, and PTI 95-09A. I would recommend that the facility update the facility-wide potential to emit. Emissions from the combustion sources need to be updated to cover all combustion capacity.

NAME Jacob L. Brown

DATE 6/13/17

SUPERVISOR B.M.