

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

N695060215

FACILITY: General Motors LLC-Lansing Delta Township		SRN / ID: N6950
LOCATION: 8175 Millett Highway, LANSING		DISTRICT: Lansing
CITY: LANSING		COUNTY: EATON
CONTACT: Brian Borzenski , Environmental Engineer		ACTIVITY DATE: 09/28/2021
STAFF: Robert Byrnes	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: FY 2021 Scheduled Inspection.		
RESOLVED COMPLAINTS:		

On July 8, 2021 I sent a request for records to Brian Borzenski and Jessica Alderton for a scheduled inspection at the GM Delta Assembly Plant. The inspection was originally set for July 23, 2021 but was cancelled due to a production shutdown due to the computer chip shortage. The requested records were provided on July 23, 2021 via email and the inspection was rescheduled for August 11, 2021. Due to a computer chip shortage the inspection was delayed. Production is currently not set to begin again until Monday October 4, 2021. The actual site visit/inspection occurred on September 28, 2021. The visit included Jessica Alderton from GM Corporate and Brian Borzenski – Plant Environmental Representative for air, and covered section 1 of MI-ROP-N6950-2020. An opening meeting was held where we discussed the following items:

Meaningful change- due to a change in materials and an original 2004 or 2005 original PTI model, a revised PTI model from a 2014 topcoat, sealer and adhesive modification GM is looking to create a new model for meaningful change. GM was referred to memo 25 regarding meaningful change for guidance on how to deal with any SRSL concerns.

Records for Sealers used in the body shop maybe switching to a gallon per job emission factor rather than purchase records which may not be as accurate on a monthly basis for emissions. It was asked that GM should review the sealers used per year on an annual basis to account for any changes in models assembled.

GM will also be expanding the General Assembly building to better support future products. Each line of columns is considered a bay in the building and GM plans to expand the building by 2 bays to the North, 3 bays to the East and 3 bays to the West. GM will either be moving the existing door heaters to the new doors on the new bay extensions. If they decide to install new door heaters they would be installed as exempt. No other sources of air emissions were planned. A road is currently being relocated to accommodate the expansion and the building bump construction should start within a few months.

After the initial discussion we took a brief walk to the General Assembly area. No production was occurring however a few vehicles were being moved in preparation of production next week. Some vehicles were being repaired or finished which had been build without chips prior to the shutdown in July. We also briefly went to the paint shop where we observed from the outside doors or windows that no paint production was occurring again due to the chip shortage. The only portion of the plant that was running was a minimum amount of heat or hot water from the utilities complex and the stamping plant was running a single limited ship

because they also produce stampings for 2 other GM facilities. The remainder of this report discusses the records review write up portion.

SECTION 1:

EU-Electro coat

An electro coat dip tank followed by an electro coat curing oven. VOC emissions from both are controlled by an ELPO Thermal Oxidizer. After electro coat and prior to the primer surfacer system, manual wet sanding of the vehicle may be performed to correct minor imperfections in the prime coat. The electro coat sand operation is located in the paint shop and emissions from this operation are sent through a filter and vented back into the plant.

The facility historically used the supplier product specification sheet VOC contents to determine the VOC emissions. They do not do a Method 24 analysis on the typical resins and pastes as the material VOC contents don't change much by batch. The VOC contents are also low for the waterborne e-coat materials. The coating supplier provides a monthly report showing the VOC contents, the percent volume solids, and the amount in gallons used for the resin, paste, thinner additives and biocide added. The following is a summary of the EU-Electro coat emission limits and the actual emissions are below their respective limits for the month of May 2021. The VOC calculations were reviewed from May 2020 through May 2021 and a copy of the records are in Content Manager.

Pollutant	Permit Limit	Actual Emissions May 2021
VOC	0.04 Lbs VOC/GAC	0.02 Lbs VOC/GAC
VOC	67.9 Lbs per day	7.4 lbs per day
VOC	8.8 tons per 12 month rolling time period	1.29 tons per 12 month rolling time period

EU-Guide coat

A powder guide coat (primer surfacer) spray booth followed by a guide coat curing oven. The spray booth is equipped with electrostatic applicators or with equivalent technology with comparable or better transfer efficiency. The spray booth is equipped with a filter system to catch powder overspray and to recirculate air through the system. VOC and particulate

emissions from the oven are now controlled by a Regenerative Thermal Oxidizer (RTO). However, no control credit is taken. The particulate emission rate and the VOC outlet rate in ppm was recently evaluated as required in PTI 209-00E on 8/29/17. The facility powders vehicles in both the grey and white colors.

The facility uses the product specification sheets for the VOC contents and the auto protocol to determine the mass VOC emissions. The coating supplier provides a monthly report showing the amount in gallons used and the VOC information. The following is a summary of the EU-Guide coat emission limits. There are no limits in the permit for the Guide coat emission unit. The record was reviewed for May 2021 and a copy of the records is in Content Manager.

Pollutant	Permit Limit	Actual Emissions May 2021
VOC	NSPS Limit 1.4 KGS/LSA	0.01 KGS/LSA
VOC	No Permit Limit	3.71 tons per 12 month rolling time period

EU-Sealers and Adhesives

Various sealers, adhesives, and fillers are applied in the body shop, the paint shop, and the general assembly areas. None of these operations are directly vented to the outside atmosphere. All sealers were applied in the manual fashion, no automated robots were utilized.

Two suppliers provide usages at the end of each month with on site representatives. The usages for the rest of the materials are done by setting usage equal to purchased due to the high volume of materials used. The usages of all materials are compiled at the end of each month. The VOC contents of the materials are obtained from the supplier's information. Method 24 was initially done by the suppliers, but is not done on every batch. The method 24 analysis is updated when the formulation gets changed. The following is a summary of the EU-Sealer and Adhesives emission limits. Emission records were reviewed from April 2020 through May 2021, see Content Manager for details on the emission calculations.

Pollutant	Permit Limit	Actual Emissions May 2021
VOC	0.3 Lbs VOC/Gal (minus water)	0.14 lbs VOC/Gal (minus water)

VOC	863.1 lbs VOC/day	177.9 lbs VOC/day
VOC	97.0 tons per 12 month rolling time period	30.01 tons per 12 month rolling time period
PM	0.11 lbs/1000 lbs	0.002 lbs/1000lbs (as confirmed 8/2017 stack testing)
PM10	1.1 pph	.02 pph (as confirmed 8/2017 stack testing)
PM2.5	1.1 pph	.02 pph (as confirmed 8/2017 stack testing)

PM emission limits were verified during stack testing conducted on 8/29 and 8/30/2017. VOC emissions were also tested for informational purposes only. Results for VOC emissions were 0.3 pounds per hour.

EU-Glass Installation

In General Assembly, primer and adhesive materials are applied to the windshield and back glass openings and/or to the glass itself. The glass is then mounted to the vehicle. None of these operations are vented to the outside atmosphere.

The usages for the materials are done by setting usage equal to materials purchased due to the high volume of material used. The usages of all materials are compiled at the end of each month. The VOC contents of the materials are obtained from the supplier's information. Method 24 was initially done by the supplier's, but it is not done on every batch. The method 24 analysis is updated when the formulation gets changed. The following is a summary of the EU-Glass Installation emission limits. Emission records were reviewed from April 2020 through May 2021, see Content Manager for details on the emission calculations.

Pollutant	Permit Limit	Actual Emissions May 2021
VOC	0.4 Lbs VOC/Gal (minus water)	0.11 lbs VOC/Gal (minus water)
VOC	174.8 lbs VOC/day	17.8 lbs VOC/day
VOC	22.6 tons per 12 month rolling time period	3.23 tons per 12 month rolling time period

EU-Foam

This emission unit has discontinued use since the launch of new 2018 vehicles using the underbody sealer robots. This system was previously a two-part polyurethane foam deadener system will be injected into the hollow areas of each vehicle (i.e. such as the hinge pillars). The foam materials was applied using an applicator flow gun.

EU-Vehicle Fuel Fill

Each new vehicle will be filled with various fluids such as power steering fluid, antifreeze, transmission fluid, engine oil, windshield washer fluid, refrigerant, and gasoline. All vehicles being filled with gasoline shall be equipped with an Onboard Re-Fueling Vapor Recovery System (ORVR) to control VOC emissions.

Fuel fill emissions are the only sources of VOC from the materials used in this area. The emissions are calculated using an emission factor * the amount added to each vehicle (4.8 gallons per vehicle) * the number of vehicles produced each month. The following is a summary of the EU-Vehicle Fuel Fill emission limits. Emission records were reviewed from April 2020 through May 2021, see Content Manager for details on the emission calculations.

Pollutant	Permit Limit	Actual Emissions May 2021
VOC	0.5 tons per 12 month rolling time period	0.2 tons per 12 month rolling time period

EU-Start Up/Roll Test

This emission unit has been removed from the ROP for years because it is considered a mobile source of emissions according to EPA.

EU-Natural Gas

Natural gas burning will take place in the ovens, the paint booth air supply houses, the two thermal oxidizers, and miscellaneous support equipment installed under this permit. Note: a separate permit will cover installation of boilers for heating and cooling requirements. Total natural gas sent to Lansing Delta Township is metered and the amount sent to the Boilers is then subtracted from that total amount.

VOC and NOx emissions from EU-Natural Gas are calculated using an emission factor * the amount of natural gas used each month. The following is a summary of the EU-Natural Gas emission limits. See attachments to this report for details on the emission calculations.

Pollutant/Material limit	Permit Limit	Actual Emissions May 2021
Natural gas usage	991 MMCF per 12 month rolling time period	673.343 MMCF per 12 month rolling time period
VOC	2.7 tons per 12 month rolling time period	1.95 tons per 12 month rolling time period
NOx	39.1 tons per 12 month rolling time period	28.28 tons per 12 month rolling time period

EU-Phosphate

The 5 stage phosphate system consists of two parts – pre-phosphate washers, which essentially act as a car wash, which is meant to remove oil and grease from the bodies and the main phosphate tanks, which adds micro-crystals to the sheet metal surface. None of the materials used in the phosphate system contain any VOCs or volatile HAPs. Reviews were done on the SDS for the rinse conditioner, surface prep 1R, 185a cleaner, chemfos 700R, chemfos liquid additive, chemseal 59, chemfil buffer, and hydrogen peroxide.

The usages are for the materials are tracked each month. The usages of all materials are complied the end of each month. The VOC contents of the materials are obtained from the supplier's (PPG) information. Method 24 was initially done by the suppliers and/or by looking at the formulation sheets, but it is not done on every batch. The method 24 analysis is updated when the formulation gets changed. There are no emission limits for EU-Phosphate as the materials shall not contain any VOC. There are no NSPS boilers for this emission unit as the hot water is provided by the Central Utilities Complex (CUC).

EU-Sound Damp

Also known as Liquid Applied Sound Deadener (LASD) which is an acoustical sound dampening product that is applied using robotic equipment. There are no VOC emissions, PM

emissions nor any stacks associated with this process. Review of the Sound Damp SDS did not readily show any VOC type materials. The process is located between E-coat and Guide coat.

The usages for the materials are tracked each month by the material supplier and a report is provided to GM which is the data is included in the VOC reports. The material usages are also included in the MACT calculations. A tip cleaner product is also included as part of this process. A copy of the Sound Damp material SDS can be found in Content Manger, no usage records were during this inspection as the ROP does not require any usage records. It only requires a copy of the SDS be kept on file.

EU-Body Shop

In the body shop, sheet metal components are welded together to form the vehicles. Other miscellaneous resistance spot welding, MIG welding and metal grinding operations are performed throughout the body shop. None of the body shop operations are directly vented to the outside atmosphere. Some sealers and adhesives are used in assembling the body components. Material usages for this category are tracked under the sealer and adhesive emission unit.

FG-Topcoat

A topcoat spray booth followed by a topcoat oven. There is a heated flash-off area located between the basecoat portion of the booth and the clear coat portion of the booth. Basecoat will be applied manually or robotically using air atomized guns on cut-in areas. Basecoat is then applied to the body using robots equipped with electrostatic applicators. The first and second coats of exterior clear coat (clear or red tinted clear) are applied with electrostatic applicators. The clear coat observation zone maybe used for backup/manual spraying when needed. The manual zone would use air atomized applicators. Each section of the topcoat booth is equipped with a water wash system to control particulate emissions from paint overspray. The water wash system utilizes the floatation method to remove paint solids from the booth water. The VOC emissions from the heated flash-off area and the oven are controlled by Topcoat Thermal Oxidizer. This topcoat thermal oxidizer in series with the carbon adsorption unit also controls the VOC emissions from the automatic clear coat sections of the topcoat booths.

The topcoat process consisted of two parallel coating lines. Each line has a feather duster, 19 robots of which 16 are for painting and 3 are openers. The last 4 painters are used less than the others as they are only used for applying White Diamond Tri-coat materials. There is no manual painting performed at this facility. The following is a summary of the FG-Topcoat emission limits. See Content Manager for details on the emission calculation reports, auto protocol reviews, booth airflow report and thermocouple(s) validation.

Pollutant	Permit Limit	Actual Emissions May 2021
VOC	12.24 Lbs VOC/GACS (NSPS Limit)	10.95 Lbs VOC/GAC
VOC	5.42 Lbs VOC/GACS	1.63 lbs VOC/GACS Max daily for the month of April
VOC	4516 lbs VOC/day	831 lbs VOC/day highest day April 6th, 2019
VOC	583.6 tons per 12 month rolling time period	92.2 tons per 12 month rolling time period

Method 24 is performed by the coating supplier on each batch of coating. The supplier also determines the percent volume solids, density and provides monthly usage information to GM for compiling the records

A copy of the Booth Air Flow Report was obtained for May 6, 2021. This report demonstrates there was positive airflow into the controlled zones of the booth. This report documents: Good Water Flow Visual, Good Filtration visual, Good air flow and that there were no paint build up issues.

A copy of the annual auto protocol review was obtained for the 2019 & 2020 calendar year (completed 6/9/19 & 9/15/20). No significant changes have been made since the most recent performance tests conducted in September 2016 for Transfer Efficiency, February 2019 for CE, RE and DE. The thermo couples for the abatement equipment were recently calibrated on March 12, 2021. The PM, PM10 and PM2.5 emission rates for the Sealer RTO were verified during the August 2017 stack test. Previous test results were as follows:

Basecoat Solid	1/11/2012	5.472 lbs VOC/GAC	OSL Test
Basecoat Metallic	2/10/2012	5.004 lbs VOC/GAC	OSL Test
Clearcoat Booth	2/7/2019	67.2%	CE
Clearcoat Oven	2/7/2019	28.3%	CE
ELPO RTO	N/A	100%	CE

Rotary Carbon Concentrator	6/23/2020	97.5%	RE
Topcoat RTO	2/5/2019	97.0%	DE
ELPO RTO	2/8/2019	96.9%	DE
Guidecoat RTO	8/30/2017	0.2 lb PM/hr & 0.002 lb PM/1000 lbs of exhaust gas	PM emission factor

According to the protocol review document all the updated test values have been entered as inputs to the protocol calculations effective the date of test conclusion. A copy of the 2019 & 2020 auto protocol reviews are included in Content Manager.

FG-Solvents

EU-Purge - This operation is the purging of the paint lines and spray guns within the paint spray booths. The clear coat automatic paint robots are to purge into cups to collect the purge materials. When purging takes place within the controlled clear coat sections of the topcoat booths, the add-on VOC control equipment shall be in place and operating properly. Basecoat purge is collected by the internal line purge collection system. A tank in the mix room collects the purge solvents. Usage/purchase records are used with waste manifest records are used to complete the mass balance VOC calculations. These activities will involve the use of VOC containing materials and acetone.

EU-Other Solvents - These activities consist of booth cleaning, miscellaneous cleaning activities, body wipe, and materials added to the water wash particulate control systems. These activities will involve the use of VOC containing materials and acetone.

The following is a summary of the FG-Solvents emission limits. See attachments to this report for details on the emission calculations.

Pollutant	Permit Limit	Actual Emissions May 2021
VOC	1325 lbs VOC/day	210 lbs VOC/day
VOC	161.9 tons per 12 month rolling time period	38.8 tons per 12 month rolling time period

Acetone	698.9 Lbs per day	48.6 Lbs per day
Acetone	84.3 tons per 12 month rolling time period	9.9 tons per 12 month rolling time period

Copies of the FG-Solvent calculation records are in Content Manger. Method 24 is not typically performed on solvents with 100% VOC. The formulation VOC content of each material it normally used. The chemical manager provides the usage information to be included in the VOC reports each month.

FG-Repair

EU-Spot Repair

Four dry filter spot repair spray booths. The booths are equipped with air atomized applicators or equivalent technology with comparable or better transfer efficiency.

EU-Final Repair

Dry filter final repair spray booth, a small mix room enclosure and a general area for all other paint repairs. The booth is equipped with air atomized applicators or equivalent technology with comparable or better transfer efficiency.

The 4 dry filter spot repair booths are in the paint building while the final repair booth and some open repair areas are in the final assembly building. Basecoat and clear coat materials are taken from the mix room usually in quart size containers. The facility also utilized spray cans with cut through primers and small paint tubes. Usage information is obtained from both the mix room take records, chemical manager paint inventories and from the general assembly area. Formulation data from the supplier is used for the VOC content and mass VOC emission calculations. BASF also supplies a catalyst for BC/TC paints to cure at a lower temperature. The following is a summary of the FG-Repair emission limits. Copies of the records are included electronically in Content Manager.

Pollutant	Permit Limit	Actual Emissions May 2021
VOC	4.8 lbs VOC/gallon minus water as applied	2.99 lbs VOC/gallon
VOC & Acetone	212.2 lbs VOC/day	1.40 lbs VOC/day
VOC & Acetone		

	11.0 tons per 12 month rolling time period	0.41 tons per 12 month rolling time period
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FG-Tanks

EU-Gas Tank 1, EU-Gas Tank 2, EU-AF Tank 1, EU-AF Tank 2, EU-PR Tank 1, EU-Meth Tank 2, EU-TF Tank, EU-BF Tank, EU-PSF Tank. The following is a summary of the FG-Tanks emission limits. Records and calculations details are included in Content Manager.

Pollutant	Permit Limit	Actual Emissions May 2021
VOC & Acetone	50.9 lbs VOC/day	10.42 lbs VOC/day
VOC & Acetone	9.3 tons per 12 month rolling time period	1.51 tons per 12 month rolling time period

FG-MACT

Each new, reconstructed, or existing affected source as defined in Title 40 of the Code of Federal Regulations (CFR), Part 63.3082, that is located at a facility which applies topcoat to new automobile or new light duty truck bodies or body parts for new automobiles or new light duty trucks; AND/OR in which you choose to include, pursuant to 40 CFR 63.3082(c), any coating operations which apply coatings to new other motor vehicle bodies or body parts for new other motor vehicles; parts intended for use in new automobiles, new light duty trucks or new other motor vehicles; or aftermarket repair or replacement parts for automobiles, light duty trucks or other motor vehicles; and that is a major source, is located at a major source, or is part of a major source of emissions of hazardous air pollutants (HAPs) except as provided in 63.3081(c). This includes equipment covered by other permits, grandfathered equipment, and exempt equipment.

A review of the MACT summary report for January 2020 through April 2021 shows compliance with the respective limits. A copy of the MACT summary report is in Content Manager, the actual emissions for May 2021 were as follows:

Pollutant	Permit Limit	Actual Emissions May 2021
HAP-PS, Topcoat, Install, Final Repair	0.5 lbs HAP/GSA	0.30 lbs HAP/GSA

HAP – Sealers and Adhesives	0.01 Lbs HAP/Lb material	0.00 Lbs HAP/Lb material
HAP–Foam and Deadener	0.01 Lbs HAP/Lb material	0.00 Lbs HAP/Lb material

FG-OLD

Organic Liquid Distribution (OLD) (non-gasoline) MACT is for operations at major sources of HAP emissions. Specifically, these conditions cover existing (construction pre dates April 2, 2002) liquid storage tanks which hold more than 5,000 gallons but less than 50,000 gallons and/or new liquid storage tanks which hold more than 5,000 gallons but less than 10,000 gallons of methanol/windshield washer fill solvents that are dispensed to newly assembled vehicles.

GM LFT does still fill most vehicles with Methanol windshield washer fluid. However, some export vehicles are filled with Ethanol windshield washer fluid. The 50% Ethanol material is stored in 330 gallon totes inside the General Assembly Building. No other tanks greater than 5,000 gallons are subject to MACT EEEE. This FG only has notification obligations if the tank is replaced or reconstructed within the size requirements in the ROP.

FG-Facility

FG-Facility is a flexible group of requirements which apply to all emission units which are in the Body Shop, Paint Shop, Final Assembly and other areas pertaining to the building and assembly of automobiles. The only condition under this flex group is the production rate shall not exceed 74 jobs per hour. A review of the jobs per was done during this inspection for May 2021. All week's hourly production rates were well below the 74 jobs per hour limit. Production was between 53.3 and 53.7 jobs per hour for that time frame.

Process/Operation Restriction	Permit Limit	Actual Production Rate Month of May 2021
Production Rate	74 jobs per hour	Approx. 52.4 jobs per hour average

FG-Cold Cleaners

Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278 and Rule 281(h) or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979. The Body, Paint and General Assembly areas currently have 28 parts washers as of May 2021. The notes

the ID, Air/vapor interface area, the applicable rule, Reid vapor pressure, and the option to comply with Rule 707(2). A list of cold cleaners is included in Content Manager.

RTO, Concentrators

A review of the control equipment parameters was not conducted during the site inspection due to no production. The following parameters were observed from the previous inspection on June 11, 2019:

Topcoat RTO Chamber #1 Temp: 1537 deg. F (Set Point 1540 deg F)

Topcoat RTO Chamber #2 Temp: 1543 deg. F (Set Point 1540 deg F)

Cold Face #1 Temp: 233 deg. F

Cold Face #2 Temp: 230 deg F

149 second valve timing

Exhaust Temp: 292.5 deg. F

Inlet Temp: 199.1 deg F

Gas meter 7,788 CFH

RTO Ex. 48 Hz

CV 84%

ELPO RTO

RTO Chamber #1 Temp: 1527 deg. F (Set Point 1540 deg F)

Exhaust Fan: 60.0 Hz

Inlet Temp: 330 deg F

Gas meter 1,000 CFH

CV 22%

Concentrator	Number 1	Number 2
Wheel Fan	20 Hz	20 Hz
Desorb Supply	283.8 deg F	282.0 deg F
Outlet	96.7 deg F	96.7 deg F
Adsorb inlet	86.7 deg F	86.1 deg F

Pressure drop	2. “ wc	1.2 “ wc
Booth Exhaust	69.2 deg F	69.2 deg F
Motor	57.3 Hz	57.3 Hz

These values all indicated the control equipment was operating as intended and in compliance with the ROP requirements. Review of abatement equipment maintenance was conducted during this inspection. The previous inspections covered the 2014 & 2018 maintenance records. Copies of the abatement equipment maintenance records were obtained from January 1, 2020 through May 1, 2021. A review of this data showed the date, PM maintenance number or the reason for repair. The thermocouples were calibrated on 3/12/2021. These records have been included in Content Manager.

Emergency Engines

The facility currently has 3 emergency fire pump engines at the facility which are subject to MACT ZZZZ. 2 of the engines are diesel Compression Ignition (CI) engines and is covered under FG-CI RICE MACT, Fire Pump 1 has 280.2 total hours and Fire Pump 2 has 414.1 total hours. Non-emergency hours were 10.6 for Fire Pump 1, and 15.2 hours for Fire Pump 2.

The other emergency engine is a Spark Ignition (SI) engine and is covered under FG-SI RICE MACT. Monthly engine hour meter readings were obtained for each engine for January through May 2021. The engine has a total of 382.8 hours and has been operated for 11.7 non-emergency hours this year thus far.

Maintenance, testing and inspection records were obtained for each emergency engine and they were all completed in July 2020. Copies of these records can be found in Content Manager.

SECTION 2:

Central Utilities Complex (CUC)

During this inspection the CUC portion of the facility was not inspected. The CUC facility is responsible for providing the body, paint and assembly plant with reverse osmosis water, compressed air, heated and chilled water. The facility also accepts the waste water from those plants and is responsible for cooling the welder water. The facility utilizes various electric air compressors, RO water generators, chillers, cooling towers and the 3 natural gas fired boilers.

Typically, only 1 of the 3 natural gas fired boilers (rated at 93.5 mmBTU/hr) had operated at any given time as they are very much oversized. CUC emission records were obtained and the emissions for January 2019 through October 2020. The October 2020 emissions were as follows:

Pollutant/Process/Operational Restriction	Permit Limit	October 2020
NO_x	12.3 tons per 12 month rolling time period	2.0 (previously 3.04) tons per 12 month rolling time period
Million Cubic Feet per Year	491 MMCFT/year	79.546 (previously 60.802) MMCFT/yr
Million Cubic Feet per Hour	0.28 MMCFT/hr	0.026 maximum on January 21, 2020. (January 2020 record provided)

Boiler 3 mentioned above was dismantled in January 2020. Boilers 1 & 2 were decommissioned on November 13, 2020 as the Natural Gas and Electrical supplies have been removed. Boilers 1 & 2 will remain abandoned in place. All three boilers stopped using natural gas in October 2020.

The 3 boilers above have now been replaced by 5 Cleaver Brooks natural gas fired boilers rated at 8 MMBTU/hr each. These boilers were installed on August 30, 2020 and became fully operational on October 11, 2020.

Boiler MACT

The three boilers mentioned above are subject to Boiler MACT DDDDD. A copy of the latest tune-up report was obtained. The tune of Boilers 1 & 2 was conducted on December 19, 2019. Boilers 1 & 2 did appear to have some maintenance issues (bad low pressure gas switch, check valves, high temp switch, combustion damper, purges every 10 minutes, damper falling apart) but they were also removed from service in October 2020. The CO emissions were optimized on both boilers for low, mid and high-fire burn rates. I also did not visit the CUC facility to observe the Boilers during this inspection.

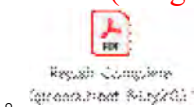
Conclusion

A follow up email was sent to Brian Borzenski and Jessica Alderton on 8/11/2021 requesting additional information/clarification on 6 items related to the review above. A response from Brian was provided on August 31, 2021 as follows:

- For the ELPO records why are the Biocides and Acetic Acid-Glacial usages the same each month for the past 12 months or the amount of records provided?
 - **Acetic Acid-Glacial:** The value listed in the monthly records was an estimate of the worst-case addition of that material to the ELPO anode system. The vast majority of glacial acetic acid is used as a Phosphate stage cleaner. Note that the full amount of glacial acetic acid used is also recorded in the FG-Solvents emission unit.
 - We have implemented a new tracking log that will account for actual usage of Acetic Acid in the ELPO anolyte system. We'll be recording actual usage in the future.
 - **Biocides:** The biocide usage is provided by our BASF supplier on a monthly basis. The biocides get added into the system on a regular and consistent basis, so the usage rates of those materials are very consistent. Based on your feedback, I communicated with the chemical supplier that it is critical to keep accurate monthly records.
- For Guidecoat, how were the VOC Contents/Mass VOC emissions determined? What is the powder density or the other calculation parameters?
 - We have data from the powder prime supplier that states the material's VOC content is 0.089 lbs/gal (via EPA Method 24) and the % wt solids is 99.27%. Using a density of roughly 12 lbs/gal we convert the pounds of powder prime material used each month into gallons.
 - Those numbers are then used in the traditional "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Primer-Surfacer and Topcoat Operations" (aka VOC Protocol) calculations to determine the VOC emissions. We do not claim VOC abatement credit for the Primer system, even though there is an RTO for the guidecoat curing oven.
- In a portion of the records (perhaps repair?) there was a regulatory interpretation that usage of all aerosol cans is assumed to be 75%. How was this determined? How is the Aerosol repair paint usage excluded from the Lb VOC/Gallon minus H2O and Acetone calculation?
 - I (Brian Borzenski, GM LDT Environmental Engineer) took a sample of cans found in the plant's aerosol can recycling container on 3/3/18, weighed the cans, and compared the result to full cans to determine the % of aerosol material used. The "Reclaimed Gallons" column is the only calculation that applies the '75% used/25% reclaimed' values. The VOC and Acetone emissions are calculated based on 100% of the aerosol material usage.
 - The "regulatory interpretation" that repair aerosol cans should not be included in the 4.8 lb VOC/gal calculation is based on a fairly thorough review of the regulations and back up documentation that Jessica Alderton and I went through in July of 2019.
 - Please refer to "Control Techniques Guidelines for Automobile and Light-Duty Truck Assembly Coatings" (2008 CTG, September 2008, [link](#)). Among several sections of this document that suggests aerosol cans should not be considered as automotive repair coatings when determining the 4.8 lb VOC/gal RACT limit, Section IV (Process Description and Sources of VOC Emissions) specifically mentions that aerosol coatings were not included in the automobile assembly coating category:

Aerosol coatings are not included in the automobile and light-duty truck assembly coating category. Aerosol coatings are a separate category under section 183(c) and are addressed by the national VOC rule for aerosol coatings.

- Repair records show gallons usage and VOC lb/gal minus H2O. But when multiplied together they don't equal the reported lbs VOC. Or, records has gallons w/water X lbs VOC/gal -H2O, then reports total Mass Lb VOC w/H2O.
 - The "Usage Gallons" value includes water, so multiplying that by the "VOC lb/gal Minus Water & Acetone" value won't result in the correct mass emissions. Additionally, that "VOC lb/gal Minus Water & Acetone" value does not include the aerosol materials due to the explanation above.
 - There were quite a few columns that were hidden from view and contained supporting documentation that handles the water and acetone content of the materials. I've unhidden those columns and imbedded the full May 2021 file below. Let me know if the math still does not work out.
 - For the May 2021 example, the following 2 calculations will produce similar results:
 - (Usage Gallons)*(VOC w/ H2O (M24)) = VOC mass emissions
 - Or
 - (Usage Minus Water (Gal))*(VOC w/o H2O (M24)) = VOC mass emissions
- May 2021 – FG-SOLVENTS, Gage CN31922 clearcoat purge shows 2700 gallons used, 1647 gallons reclaimed, please explain the mass VOC emitted.
 - (2700 gallons used) – (1647 gallons reclaimed) = (1053 gallons net used)
 - (1053 gallons net used) * 5.71 lbs VOC/gallon = 6013 lbs VOC net used
 - Because this solvent is sprayed inside a controlled portion of the topcoat process, we apply the control efficiency of the carbon concentrators and the destruction efficiency of the RTO:
 - (Lbs VOC net used) * (1 – (RCC Control Efficiency)*(RTO Destruction Efficiency)) = lbs VOC Emissions
 - (Lbs VOC net used) * (1 – (0.975)*(0.97)) = lbs VOC emitted
 - (Lbs VOC net used) * (0.054) = lbs VOC emitted
 - (6013 lbs VOC net used) * (0.054) = 325 lbs VOC emitted
- Was EU-Boiler 3 (older unit 85 MMBTU/hr size unit) operational anytime after January 2019?
 - Correct, EU-Boiler 3 did not operate after January 2019. Boiler 3 was disconnected in December 2019 and removed from the site in January 2020.



The site inspection concluded outside the paint shop with a brief discussion with Jessica and Brian covering the inspection. There were no outstanding issues at the GM Delta Township assembly plant and based upon my review at this time, the GM Delta Township Assembly Plant was in compliance with all their ROP obligations in MI-ROP-N6950-2020 which was issued on June 4, 2020.

NAME Robert Byrnes

DATE 09/28/2021

SUPERVISOR B.M.