

M4199
MANILADEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

ACTIVITY REPORT: Scheduled Inspection

M419941671

FACILITY: GENERAL MOTORS LLC DETROIT-HAMTRAMCK ASSEMBLY		SRN / ID: M4199
LOCATION: 2500 E GENERAL MOTORS BLVD, DETROIT		DISTRICT: Detroit
CITY: DETROIT		COUNTY: WAYNE
CONTACT: Brian Wilger, Senior Environmental Engineer		ACTIVITY DATE: 09/19/2017
STAFF: C. Nazaret Sandoval	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: FY 2017 - Targeted Inspection		
RESOLVED COMPLAINTS:		

SCHEDULED INVESTIGATION REPORT
(PCE for an FCE source)**Inspection Date:** September 19, 2017**Source:** General Motors LLC, Detroit-Hamtramck Assembly Center**SRN:** M4199**Address:** 2500 E. General Motors Blvd., Detroit, Michigan 48211-2002**Subject:** Scheduled Investigation**Author:** Nazaret Sandoval, Air Quality Division, Detroit Office**Safety Equipment/Safety Training/Security:**

Shoes or boots are required in all areas of the facility. Coveralls (provided by the plant) are required in the paint shop. Safety glasses with side shields and cut-resistant arm sleeves (provided by the plant) are required in the body shop. Safety glasses and hearing protection are required in the boilerhouse. A hard hat is not required. Plant personnel must be notified in advance to gain access to the topcoat booth area or the paint mixing area because the clearcoat guns spray a diisocyanate and GMDH requires all visitors to these areas to have passed a respirator test.

The main entrance to the plant is off the I-94 service drive; a visitor is required to sign in at the guard shed and give vehicle make and license plate number. After turning right at the end of the entrance road the visitor's lot is the second on the right in front of the visitor's entrance. A visitor must sign in at the front desk and show ID. A safety video must be viewed once per calendar year, after which time a Safety Protocol Program card will be issued for that calendar year.

Facility Background:

The General Motors Detroit-Hamtramck Assembly Center (GMDH) is an auto assembly plant capable of producing approximately 78 vehicles per hour. GMDH is the sole production facility for the Chevrolet Volt, Buick LaCrosse, Cadillac CT6 and the Chevrolet Impala. The plant typically runs one production shift from 6 AM to 4:30 PM, Monday through Thursday, with maintenance shifts on off-production hours. Major areas of the plant include, the body shop, the paint shop, and the assembly area. The boilerhouse has drastically reduced its operations since January 2016, after the discontinuation the coal-handling system operations and the shutdown of the coal-fired boilers No.2 to No. 4 on December 31, 2015. Only one boiler (Boiler No 1) is slightly used at the powerhouse, and it runs on natural gas only.

When constructed in the early 1980s this facility underwent Prevention of Significant Deterioration (PSD) permitting for sulfur oxides (SO₂) and nitrogen dioxide (NO_x), and underwent Nonattainment New Source Review permitting for particulate matter (PM), volatile organic compounds (VOC), and carbon monoxide (CO). The source has the potential to emit over 100 tons per year of VOC and is also a Clean Air Act Section 112 major source for Hazardous Air Pollutants (HAPs); therefore, it is a source subject to the Title V program, known as the Renewable Operating Permit (ROP) program in Michigan. Paint shop operations are subject to both the New Source Performance Standards (NSPS) at 40 CFR 60, Subpart MM and the National Emissions Standards for Hazardous Air Pollutants (or MACT) at 40 CFR 63, Subpart IIII. Boiler No. 1 is subject to the MACT standards at 40 CFR 63, Subpart DDDDD, but due to the date of construction is not subject to the NSPS, Subpart Dc regulation. The thermal oxidizers in the paint shop is subject to the federal Compliance Assurance Monitoring (CAM) regulation at 40 CFR 64.

Process Description:

GMDH assembles and paints automobiles from vehicle parts shipped to the site. Vehicle bodies are first ground and welded during various steps in the body shop. Some grinding and welding booths are equipped with add-on

fabric filters that vent back into the plant; otherwise, these operations vent uncontrolled to the in-plant atmosphere, which itself is filtered and returned.

Vehicle shells exiting the body shop are submerged in a tank and passed through a series (stages) of washes in the pretreatment system. The pretreatment begins with a deluge of water to remove any loose metal, dust, welding slag, etc. on the vehicle, followed by detergent washes, water rinses, and finally a solution wash (Zinc-Orthophosphate) to enhance paint adhesion and corrosion resistance. Minimal VOCs are used in these washes and the pretreatment system vents uncontrolled to ambient air. As part of a project modification approved in 2016, a stage five (hydro-cyclone) has been added to the pretreatment area. In this stage, water recirculation through a series of piping, pumps and valves helps filtering the sludge generated in the Zinc-Orthophosphate stage, keeping the paint bath clean of unwanted contaminants. Vehicle shells are then dip-coated with a water-based prime coat, called the electrocoat or ELPO, and then passed through a multi-staged curing oven. One electrocoat line serves all the vehicles at the plant. Formerly, exhaust from the electrocoat oven vented uncontrolled to atmosphere; now, the oven exhaust is controlled by a regenerative thermal oxidizer (RTO).

Following the ELPO, vehicles are painted with a solvent-based prime coat, called the guidecoat or primer surfacer, and dried in a curing oven. One primer surfacer line serves all the vehicles at the plant; two parallel curing ovens (north and south) serve the primer surfacer line. The primer surfacer is colored white or gray depending on the topcoat to follow. The primer surfacer is applied robotically with electrostatic spray applicators in an enclosed booth with a downdraft "waterwash" system wherein the flow of air in the booth is blown down from the ceiling through a grated floor and into a water stream flowing belowground. The spray applicators are purged internally to a collection tank. Wet sand ovens, anti-chip coating, and basecoat replacement (BCR) coating activities formerly associated with the primer surfacer booth are no longer utilized. The BCR refers to the manual application of basecoats to the underside of the gas cap, hood, and trunk within the primer surfacer booth; in 2007, these basecoats were moved to the topcoat.

After the primer surfacer, the vehicles are coated with a colored, water-based basecoat and then a transparent, solvent-based clearcoat, followed by drying in a curing oven; this coating combination is termed the topcoat. Seven topcoat lines serve the vehicles at the plant; each topcoat line has its own dedicated curing oven. An eighth topcoat line with curing oven is installed but has not been used for a number of years. As with the primer surfacer, both the basecoat and clearcoat are applied robotically with electrostatic spray applicators in enclosed booths equipped with downdraft waterwash systems; the spray applicators purge basecoat into the waterwash and clearcoat into a collection tank.

Emissions from each curing oven are incinerated in a thermal oxidizer dedicated to that oven. Each thermal oxidizer is of recuperative design; the oxidizer exhaust, prior to its vent to atmosphere, is used to preheat the curing oven. Interlocks installed at the primer and topcoat ovens automatically shut down the line associated with the oven if the oven thermal oxidizer registers a temperature less than 1300°F; the line will not restart until the temperature stabilizes above 1300°F for one minute. These interlocks were installed in response to multiple occasions in the early 2000s when the incinerator temperature at a topcoat oven fell below 1300°F for an extended period of time.

Various sealers and adhesives are applied to vehicle bodies throughout the body shop and paint shop to improve structural stability and reduce noise. Robotic hands apply the sealers and adhesives from wands as a paste or putty, therefore, 100% transfer is achieved and the application is performed open-air in the plant. Ultraviolet dyes in the sealers/adhesives allow plant inspectors to corroborate proper application when the vehicles pass under UV light. The acoustical/structural foam operation to improve crash worthiness from side impacts ceased in 2006. A sound deadener application to the underbody of the wheel housings ceased in 2010. Improved vehicle designs have rendered both operations obsolete. Some vehicles (i.e. Buick) require the application of an antichip sealer. The application occurs in a section of the sealer area. Robots spray a thin coat or a mist of antichip sealer along the main side rail of the cars (the bottom part under the door). The applied material has more than 94% solid content by weight and is similar in properties to paint shop sealer.

After leaving the paint shop, the coated vehicle shell is merged with the vehicle's undercarriage, interior, engine, etc. in the final assembly area. The vehicle is filled with gasoline, brake fluid, and other necessary liquids, tested to ensure that it will start, inspected, and then parked prior to shipping. If imperfections or scratches are observed in the surface coat during the final inspection the vehicle is driven into stand-alone enclosures, called the final repair booths, for the manual application of touch-up paint. The booths are equipped with fabric filters for particulate control. Solvent wipedowns and booth-cleaning operations throughout the plant are a source of volatile organic compound emissions.

Steam for the assembly plant operations was formerly provided by four spreader stoker coal-fired boilers; boiler #1 to #4, located at the northern end of the plant at the boilerhouse. However, after the permanent shutdown of boilers #2, #3, and #4 in December of 2015; steam is provided to GMDH by a private supplier. In addition, the coal-firing capabilities for boiler #1 (rated at 84.0 MMBtu/hr.) were removed in December 2015 and boiler #1 is currently firing natural gas only. Boiler #1 is used in rare occasions to supplement steam to the plant. The plant is permitted to temporarily install up to two 92 MMBtu/hr natural gas-fired rental boilers.

Summary of Facility Visit:

I arrived at GMDH the morning of 9/19/2017 at about 8:30 AM. The sky was mostly cloudy with nearly calm conditions with a NE wind of 4 mph and a temperature in the middle 60s°F. No odors were noted from surveillance around the plant and no visible emissions were observed from the boilerhouse stack (the orange and white striped stack) or the building stacks (assembly, body shop, and paint area) at any time during surveillance or during the inspection.

I obtained the safety certification, and was met at the reception by Mr. Brian Wilger, Senior Environmental Engineer, of GMDH's environmental staff. We proceeded to a conference room where we met with the rest of the GMDH's environmental staff who participated in the inspection discussions; they were: Mr. Apurva Pujara, GM Global Environmental Compliance & Sustainability; Ms. Stacey Helton, Environmental Group Manager; and Ms. Abigail Branderburg, Tetrattech Support.

The purpose of the inspection was to verify GMDH's compliance with the requirements of Article II, Air Pollution Control, Part 55 of Act 451 of 1994, and with the conditions of permit MI-ROP-M4199-2010 renewed by AQD on 2/17/2010. After stating the purpose of the inspection and agreeing on the sequence of activities that I would be covering during the day, we started the plant walkthrough at about 9:30 AM. For ease of reading the inspection narrative will generally follow the flow of a typical vehicle through the plant, though in some cases, the inspection itself did not follow this exact sequence.

The body shop was observed first. The body shop consists of various welding and grinding stations designed to assemble the outer shell of the vehicle and prepare it for painting. Various stations for the application of sealers and adhesives are also located here. All emissions are directed to the in-plant air which itself is filtered and returned. Particulate emissions are controlled by fabric filters on some equipment. Minimal visible emissions were observed within the body shop area and no visible emissions were observed exiting the body shop area.

At about 9:50 AM we met with Mr. Erick Man, GMDH Process Engineer at the pretreatment system; he accompanied us to discuss/explain the pre-treatment process, ELPO system and the sealers application process. The pretreatment system collectively describes all detergent washes and rinses after the body shop and prior to the electrocoat. Minimal VOCs are used in these washes and the pretreatment system continues to vent uncontrolled to ambient air. The waterborne electrocoat (ELPO) is relatively low in VOCs and the transfer efficiency is near 100%. The cars colors change from silver-gray to olive green after the ELPO's curing ovens. Prior to 2010 emissions from the dip tank and curing oven vented to atmosphere uncontrolled. In 2010, GM installed a natural gas-fired two chamber (alternating) regenerative thermal oxidizer (RTO) to incinerate VOC emissions from the curing oven. The RTO was observed operating at 10:13 AM with an active combustion chamber temperature of 1481°F. The RTO is located along the eastern wall of the plant; both the primary exhaust stack following the oxidizer and the bypass stack preceding it appear to equal the stack heights of the former oven exhaust vents. From the ELPO system we proceeded to the sealer and adhesive area, stopping by the quality control area where the cars are inspected to detect irregular surfaces that could prevent paint-adhesion. The cars are manually sanded/polished to smooth out any uneven surface. We left these areas at about 10:55 AM.

Bill Stockwell, GMDH staff at the Primer/Topcoat areas, walked us through the primer surfacer and the top coat booths. The primer surfacer booth was observed at about 11:40 AM, after the conclusion of the plant's lunch break, which took place from 11 to 11:30 AM. Formerly, the sides of the vehicle were coated by robotic arms while the top of the vehicle was coated from overhead by a row of spray nozzles on a lowered beam, termed the "bells". Since August 2011, the overhead bells have been removed from the primer surfacer booth and replaced by eight new robotic coating arms (6 are active and two are back-up). The robotic spray guns were observed to purge into an enclosed cup between color changes. The waterwash system was observed operating in the primer surfacer booth during the inspection. At 11:45PM, at the computer display near the south oven the oxidizer temperature registered 1310°F and the north oven showed 1315 °F. The set point for both ovens was set at 1320 °F. The display also showed various (lower) temperatures corresponding to three distinct zones in the ovens; which varied from 320 °F in Zone 3, to 474 °F in Zone 1

The topcoat booths were viewed from an observation area at their entrance during the plant's lunch-break, since no activity was occurring at the primer surfacer booths at that time. The clearcoat lines spray diisocyanate, a sensitizer, and GM requires a respirator test for all employees and visitors who are to enter the topcoat booth or

the paint mix room. Seven of the eight topcoat lines are in regular use; line #8 has not been in use for several years. As with the primer surfacer, all the overhead bells formerly installed in the topcoat booths have been replaced with robots.

At 11:08 AM, some of the topcoat lines were observed receiving cars. The oven oxidizer temperatures registered the following from a computer display at this location: north prime – 1315°F, south prime – 1319°F, topcoat #1 – not in-use at the time of the visit, topcoat #2 – 1320°F, topcoat #3 – 1322°F, topcoat #4 – 1318°F, topcoat #5 – 1317°F, topcoat #6 – 1319°F, topcoat #7 – 1335°F. The display also indicated the number of jobs that had been processed in the primer surfacer booth since the starting of operations. At 11:09 AM the display showed a total number of 178 jobs.

During the afternoon, around 1:30 PM, we walked to the final repair area. A final repair activity was not viewed at the time of the inspection though the booths were observed. There are twelve (12) booth in the final repair area and on average, 5 to 6 booths are used at a time. Filters are regularly inspected and replaced a few times per year. They last between 60 to 90 days, depending of the usages of the booth.

A cold cleaner installed near the final repair booths was viewed. The cover was observed to be closed and a sign posted with proper procedures (keep cover closed when not in use, etc.); the emissions vent to the plant environment.

From this point on, only Mr. Wilger and I continued the site inspection until I completed the evaluation of the rest of the emission units covered in the ROP.

Five (5) roll test stations (chassis dynamometers) are installed to test engine and powertrain performance; emissions are vented uncontrolled to atmosphere.

The gasoline and fluid (transmission, power-steering, etc.) fueling operation is conducted open-air in the final assembly area. Fuel and fluid tanks are located just to the east of the powerhouse; a dozen horizontal tanks are installed, seven of them are in use. All the tank inlets and returns are located on a pipe break a few feet above the ground on the east side of the tanks. The connections appear to have interlock and vapor-tight disconnect systems, though their presence was not definitively confirmed by visual observation. The tanks are filled via permanent submerged fill pipes.

An inspection from the roof was not conducted during the site visit. Viewing the stacks from ground level outside the paint shop none raised a question of noncompliance with the stack height or diameter conditions within the ROP. The stacks to the east are for the pretreatment and electrocoat; stacks to the north vent the primer surfacer and topcoat ovens. The tall tan-colored stack is the combined exhaust for the primer surfacer and topcoat booths. No visible emissions were noted from any stack.

The boilerhouse is located at the northern end of the plant. As indicated earlier, Boilers # 2 to #4 have been permanently shut down, and are no longer producing steam. During my visit I verified that all coal that used to be stored in open-air piles northwest of the boiler house has been removed from the site, the supply of water is discontinued, and the boiler control panels were locked out. The coal handling system and the fly ash and bottom ash system that services the boilers have all been disabled. The natural-gas fired, Boiler #1, is the only emission unit that can generate steam at the powerhouse. Boiler # 1 was not in operation at the time of the inspection. The CEMS/COMS were deactivated showing no readings at the control room display.

In the powerhouse, I checked one of the emergency generators. The generator was a "Magna One" with output power of 1,000 KW. The hourly reader indicated a total of 17.8 hours (old hours) and 38.0 hours (new hours).

The site inspection concluded at about 2:30 PM; Mr. Wilger and I returned to the conference room to join the rest of the GMDH group for a discussion of the ROP monitoring/recordkeeping requirements and the closure remarks. I informed the group that I had not observed violations during the facility visit. However, a final compliance determination will be provided after the information collected is analyzed and a final inspection report is written. I signed out of the plant and left the property at about 4:45 PM.

Compliance Status:

The General Motors Corporation's Detroit Hamtramck Assembly Center was issued renewal MI-ROP-M4199-2010 (ROP) on 2/17/2010 with expiration date on 2/15/2015; the initial ROP was issued 12/4/2003.

GMDH timely submitted an ROP renewal application to AQD Detroit Office (AQD) on June 27, 2014 (via email). A hard-copy of the ROP renewal application was received by AQD on June 30, 2014. An application shield letter was issued by AQD to GMDH on July 2, 2014 to acknowledge that the renewal application was administrative complete and that the existing ROP shall not expire until the renewal permit is issued or denied. A technical review is

currently being conducted by AQD staff. At the time of the writing of this report an "ROP Working Draft" (dated May 8, 2017) is under discussion with GMDH.

Two permits to install (PTI) have been issued to the facility since the 2010 ROP renewal; PTI 196-14 and PTI 91-15. PTI 196-14, issued on April 2, 2015, proposes to modify the topcoat operations at GMDH. The proposed project involves a variety of activities but the main activity is the installation of new natural gas-burning equipment as part of the topcoat operations. Fourteen "air supply houses" will be installed, and seven regenerative thermal oxidizers (RTOs) will replace the existing oven incinerators. The project will be implemented in phases and the RTOs will not be installed at once.

PTI 91-15, issued on July 14, 2015, was for the elimination of coal capabilities at the powerhouse and permanently shut down boilers 2,3 and 4 along with their associated coal/ash handling equipment.

The last site inspection was on 9/14/2015 and a full compliance evaluation (FCE) covered the period from 1/1/2014 to 9/14/2015. In general, unless otherwise stated, this inspection report covers the observations/discussions conducted during the site inspection of 9/19/2017 and the compliance activities that have occurred during a 12-month period from August 2016 through July 2017. A request for information from GMDH related to compliance activities (i.e. monitoring/recordkeeping emission records, maintenance records, etc.) regulated under the ROP was handed out to GMDH staff on the day of the inspection on 9/19/2017. AQD collected most of the data during the inspection.

MI-ROP-M4199-2010, General Conditions

9, 10 – Compliance – Collected air contaminants shall be removed to maintain controls at required collection efficiency; air cleaning devices installed and operated in a satisfactory manner – Controls were installed and operating as directed by the ROP during the 9/19/2017 inspection.

11 – Compliance – Visible emissions limited to 20% over a six-minute average, with the exception of one 27% six-minute period per hour, unless otherwise specified in the ROP or in a federal new source performance standard. This limit applies to point source (non-fugitive) emission units at the plant – I did not observe visible emissions exceeding 20% opacity during the 9/19/2017 inspection.

12 – Compliance – Nuisance emissions prohibited – No citizen complaints have been received by the AQD's Detroit Office for GMDH in the period since the last inspection.

19 through 23, 25 (and under individual EU/FG tables at SCs VII.1 through 3) – Compliance – Semiannual deviation reports, Rule 912 reports, compliance certifications and report certifications – Semiannual deviation reports and annual certifications for year 2016, and for the first quarter of year 2017 were timely submitted, reviewed by AQD and saved in MACES database. Please see reports M419941680 and M419941681.

24 – Compliance – Submissions to the emissions inventory. The AQD received this facility's 2016 MAERS report (submitted online) and certification on 3/15/2017. Please see report M419940285 for audit comments.

MI-ROP-M4199-2010, SOURCE-WIDE

III.1 and 2, VI.1 through 3 – Compliance – Production limited to 78.5 jobs per hour averaged over the hours of operation for a calendar month and 337,500 jobs per calendar year. Daily and monthly records of the hours of operation and jobs produced for the assembly line shall be maintained.

DMDH tracks the jobs per calendar year as well as the hours of operation in a daily, monthly and yearly basis. The total jobs per hour is averaged over the hours of operation for a calendar month.

Two sets of records were collected during the inspection of 9/19/2017. One set shows records for calendar year 2016, from January 2016 to December 2016. Another report shows records for the period from August 2016 to July 2017.

According to the records, the highest number of jobs per hour were reported on:

- For year 2016 - January 2016, with 36.63 jobs per hour (Appendix A.1)
- From August 2016 to July 2017 - December 2016, with 34.89 jobs per hour. (Appendix A.2)

In both cases the values were below the permit production limits and it was under 50% of the maximum allowable production.

In calendar year 2016 the total number of jobs was 109,287.00; which is also below the permit limit. Copies of the records provided by GMDH are in Appendix A)

MI-ROP-M4199-2010, EUPRETREATMENT

VI.1 – Compliance – Maintain chemical data for materials used in the pretreatment process – MSDSs for the pretreatment chemicals were provided in the 9/25/2013 submittal as part of the inspection conducted in 2013. MSDS were requested during this inspection of 9/19/2017 but GMDH staff indicated that there have been no major changes in the materials used in the pretreatment process and the information on AQD files should still be current. However, AQD followed up with an electronic message requesting MSDS updates for further review in future visits.

VIII.1 through 9 – Compliance – Each of nine stacks to vent unobstructed vertically at a height not less than 53 feet above ground and with no minimum diameter – With the exception cited below, it is believed that the stacks have not been modified since their installation and are judged to be compliance with the cited requirements, though measurements were not performed.

According to a previous inspection report dated 9/25/2013, windy conditions damaged the stack identified as SV006. A section of the stack broke away, leaving it 48 feet high until it was restored to a height of 65 feet on 4/6/2013.

MI-ROP-M4199-2010, EUELPOSYSTEM

I.1 through 4, VI.1 through 3 – Compliance - Monthly emissions and operations data are reported for the electrocoat in the semiannual VOC reports submitted by GMDH. The reported emission cited on the table below are the highest reported values for the evaluated period, from July 2016 through June 2017. The information was obtained from the semiannual reports received by AQD for the cited periods (NSPS MM: 7/1/2016 to 12/31/2016 - postmarked 2/1/2017; 1/1/2017 to 6/30/2017- postmarked 7/28/2017). Records are attached in Appendix B. The emission limits specified under SC I.1 to SC I.4 and the reported emission are summarized below.

Pollutant	Limit	Time Period/ Operating Scenario	Reported Emissions (*) Period 7/2016 to 6/2017
1. VOC	76.8 pph	Averaged over the operating hours in a calendar month (LAER)	16.22 - Sept 2016 (App. B.1) 30.76 - Jun 2017 (App. B.2)
2. VOC	0.16 kilograms per liter of applied coating solids	Calendar month volume weighted average (NSPS)	0.09 – Aug/Sept 2016 (App.B.1) 0.08 – mostly all period 2017 (App. B.2)
3. VOC	1.2 pounds per gallon coating, minus water, as applied	Calendar month volume weighted average (Rule 610)	0.63 – Aug 2016 (App B.1) 0.57 – Apr 2017 (App B.2)
4. VOC	172.8 tpy	As determined at the end of each calendar year (LAER)	15.79 - end of Dec. 2016 (App. B.1)

(*) same units cited for limits

Each semiannual VOC report contains material usage and production information. As it has been observed in previous inspection reports, GMDH reports ELPO emissions data without applying a credit for VOCs abated by the RTO that controls emissions from the ELPO oven exhaust; the VOC emissions data for the ELPO emissions unit is therefore conservative.

V.1 – Compliance – Currently, the VOC content for water-borne and non-water-borne primers are determined by the coating manufacturer, using EPA Reference Method 24. Accordingly, the VOC contents are listed in the primers MSDS, and used for emissions calculations. However, GMDH expressed its preference to determine the VOC contents for the said primers from formulation data. Per information cited in the previous inspection report (year 2015), it appears as if GMDH submitted a request to the AQD to use formulation data.

VIII.1 through 14 – Compliance – Each of fourteen stacks to vent unobstructed vertically at a height not less than 53 feet above ground and with no minimum diameter –The oven exhaust from the electrocoat ovens have been redirected to an RTO which vents unobstructed vertically through a stack at a height equivalent to the listed oven stacks.

IX.1 – Compliance – Electrocoat must meet the requirements of NSPS MM – SC I.2 is based on the NSPS and semiannual reports have been received to demonstrate compliance with the emission limit. A more detailed compliance analysis of this special conditions is included later in this report under “NSPS MM for Automobile and Light-Duty Truck Coating Operations”.

MI-ROP-M4199-2010, EUPRIMERSURFACER

Special Conditions SC I.1 to SC I.8 are evaluated below.

Pollutant	Limit	Time Period/ Operating Scenario	Reported Emission Rate
1. PM	2.42 pph	Averaged over the operating hours in a calendar month.	0.70 pph - Highest reported on Nov 2016 – Evaluated period from: 8/2016 through 7/2017 -See App. C.1
2. PM	5.45 tpy	As determined at the end of each calendar year	0.78 tpy - 12-month total PM emitted from 8/2016 to 7/2017 See App. C.1
3. VOC	109 pph	Averaged over the operating hours in a calendar month (LAER)	22.42 pph - Highest reported on Jun 2016 Evaluated period from: 8/2016 through 7/2017. See App. C.2
4. VOC	1.40 kilograms per liter of applied coating solids	Calendar month volume weighted average (NSPS)	0.79 Kgs/LSA - Highest reported on 10/2016 Evaluated period: 7/16 to 6/17) – see report M419941676 in App. C.5
5. VOC	14.9 pounds per gallon of applied coating solids	Calendar day volume weighted average as determined by the procedure specified in R 336.1610(6)(b)	4.15 lbs/GSA - Highest controlled (5/4/2017) Evaluated period: 7/16 to 6/17 - See App. C.5
6. VOC	245 tpy	As determined on a 12-month rolling total at the end of each calendar month (LAER)	25.45 tpy – end of 7/2017 (evaluated period: 7/16 to 7/17 - See App. C.2
7. VOC	12.6 pph	Averaged over the operating hours in a calendar month	N/A - see explanation below under I.7 and 8, VI.13 and 14
8. VOC	28.5 tpy	As determined on a 12-month rolling total at the end of each calendar month	N/A - see explanation below under I.7 and 8, VI.13 and 14

I.1 and 2, VI.11 and 12 – Compliance –PM emission rates in pph and tpy are limited to the values showed on the table above for the operating scenarios. Record to be maintained.

PM records for the period 8/2016 through 7/2017 were provided on the day of the inspection on 9/19/2017. During this period, the maximum monthly emission rate and the total PM emissions for the 12-month period were below the permit limits. Although the annual emission limit is only to be applied at the end of each calendar year, the 12-month total indicates the annual calendar year PM emissions are likely far below the annual PM emission limit.

I.3 through 6, VI.1.a through f, VI.2.a and b – Compliance – VOC emissions are limited to the values showed on the table above for the operating scenario. Records to be maintained.

VOC emission records for the period 8/2016 through 7/2017 were provided by GMDH as part of the inspection. Based on this data, during the evaluated period the maximum monthly VOC emission rate in pounds per hour in a calendar month and the 12-month rolling total at the end of July 2017 were below the (LAER) ROP limits. See summary table above and records in Appendix C.2.

Monthly coating usage, coating composition, vehicle data, and VOC emissions are reported for the primer surfacer in the semiannual VOC reports submitted by GMDH. The semiannual reports covering the period 7/2016 through 6/2017 were evaluated. During this period AQD received two NSPS MM and two VOC Protocol reports on the following dates: 2/1/2017 and 7/28/2017. GMDH does not account for oven abatement in the NSPS emissions calculations and reports a maximum of 0.79 kilograms per liter of applied coating solids (10/2016). Oven abatement is utilized for the Auto Protocol calculations and GMDH reports a maximum of 4.15 pounds per gallon of applied coating solids (5/4/2017); without oven abatement, the maximum reported emissions remain compliant at 7.68 pounds per gallon of coating of applied coating solids (1/6/2017). Please see report M419941676.

I.7 and 8, VI.13 and 14 – Not Applicable – The anti-chip application was last utilized in the 1990s and is not currently in operation.

III.1, VI.9 – Compliance – Primer surfacer booths shall not be operated unless the downdraft waterwash system is installed and operating properly; daily visual inspections – The waterwash system was observed operating at the primer surfacer booth during the 9/19/2017 inspection. Waterwash inspection logs for the primer surfacer booth for the month of July 2017 were collected on the day of the inspection. Records show that visual inspections are conducted daily and no issues were noted on the inspection logs. See App. D.1

III.2, IV.1, VI.3 through 8, 15 and 16 – Compliance – Primer surfacer booths shall not be operated unless the associated oven incinerators are installed and operating properly, including maintaining either a minimum 1300°F oven temperature or a 1300°F average over three hours in each incinerator, and maintaining a minimum retention time of 0.5 seconds in each incinerator; temperature measuring device installed, temperature recorded at least once every 15 minutes, and device accurate to either 0.75% of temperature or within 2.5°C; monthly summary of thermal oxidizer data and operational status of oxidizers; calibration of temperature devices kept; inspections of oxidizers (annual) and heat exchangers (18 months) and records kept of annual/maintenance inspections; records kept of bypass events.

North and south prime oxidizer temperatures registered 1315°F and 1319°F when viewed during the inspection. Examples of daily prime oven oxidizer temperature records for 7/20/2017 and a monthly summary of the oxidizer's operational status for 7/2017 were requested during the inspection. The records were provided via email as follow-up items. See Appendix E.1. No deviations are reported for either oven oxidizer in the selected month. Both the north and south prime ovens were in operation on 7/20/2017. Prime oven oxidizer temperature records are given in 10-minute intervals and demonstrate the 1300°F minimum was met during production hours. On 7/20/2017, the most frequently recorded temperature of the north prime oxidizer was 1319 °F and for the south prime oxidizer was 1321°F. Annual inspections of the incinerators associated with both prime ovens were conducted by GMDH on 12/12/2016 with no issues noted on the inspection sheet. Calibrations of the probes were last performed on 12/13/2016 and both were found to measure within at least 4°F (which is within the tolerance and represents about 0.3% of 1300°F). In the semiannual deviation reports for period 1/1/2017 to 6/30/2017 GMDH reported a deviation of SC VI.16. GMDH did not perform the heat exchanger visual inspection within the minimum required 18-month period. GMDH reported a two-month delay from 4/22 to 6/30. A multiple layer system was created to ensure visual inspections are conducted every 18-month. Inspections were conducted on the primer surfacer incinerators and heat exchangers visual internal inspection from 6/24/2017 through 6/29/2017. The results were acceptable as noted on the copy of the "Prime and Topcoat Oven Incinerator - 18-Month Inspection Report" dated 7/19/2017, submitted to GMDH from a contractor company. During the inspection of 9/19/2017 GMDH indicated that bypass lines have not been used during the evaluated period. See App. E.2. Per previous inspection reports, this has been the case since 10/1/2011. Incinerators are designed to achieve the 0.57 second retention time; please see 9/26/2007 submittal where the residence times are calculated at 0.94 seconds and 0.88 seconds for the north prime and south prime, respectively. AQD did not request residence times calculations during the inspection of 9/19/2017.

V.1 through 3, VI.2.c through e, VI.10 – Compliance – Tests for transfer efficiency, oven loading rates, and oxidizer destruction efficiency within 180 days of permit issuance if not conducted in the last five years; records of tests maintained; description of paint system maintained with a record of the changes made and annual reviews required to determine if the performance tests remain representative of current operations.

On the day of the inspection AQD requested records to verify the most recent performance tests results on the prime lines (Solids Transfer efficiency-TE, Oxidizer Destruction Efficiency-DE and Oven Solvent Loading test - OSL). Records were provided by GM via email on 9/20/2017 and are attached in App. F. A TE test on the prime lines was conducted in October 2016. GM indicated that the values used in the protocol calculations are derived from the results of the test conducted in Oct. 2016 (See App. F). The last DE test was conducted in April 2015 and the last OSL test was in September 2015. The results of the test are reported in App. F. According to GM the values utilized in VOC calculations and in the annual reviews are derived from those results.

V.4 – Compliance – VOC content to be determined according to EPA protocol – The VOC content of the coatings is determined by the coating manufacturers and it is reported on the MSDS. The information is included in the semiannual VOC reports submitted to AQD.

VII.4, IX.2 and 3 – Compliance – CAM compliance; semiannual reporting of exceedances and excursions – 40 CFR 64 requirements are covered by the monitoring conditions in the emission unit. CAM semiannual reports for

Sections 1 and 2 were received and reviewed by AQD. Please refer to MACES activity report M419941681 for the review comments of the semiannual Deviation/CAM reports for period 7/1/2016 through 12/31/2016 which were received/postmarked by AQD on 3/15/2017. Report number M419941680 covers the review of the Deviation/CAM reports received on 7/28/2017 for the reporting period 1/1/2017 through 6/30/2017.

For the 12-month evaluated period from July 1, 2016 to June 30, 2017 GMDH reported a total of 12 deviations associated with the assembly plant operations (Section 1). Four (4) of the deviations were related to depressed temperatures (below 1300 F) within the thermal oxidizer associated with the prime ovens. However, none of the short-term oven malfunctions, with durations ranging from 10 to 29 minutes resulted in VOC emission exceedances and therefore, had no impact on the compliance status of the source in relation to the emission limits. There were no periods of monitor downtime reported.

Each of the events at the oven incinerators does not represent a violation of 40 CFR 64 because each excursion was halted and compliant conditions restored in a timely fashion.

Currently, GMDH achieves compliance with each VOC mass emissions limitation and each performance based VOC content limitation without the need to apply reductions provided by the oven incinerators. This is demonstrated through a review of the VOC data submitted semiannually by GMDH for the paint shop operations (i.e. the electrocoat, the primer surfacer, and the topcoat coating lines).

VIII.1 through 13 – Compliance – Primer surfacer/topcoat booth stack to vent unobstructed vertically at a height not less than 147 feet above ground and with no maximum diameter; each of four oven stacks (two primary stacks and two bypass stacks) and eight wet sand oven stacks to vent unobstructed vertically at a height not less than 53 feet above ground and with no maximum diameter – These stacks were viewed from ground level during the inspection of 9/19/2017 and judged in compliance with these requirements, though measurements were not performed. It is noted that the wet sand operations have not been used for a number of years. According to GMDH during an earlier inspection, “wet sand” refers to manual sanding, conducted with water, to remove defects in the vehicle body and the ovens installed to dry the vehicles.

IX.1 – Compliance – Primer surfacer must meet the requirements of NSPS MM – Please see section below on NSPS MM. SC I.4 is based on the NSPS and semiannual reports have been received to demonstrate compliance with the emission limit.

MI-ROP-M4199-2010, EUTOPCOATSYSTEM

The AQD evaluation of compliance with the emission limits for EUTOPCOATSYSTEM cited under the ROP special conditions SC. I. 1 to I.6 is summarized in the last column of the table below. The analysis is based on the review of the emissions records provided by GM for the specific periods cited in the table. See Appendix C.

Pollutant	Limit	Time Period/ Operating Scenario	Reported Emission Rate
1. PM	11.3 pph	Averaged over the operating hours in a calendar month,	1.76 pph - Highest value reported on Jun 2017 – Evaluated period from: 8/2016 through 7/2017 - App. C.3
2. PM	26.6 tpy	As determined at the end of each calendar year	2.58 tpy - 12-month total PM emitted from 8/2016 to 7/ 2017 See App. C.3
3. VOC	367 pph	Averaged over the operating hours in a calendar month (LAER)	99.66 pph - Highest reported on Jun 2017. Evaluated period from: 8/2016 through 7/2017. See App. C.4
4. VOC	1.47 kilograms per liter of applied coating solids	Calendar month volume weighted average (NSPS)	0.86 KGS /LSA - Highest reported on 7&10/2016 and on 2/2017 (evaluated period: 7/16 to 6/17) – see report M419941676 in App. C.5
5. VOC	14.9 pounds per gallon of applied coating solids	Calendar day volume weighted average as determined by the procedure specified in R 336.1610(6)(b)	6.52 lbs/GSA - Highest controlled (2/2/2017) For evaluated period: 7/16 to 6/17 -See App. C.5
6. VOC	796 tpy	As determined on a 12-month rolling total at the end of each calendar month (LAER)	140.25 tpy – end of 7/2017 Evaluated period; 8/2016 to 7/2017 – See App. C.4

I.1 and 2, VI.11 and 12 – Compliance – PM emission rates in pph and in tpy are limited to the values showed in the table above for the operating scenarios. Record to be maintained.

PM records for the period 8/2016 through 7/2017 were provided on the day of the inspection on 9/19/2017. During this period, the maximum monthly emission rate and the total PM emissions for the 12-month period were below the permit limits. Although the annual emission limit is only to be applied at the end of each calendar year, the 12-month total indicates the annual calendar year PM emissions are likely far below the annual PM emission limit.

I.3 through 6, VI.1.a through f, VI.2.a and b – Compliance – VOC emissions are limited to the values showed on the table above for the operating scenario. Records to be maintained.

VOC emission records for the period 8/2016 through 7/2017 were provided by GMDH as part of the inspection. Based on this data, during the evaluated period the maximum monthly VOC emission rate in pounds per hour in a calendar month and the 12-month rolling total at the of end of July 2017 were below the (LAER) ROP limits. See summary table above and records in Appendix C.4.

Monthly coating usage, coating composition, vehicle data, and VOC emissions are reported for the topcoat system in the semiannual VOC reports submitted by GMDH. The semiannual reports covering the period 7/2016 through 6/2017 were evaluated. During this period AQD received two NSPS MM and two VOC Protocol reports on the following dates: 2/1/2017 and 7/28/2017. GMDH does not account for oven abatement in the NSPS emissions calculations and reports a maximum of 0.86 kilograms per liter of applied coating solids (see dates above). Oven abatement is utilized for the Auto Protocol calculations and GMDH reports a maximum of 6.52 pounds per gallon of applied coating solids (2/2/2017); without oven abatement, the maximum reported emissions remain compliant at 9.35 pounds per gallon of coating of applied coating solids (2/2/2017). Please see report M419941676.

III.1, VI.9 – Compliance – Topcoat spray booths shall not be operated unless the downdraft waterwash system is installed and operating properly; daily visual inspections – The waterwash system was not observed during the 9/19/2017 inspection because of the necessity to wear a respirator in the topcoat area. Waterwash inspection logs for the topcoat booth for the month of July 2017 were collected on the day of the inspection. Records show that visual inspections are conducted daily and no issues were noted on the inspection logs. See App. D.2

III.2, IV.1, VI.3 through 8, 13 and 14 – In Compliance – Topcoat booths shall not be operated unless the associated oven incinerators are installed and operating properly, including maintaining either a minimum 1300°F oven temperature or a 1300°F average over three hours in each incinerator, and maintaining a minimum retention time of 0.5 seconds in each incinerator; temperature measuring device installed, temperature recorded at least once every 15 minutes, and device accurate to either 0.75% of temperature or within 2.5°C; monthly summary of thermal oxidizer data and operational status of oxidizers; calibration of temperature devices kept; inspections of oxidizers (annual) and heat exchangers (18 months) and records kept of annual/maintenance inspections; records kept of bypass events.

Topcoat oxidizer temperatures were above 1300°F when viewed during the inspection and were generally around 1320°F. Topcoat #1 was not in use. Examples of daily topcoat ovens oxidizer temperature records for 7/20/2017 and a monthly summary of the operational status of the topcoat ovens oxidizers for 7/2017 were requested during the inspection of 9/19/2017. The records were provided via email as follow-up items. See Appendix E.1. No deviations are reported for any of the mod-oven oxidizer in July 2017. All topcoat lines, #1 through #7 were in operation on 7/20/2017 (topcoat #8 has not been in use for several years). Topcoat oven oxidizer temperature records are given in 10-minute intervals and demonstrate the 1300°F minimum was met during production hours. Oxidizers generally read near 1320°F, except for topcoat #7 which read values a little higher than 1320°F. Annual inspections (through sight glass) of the incinerators associated with the topcoat ovens were conducted by GMDH on 12/12/2016. Topcoat oven #6, was down for routine maintenance and was not inspected. No issues were found for the incinerators serving topcoat ovens # 4, #5 and #7. However, the annual inspection sheets noted some problems with the burners and other internal conditions for topcoat ovens # 1, # 2, # 3). The repairs were scheduled for year 2017. Records of services (start-up, calibration and testing of new burners) were provided for all three incinerators. See Appendix E.2.

Except for topcoat oven #6, which was out of service for routine maintenance, calibrations of the temperature monitoring devices were last performed on 12/13/2016 and all were found to measure within at least 2°F (which represents about 0.15% of 1300°F).

In the semiannual deviation reports for period 1/1/2017 to 6/30/2017 GMDH reported a deviation of SC VI.16. GMDH did not perform the heat exchanger visual inspection within the minimum required 18-month period. GMDH reported a two-month delay from 4/22 to 6/30. Inspections of the topcoat incinerators and heat exchangers visual internal inspections were conducted from 6/24/2017 through 6/29/2017 for topcoat ovens # 2 to #7; topcoat oven #1 was inspected on 7/19/2017 after being repaired. The results of the inspections were acceptable as noted on

the copy of the report "Prime and Topcoat Oven Incinerator - 18-Month Inspection Report" dated 7/19/2017, submitted to GMDH from a contractor company.

Incinerators are designed to achieve the 0.5 second retention time; please see 9/26/2007 submittal where the residence times, in seconds, are calculated at 1.05, 0.98, 1.07, 1.18, 1.11, 0.82, 0.86, and 0.84 for oven incinerators #1 through #8, respectively. AQD did not request residence times calculations during the inspection of 9/19/2017. GMDH reported that bypass lines have not been used for several years (beginning 10/1/2011).

III.3, V.5 – Compliance – Purge capture system for solvent-borne materials installed and operating to provide 85% VOC capture; test for purge capture within 180 days of permit issuance if not conducted in the last five years – According to records in file purge capture system tests were last conducted on 8/3/2010 through 8/4/2010. The results showed that each robot tested measured 100% recovery of the purged solvent-borne material, in compliance with the 85% minimum required at Condition III.3.

V.1 through 3, VI.2.c through e, VI.10 – Compliance – Tests for transfer efficiency, oven loading rates, and oxidizer destruction efficiency within 180 days of permit issuance if not conducted in the last five years; records of tests maintained; description of paint system maintained with a record of changes made and annual reviews required to determine if the performance tests remain representative of current operations.

On the day of the inspection AQD requested records to verify the most recent performance tests results on the Topcoat System (Solids Transfer efficiency-TE, Oxidizer Destruction Efficiency-DE and Oven Solvent Loading test - OSL). Records were provided by GM via email on 9/20/2017 and are attached in App. F.

The last TE test on the topcoat lines was conducted from Oct. 3 to Oct. 7 of 2016 (for results please see Appendix F). In the submittal of the records GM stated that the values used in the protocol calculations are derived from the results of the test conducted in Oct. 2016. The last DE test was conducted in December 2013 and the last OSL test was in September 2015. The results of the test are reported in App. F. According to GM the values utilized in VOC calculations and in the annual reviews are derived from those results.

V.4 – Compliance – VOC content to be determined according to EPA protocol – VOC content of the coatings are given in the semiannual VOC reports and MSDSs were provided in the 9/25/2013. MSDS updates will be requested in future inspections.

VII.4, IX.1 and 2 – In Compliance – CAM compliance; semiannual reporting of exceedances and excursions 40 CFR 64 requirements are covered by the monitoring conditions in the emission unit. CAM semiannual reports for Sections 1 and 2 were received by AQD. The Semiannual Deviation/CAM reports covering the period 7/1/2016 through 12/31/2016 (postmarked on 3/15/2017) was reviewed - see review comments in report M419941681. The review details for the Semiannual Deviation/CAM reports covering period 1/1/2017 through 6/30/2017, postmarked 7/28/2017, are included in report M419941680.

For the 12-month evaluated period from July 1, 2016 to June 30, 2017 GMDH reported a total of 12 deviations associated with the assembly plant operations (Section 1). Six (6) of the deviations were related to depressed temperatures (below 1300 F) within the thermal oxidizer associated with the topcoat ovens. However, none of the short-term oven malfunctions, with durations ranging from 13 to 62 minutes caused VOC emission exceedances and therefore, had no impact on the compliance status of the source in relation to the emission limits. There were no periods of monitor downtime reported.

Each of the events at the oven incinerators does not represent a violation of 40 CFR 64 because each excursion was halted and compliant conditions restored in a timely fashion.

Currently, GMDH achieves compliance with each VOC mass emissions limitation and each performance based VOC content limitation without the need to apply reductions provided by the oven incinerators. This is demonstrated through a review of the VOC data submitted semiannually by GMDH for the paint shop operations (i.e. the electrocoat, the primer surfacer, and the topcoat coating lines).

VIII.1 through 17 – Compliance – Primer surfacer/topcoat booth stack to vent unobstructed vertically at a height not less than 147 feet above ground and with no minimum diameter; each of sixteen oven stacks (eight primary stacks and eight bypass stacks) to vent unobstructed vertically at a height not less than 53 feet above ground and with no maximum diameter – These stacks were viewed from ground level during the inspection of 9/19/2017 and judged in compliance with these requirements, though measurements were not performed.

NSPS MM for Automobile and Light-Duty Truck Coating Operations

The federal New Source Performance Standards (NSPS) at 40 CFR 60, Subparts A and MM regulates volatile organic compound emissions from automobile and light-duty truck surface coating operations installed after 10/5/1979. The electrocoat, primer surfacer, and topcoat lines at GMDH were all installed in the early 1980s and are subject to this subpart.

60.392(a)(1)(i), (b), (c) – Compliance – The electrodeposition prime coat (electrocoat) must meet a VOC emission rate equal to or less than 0.17 kilogram per liter of applied coating solids; the guidecoat (primer surfacer) must meet a VOC emission rate equal to or less than 1.40 kilogram per liter (equivalent to 11.7 pounds per gallon) of applied coating solids; the topcoat must meet a VOC emission rate equal to or less than 1.47 kilogram per liter (equivalent to 12.3 pounds per gallon) of applied coating solids.

60.303(b), 60.395(a)(1), 60.395(b) – Compliance – An initial performance test must be conducted by calculating the monthly volume weighted average mass of VOC emitted per volume of applied coating solids (60.303(b)) and this test shall be repeated monthly; these results shall be reported (60.395(a)(1)) initially; any exceedances during subsequent tests shall be reported (60.395(b)). Though incinerators control the oven exhaust from the electrocoat, primer surfacer, and topcoat coating operations, GMDH does not apply any credit for VOC reduction within these affected facilities when calculating for compliance with the NSPS MM standards, therefore, the performance of the incinerators does not fall under the regulatory scope of the NSPS at this time.

The emission limits have been incorporated into the ROP at SC I.2 of EUELPOSYSTEM, SC I.4 of EUPRIMERSURFACER, and SC I.4 of EUTOPCOATSYSTEM. The monthly calculations and records necessary to determine continued compliance with the emissions limits are also incorporated into the ROP. Semiannual NSPS MM reports for the period 7/1/2016 to 12/31/2016 were received on 2/1/2017, and for the period 1/1/2017 to 6/30/2017 were received on 7/28/2017. Please see review comments in report M419941676.

MI-ROP-M4199-2010, EUDEADNER

I.1 through 5, III.1, V.1, VI.1 through 5, VII.1 through 3, VIII.1 and 2 – Compliance – The deadener booth last operated in 5/2011 and is no longer in use. According to GMDH, during the previous inspection in 2011, the design of the Volt rendered the deadener booth obsolete. In addition, in recent years non-VOC materials were used as the deadener and no VOCs have been reported emitted from this emission unit. While unused this emission unit does not release emissions to the ambient air and is therefore considered to be in compliance with all applicable requirements.

MI-ROP-M4199-2010, EUFINALREPAIR

I.1 through 3, VI.1 through 4 – Compliance – VOC emissions limited to: 3.1 pounds per hour averaged over the operating hours in a calendar month (LAER); 4.8 pounds per gallon of coating, minus water, as applied, on a calendar day volume weighted average (Rule 610); 6.8 tons per 12-month rolling time period (LAER). Records to be maintained; monthly records permitted unless an individual coating exceeds the 4.8 pounds per gallon of coating, minus water, as applied, and then daily records of the coating are required.

Final repair records for the period 8/2016 through 7/2017 were provided during the inspection and are included in Appendix G. During that period, a total of 392.1 gallons of coating were used with 1368.2 pounds, or 0.68 tons, of VOCs emitted over 4,724 production hours. The highest monthly emission rate is reported for 5/2017, when 88 pounds VOC were emitted over 183 hours for a monthly average of 0.48 pounds per hour. The highest average rate of VOC emissions in lbs VOC per gal was 3.63 lbs VOC /gal, reported on 3/2017

SC VI.3 of EUFINALREPAIR requires the facility to monitor and record the VOC content for all coatings utilized in the final repair operations to ensure compliance with the 4.8 pounds VOC per gallon minus water, on a daily average, performance measure stipulated within Rule 610 and SC I.2. If all coatings utilized in the month meet the standard individually then only a monthly average need be reported, as any combination of coatings will calculate to a daily average less than the standard. If not, then daily averaging must be recorded on those days when coatings with an individual VOC content in excess of 4.8 pounds VOC per gallon minus water are utilized, in order to ensure that the combination of coatings used in the day average to less than the standard. GMDH reports monthly records were maintained for all coatings, and daily records are maintained on those days when the higher VOC content coatings were used.

III.1, VI.5 – Compliance – Each final repair booth not to be operated unless the associated dry filters are installed and operating properly – On 9/19/2017, GMDH submitted records of booth inspections from 1/2017 to 9/2017, which occur every other week; records show no filter replacement in that period.

V.1 – Compliance – VOC content determined by EPA Method 24 with formulation data as an alternative; records maintained – The VOC content of the final repair coatings are included in the records submitted by GMDH - in App. G. The information is obtained from the MSDS for each coating. The MSDSs provide VOC content information in four ways: formula VOC with water; formula VOC without water; EPA Method 24 with water; EPA Method 24 without water. GMDH uses the EPA Method 24 data without water for the final repair daily average.

MI-ROP-M4199-2010, EUSEALERADH

I.1 through 7, VI.1 through 4 – Compliance – VOC emissions limited to: 60.8 pounds per hour averaged over the operating hours in a calendar month (LAER); either 4.8, 4.3, 3.5, or 3.0 pounds per gallon of coating, minus water, as applied, on a calendar day volume weighted average depending on the coating type (Rule 621); 137 tons per 12-month rolling time period (LAER). Records to be maintained.

Sealers and adhesives records for the period 8/2016 through 7/2017 were provided by GMDH on the day of the inspection (See Appendix H). A total of 399,465 gallons of coating were used with 69,928.4 pounds, or 34.96 tons, of VOCs emitted over 3,021 production hours. The highest monthly emission rate is reported for 1/2017, when 4,534.7 pounds VOC were emitted over 151 hours for a monthly average of 29.95 pounds per hour. The highest monthly average pounds VOC per gallon is reported for 8/2016, at 0.19 pounds per gallon. The VOC and water content of the sealers are so low that the water content does not significantly alter the VOC content on a minus water basis. According to the records in Appendix H, most sealers have a VOC content of 0.300 pounds per gallon or below. The one with the highest VOC content, identified as Versilok 254, has a VOC content of 0.570 pounds per gallon. Therefore, when we compare with the emission limit of 3 lbs. VOC /gal minus water (Rule 621 (1)(g) category of "other coatings") we can state that the daily average of all coating categories are less than the Rule 621 emission limits on each day of operation.

V.1 – Compliance – VOC content determined by EPA Method 24 with formulation data as an alternative; records maintained – The VOC content of the sealers and adhesives is included within the records provided by GMDH during the inspections.

MI-ROP-M4199-2010, EUBOOTHCLEAN

I.1, V.1, VI.1 through 3 – Compliance – VOC emissions limited to 350 tons per 12-month rolling time period (LAER). Records to be maintained – Per records provided during the inspection for period 8/2016 through 7/2017, the 12-month rolling emission total as of July 2017 was 6.99 tons. -See Appendix I.

MI-ROP-M4199-2010, EUPURGE

I.1, V.1, VI.1 through 3 – Compliance – VOC emissions limited to 650 tons per 12-month rolling time period (LAER). Records to be maintained – Purge solvent records for the period 8/2016 through 7/2017 are included in Appendix J. VOC emissions total 298,627.89 pounds, or 149.31 tons, in the 12-month period.

MI-ROP-M4199-2010, EUMISCSOLV

I.1, V.1, VI.1 through 3 – Compliance – VOC emissions limited to 307 tons per 12-month rolling time period (LAER). Records to be maintained – Miscellaneous solvent emissions records for the period 8/2017 through 7/2017 are included in Appendix K. The records show the VOC content in lbs per gal per each individual solvent, as well as the monthly quantities of coating and material used. The 12-month rolling emission total as of July 2017 was 7.51 tons or 15,013.78 pounds.

MI-ROP-M4199-2010, EU-Acoustical/Structural Foam

I.1 and 2, III.1, V.1, VI.1 and 2, VII.1 through 3, VIII.1 – Compliance – The acoustical/structural foam application has not been observed in operation since the 2005 inspection and according to the 9/27/2011 and 9/25/2013 submittals has not been operated since 8/2006. While unused this emission unit does not release emissions to the ambient air and is therefore considered to be in compliance with all applicable requirements.

MI-ROP-M4199-2010, FG-MACT

The federal National Emissions Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR 63, Subparts A and IIII (MACT IIII) regulates hazardous air pollutants (HAP) emissions from the surface coating of automobiles and light-duty trucks. GMDH is a major source of HAPs. At 63.3082(g), GMDH is an existing affected source under MACT IIII for auto and light truck surface coating with an initial compliance date of 4/26/2007 (63.3083(b)). The Notice of Compliance Status (NOCS) was received on 6/27/2007. Semiannual compliance reports required at 63.3120(a) are to cover the periods 1/1 through 6/30 and 7/1 through 12/31. Reports are due (postmarked) by 7/31 and 1/31, respectively. However, according to 63.3120 (a)(1) (iv), since GMDH is a Title V – ROP source, the reports may be submitted following the schedule established in the ROP for the semiannual reports (i.e. postmarked by 9/15 for 1/1 through 6/30; and 3/15 for 7/1 through 12/31)

In the NOCS GMDH stated that the compliance options at 63.3091(b), 63.3092, 63.3090(c), and 63.3090(d) have been chosen. In other words, the ELPO or electrocoat is separated from the other materials and would be evaluated on its own. The control devices installed at the electrocoat, primer surfacer, and topcoat operations are not employed to achieve compliance with the HAP emissions limitations, therefore, the testing and monitoring of control device performance is not required for purposes of this regulation.

I.2, I.5 and I.5a – Compliance – Organic HAP emissions from combined primer surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations plus all coatings and thinners must meet 0.132 kilograms per liter (1.10 pounds per gallon) of coating solids deposited on a calendar month basis; under 63.3092(a) each material in the electrocoat must contain no more than 1.0 percent by weight of any organic HAP and 0.10 percent by weight of any organic HAP which is an OSHA carcinogen per 29 CFR 1910.1200(d)(4).

AQD received two semiannual MACT reports covering the period 7/1/2016 through 12/31/2016 (postmarked 3/15/2017) and 1/1/2017 to 6/30/2017 (postmarked 7/28/2017). In the semiannual reports GMDH did not report the pounds of HAP generated, the HAP emissions, or the gallons of solids applied. However, GMDH has asserted compliance with 63.3091(a) which is the combined emissions from ELPO, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations (adhesive and sealer materials that are not part of the glass bonding system are excluded from the grouping). AQD noticed that this option [(63.3091(a))] is different from what GMDH had chosen in the NOC submittal of 2007. The HAP limit under (63.3091(a) is 0.072 kg/liter [0.6 lbs. / gallon of solid applied (GSA)]

MACT HAP Report Summary for period 8/2016 to 7/2017 was handed-out during the inspection of 9/19/2017 – See Appendix L. According to the records, the lbs. HAP per GSA for each month was either 0.06 or 0.07; which is below the limit cited above. Electrocoat MSDSs updates were not provided during this inspection. The most recent MSDSs in our files were collected as part of the 2013 routine inspection. In the next routine inspection, AQD will be requesting MSDS updates for the electrocoat materials. AQD will also ask GMDH to include the MACT HAP reports as part of the MACT III semiannual reports.

I.3 – Compliance – HAP emissions from all sealer and adhesive materials not components of glass bonding systems to no more than 0.010 kilograms HAP per kilogram (pound per pound) sealer/adhesive material on a calendar month basis.

In the semiannual reports GMDH did not specify the emissions of HAP (pounds per pound sealer/adhesive) for each month operated from July 2016 through June 2017; however, they certified compliance with this condition. Record for period 8/2016 to 7/2017 were handed-out during the inspection of 9/19/2017 – See Appendix L. GMDH reports emissions of 0.000 pounds HAP per pound sealer/adhesive for each month operated from 8/2016 through 7/2017. Information about the HAP content in the coating and the amount of sealers and adhesives used during the evaluated period was not provided in the records. AQD will request that type of information in future inspections.

I.4 – Compliance – HAP emissions from all deadener materials to no more than 0.010 kilograms HAP per kilogram (pound per pound) deadener material on a calendar month basis – In the semiannual reports, GMDH reports deadener operations were not conducted in this period. From an information submittal of 9/27/2011, GMDH reports the deadener booth was last used in 5/2011. An acoustical/structural foam operation installed in 2004 to improve the crash worthiness of side impacts was discontinued in 8/2006.

III.1 – Compliance – Work practice plan to be developed and implemented – During the inspection of 9/19/2017 GMDH provided a copy of the “Work Plan for the Minimization of organic HAP emissions”, last revised on 7/25/2017. The Work Plan, as written, addresses the sub-conditions of III.1 and the MACT as follows:

III.1.a through e – Compliance – HAP containing coatings, thinners, cleaning materials, and waste materials to be stored in closed containers (63.3094(b)(1)); risk of HAP spills minimized (63.3094(b)(2)); HAP materials to be conveyed in closed containers or pipes (63.3094(b)(3)); mixing vessels with HAPs closed except when adding, removing, or mixing in materials (63.3094(b)(4)); HAP emissions minimized during cleaning operations (63.3094(b)(5)) – Addressed at II.A through E of the Work Plan, pages 1 through 3.

III.1.f.i through viii – Compliance – Minimize organic HAP emissions from the cleaning and purging of the following equipment subject to the HAP emissions standards (63.3094(c)(1)(i) through (viii)): vehicle body wipes, coating line purging, coating line flushing, cleaning of spray booths (grates, walls, equipment, and external areas), and additional housekeeping – Addressed at III.A through H of the Work Plan, pages 3 through 16. Prevalent in the MACT standards and referenced in the Work Plan is the use of “low-HAP or no HAP” solvents and cleaners, however, EPA declines to define this phrase for the purposes of MACT IIII (unlike MACT GGGG, for example, where a “low-HAP solvent option” is defined as a solvent where the volume fraction of each HAP comprises 1% or less by volume of the solvent). As such, MACT IIII provides no standard by which to judge, for example, GMDH’s use of a 6% by weight organic HAP PP5652 for the cleaning of the clearcoat booth robots (e.g. pg. 12 of the Work Plan). Therefore, AQD accepts GMDH’s use of the cleaners specified.

V.1 and 3, VI.1, 2, 4, and 5, VII.4 and 5 – Further information is needed to determine compliance – Determine HAP content of materials and conduct compliance demonstrations in accordance with 63.3150 through 63.3152 (adhesives, sealers, and deadeners) and 63.3170 through 63.3173 (primer surfacer, topcoat, glass bonding primer, and glass bonding adhesive with separate electrodeposition); records kept and reports submitted.

The Work Practice Plan provided by GMDH mentioned in Page 1, Section I. that the “MACT Work Practice Plan Appendix” identifies HAP containing materials subject to the work plan requirements. However, the Appendix was missing from the submittal of 9/19/2017. AQD has records of the previous submittal dated 5/29/2015. Calculations and HAP contents are also missing in the records collected on 9/19/2017.

IX.1 – Compliance – Facility to comply with all applicable requirements of MACT IIII – The relevant provisions are included in the flexible group FG-MACT.

MI-ROP-M4199-2010, FGFUELFILL

I.1, VI.1 through 3 – Compliance – VOC emissions limited to 12 tons per 12-month rolling time period (LAER); gasoline usage, gasoline VOC content, and the EPA TANKS program to be used to calculate emission rate; records maintained – In the 2016 MAERS, GMDH reports 482.58 pounds (0.24 tons) VOC emitted from EUFUELFILL and 10,522.88 (5.26 tons) from EUTANKS with a gasoline throughput of 438,710 gallons. The combined total (5.5 tons) is less than the 12 tons per year limit.

The VOC content of the gasoline used by GMDH to fuel the vehicles is not expected to vary significantly from a standard default VOC content utilized for the TANKS program.

IV.1 and 2, IX.1 and 2 – Compliance – Gasoline tanks of greater than 2,000 gallons equipped with a permanent submerged fill pipe and must meet requirements of either Rule 606 (existing) or Rule 703 (new).

Per R 336.1104(h), GMDH meets the definition of a dispensing facility: “a location where gasoline is transferred to a motor vehicle tank from a stationary vessel”. According to the 9/25/2013 submittal, each of the three gasoline tanks was installed in 1983 (and therefore “new” tanks) and have capacities of 20,000, 20,000, and 12,000 gallons, respectively. Therefore, under Rule 703(1) through (4) each storage tank shall be equipped with a permanently submerged fill pipe, a vapor balance system, a system to ensure a vapor-tight collection line is connected prior to gasoline loading, and a device to ensure the vapor-tight collection line closes on disconnection.

A schematic of the gasoline tanks is provided in the 11/4/2003 submittal. The schematic illustrates the submerged fill pipe and the vapor balance system. In the letter to the 11/4/2003 submittal, GMDH states “[t]he two connections are made with cam-lock fittings, and the valves are manually opened and closed to maintain vapors during the loading process”. No changes to the cited description were reported or observed during the inspection.

VI.4 and 5, IX.3 – Compliance – For each gasoline tank, records to be maintained on the tank’s identification, location, capacity, date of installation/modification, material contained, and vapor pressure – This information was collected during the inspection of 9/19/2017 and it is included in Appendix N. Since the NSPS Kb revisions of 7/23/1984, the requirement in SC VI.5 only applies to those tanks with a design capacity of 19,800 gallons and greater. Regardless, these gasoline tanks, installed in 1983, predate the 7/23/1984 applicability date of NSPS Kb (60.110b(a)). The tanks do not qualify for regulation under NSPS K or Ka because their capacities are less than 40,000 gallons (60.110 and 60.110a(a)).

VI.6 – Compliance – Notice to AQD to be given prior to the construction, reconstruction, or modification of any volatile organic liquid storage vessel greater than 19,800 gallons – No notices have been received since ROP issuance; AQD is unaware of any such tank that has been constructed, reconstructed, or modified without notice. All tanks currently in use at the tank farm were installed in 1983 (See Appendix N).

MI-ROP-M4199-2010, FGTANKS

III.1 and 2, IX.1 and 2 – Compliance – Gasoline tanks of greater than 2,000 gallons equipped with a permanent submerged fill pipe – The three gasoline tanks are covered under the FGFUELFILL and meet these same conditions in that flexible group.

IV.1.a through f – Compliance – Tanks within the flexible group shall meet either subparagraph (b), (c), (d), (e), (g), or (I) within the Rule 284 exemption. Exemption determinations were not asked during the inspection. According to the records provided on 9/19/2017, none of the tanks exceed 20,000 gallons and the vapor pressures listed are less than 1.5 psia. The diesel fuel tank is likely exempt under Rule 284(2)(d) for the storage of nos. 1 through 6 fuel oil. The tanks for the automatic transmission fluid, power steering fluid, and antifreeze are likely exempt under the Rule 284(2)(c).

VI.1 and 2, IX.3 – Compliance – For each tank, records to be maintained on the tank's identification, location, capacity, date of installation/modification, material contained, vapor pressure, and annual emissions – This information is provided in Appendix N and in the annual MAERS report; for 2016 MAERS, GMDH reported 5.5 tons VOC total emitted from FGFUELFILL and FGTANKS. Since the NSPS Kb revisions of 7/23/1984, the requirement in SC VI.2 only applies to those tanks with a design capacity of 19,800 gallons and greater. Regardless, all of the tanks in the tank farm were installed in 1983 and therefore predate the 7/23/1984 applicability date of NSPS Kb (60.110b(a)). The tanks do not qualify for regulation under NSPS K or Ka because their capacities are less than 40,000 gallons (60.110 and 60.110a(a)).

VI.3, IX.4 – Compliance – Notice to AQD to be given prior to the construction, reconstruction, or modification of any volatile organic liquid storage vessel greater than 19,800 gallons; a new emission unit may be installed provided it does not represent a minor or significant modification to the ROP – No notices have been received since ROP issuance; AQD is unaware of any such tank that has been constructed, reconstructed, or modified without notice. All tanks currently in use at the tank farm were installed in 1983 (See Appendix N).

MACT EEEE for Non-Gasoline Organic Liquid Distribution

The federal National Emissions Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR 63, Subparts A and EEEE (MACT EEEE) regulates hazardous air pollutants (HAP) emissions from the surface coating of automobiles and light-duty trucks. GMDH is a major source of HAPs. On 6/3/2004, the AQD received the Initial Notification from the facility. At that time, the facility believed the Final Rule would be revised to "not apply to end users of organic liquids such as automobile/light duty-truck assembly plants". AQD's records do not contain evidence that a Notification of Compliance Status (NOCS) was received.

Organic liquid storage tanks are regulated by the standard, where "organic liquid" is defined at 40 CFR 63.2406 as liquid mixture containing 5% by weight organic HAP (as listed in the subpart). Gasoline, distillate oils, hazardous waste, and wastewater are excluded from the definition. Therefore, MACT EEEE does not apply to GMDH's three gasoline storage tanks and diesel fuel storage tank. In the 9/27/2011 submittal, GMDH indicates that none of the tanks in the tank farm are subject to the MACT EEEE regulation.

MI-ROP-M4199-2010, FGCOLDCLEANERS

II.1 – Compliance – Less than 5% of any combination of methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, and chloroform – MSDSs were not requested for this inspection. Since ROP issuance, none of the cold cleaners at the facility have been found using chlorinated cleaning solvents in excess of 5%.

III.1 and 2, IV.1 through 5, VI.1 through 4 – Compliance – Cold cleaner operational requirements including draining parts, closing cover when not in use, posting operating procedures near the cleaner, and storing waste solvents in closed containers; cold cleaner operational requirements are based on the type of cleaner and the vapor pressure of the solvent; information on each cold cleaner to be maintained on file.

One cold cleaner near the final repair booths was observed during the 9/19/2017 inspection. The cover was observed to be closed and a sign posted near or on the cleaner with proper procedures (keep cover closed when not in use, etc.) and the cold cleaner was judged in compliance with SCs IV.3 and VI.3. I judged the air/vapor interface to be less than 10 square feet and therefore in compliance with SC IV.1.a. Information on cleaners currently installed at the plant was provided during the inspection, see Appendix O. GMDH lists four cold cleaners utilizing a cleaning solution with a vapor pressure greater than 0.3 psia: these cleaners must have mechanically assisted covers per SC IV.4; this will be confirmed during the next FCE period. GMDH lists two cold cleaners utilizing a cleaning solution with a vapor pressure greater than 0.6 psia: these cleaners comply with Rule 707(2) by maintaining the ratio of the freeboard height to the width of the cleaner in excess of 0.7 (SC IV.5.a). There are two cold cleaners located at the Paint Mix, identified as Paint Mix#3 and #4 that seem to have been installed in September 2016 but have not been used yet. AQD will confirm this information in the next FCE period.

IX.1 – Compliance – Additional cold cleaners may be installed without modifying the ROP provided the installation is exempt and does not represent a minor or significant modification to the ROP – According to the information provided during the inspection of 9/19/2017, four cold cleaners have been installed since the date of the last inspection (which was conducted on Sept. 9, 2015) and they are exempt under either Rule 281(h) or Rule 285(r) (iv). As of the date of this report, there are a total of fifteen (15) cold cleaners serving the various GMDH operations. See Appendix O.

MI-ROP-M4199-2010, FGRULE287(c)

I.1 through 3, VI.2 – Compliance – Not more than 2000 pounds VOC per month per emission unit, 10 tons per 12-month rolling time period per emission unit, and 30 tons per 12-month rolling time period for all emission units

combined; records kept – In the record provided on 9/19/2017 (Appendix P), the facility reports that a maintenance spray booth operates under this flexible group. Use is limited. For period 8/2016 through 7/2017, the highest monthly VOC emissions were reported in Aug. 2016 (60.42 pounds) and in July 2017 (59.45 pounds) –approx. 0.03 tons. The 12-month rolling total VOC emitted at the end of July 2017 was 0.21 tons.

II.1, VI.1.a – Compliance – Not more than 200 gallons per month, minus water, for each emission unit; records on usage to be maintained – According to the records in Appendix P the highest monthly usage was 27.50 gallons, reported for July 2017.

III.1, IV.1, VI.1.b – Undetermined – The paint spray booth shall have a particulate control system installed and operating properly; records to be maintained on filter replacements – The maintenance spray booth was not observed during the 9/19/2017 inspection and information concerning the particulate control system was not asked of the facility during this inspection period.

IX.1 – Compliance – Additional Rule 287(c) emission units may be installed without modifying the ROP provided the installation is exempt and does not represent a minor or significant modification to the ROP – The maintenance spray booth was installed prior to the renewal date of the ROP.

MI-ROP-M4199-2010, FGRULE290

During the inspection of 9/19/2017 GMDH reported that there is an emission unit operating under Rule 290. Records were provided and they are included in Appendix Q. A follow-up email received by AQD on 9/25/2017 describes the type of operation. In the email, GMDH confirmed that the operation observed in the sealers area during the inspection of 9/19/2017 identified as "Antichip Sealer Application" is exempt from PTI under the provisions of Rule 290. GMDH indicated that the material used has more than 94% solid content by weight and is similar in properties to the paint shop sealers. GMDH confirmed that this operation is not conducted in the Primer Surfacer or Basecoat booth. The records in Appendix Q show total emissions of Non-Carcinogenic VOC equal to 63.90 pounds per month (uncontrolled).

MI-ROP-M4199-2010 - SECTION 2 EUBOILER1 – PTI 91-15

Steam for the assembly plant operations was formerly provided by four spreader stoker coal-fired boilers; boiler #1 to #4, located at the northern end of the plant at the boiler-house.

In compliance with SC. VII.1 of PTI 91-15, GMDH provided written notification of the removal of the coal-firing capability for boiler #1 and permanent shutdown of boilers #2, #3 and #4 in a letter dated December 11, 2015 (please refer to Appendix R).

During the facility inspection of 9/19/2017 AQD verified the decommissioning required under PTI 91-15 and confirmed the completion of the shut-down activities described in the cited letter. As a result, the following units, EUBOILER2, EUBOILER3, EUBOILER4, EUASHCONVEYOR, EUASHSILO and EUHOPPER, under MI-ROP-M4199-2010 - SECTION 2, are no longer active emission sources. Under PTI 91-15, EUBOILER1 is only capable of operating using natural gas as fuel source. Therefore, compliance evaluation is being reduced to the applicable requirements and special conditions cited in PTI 91-15 for EUBOILER1.

After the permanent shutdown of boilers #2, #3, and #4 in December of 2015; steam is provided to GMDH by a private supplier and Boiler #1 is used in rare occasions to supplement steam to the plant. EUBOILER1 is natural gas-fired boiler with a maximum heat input capacity of 84 MMBtu/hr.

I.1, and 2, VI.3 and VI.4 – In Compliance – NOx emission rates limited to 0.2 lb/MMBtu and demonstrated by testing, testing requirements within 180 days after EUBOILER becomes effective to verify NOx emission rates per SC. I.1; 12-month rolling total NOx mass emission is limited to 73.58 tpy, records to be maintained; to demonstrate compliance with emission limits.

In compliance with PTI 91-15, SC V.1 - Testing /Sampling, GMDH conducted testing of NOx for EUBOILER1 on November 24, 2015. The test protocol was approved by AQD -TPU staff on November 9, 2015. The results of the 11/24/2015 test showed NOx emission rates ranging from 0.065 lbs./MMBtu to 0.069 lbs./MMBtu in three test runs; all below the permit limits (0.2 lbs./MMBtu) cited in SC I.1.

According to the 2016 MAERS submittal, and records collected during the inspection of 09/19/2017, the 12-month total tons NOx emissions for year 2016 was 0.02 pounds, or 0.00 tpy, which is below the permit limit (SC I.2)

II.1, IV.1 and 2, VI.1 and 2 – Compliance – Only natural gas burning in EUBOILER1; heat input for boiler #1 not to exceed 84 million Btu per year; records of natural gas usage to be maintained. -

According to the records in Appendix S, boiler # 1 had a limited use in 2016 and the only fuel was natural gas. The boiler was used only 7 days (168 hours) and it combusted 0.23 million cubic feet of natural gas in the year; at

approximately 1,000 Btu per cubic foot of natural gas, the heat input equates to about 1.37 million Btu/hour in the 12-month period. Monthly records of natural gas usage for 2016 are also shown in Appendix S. The maximum usage (0.06 MMCF) was reported for 5/2016.

VII. – In Compliance - GMDH shall submit a notification stating the date the EUBOILER permanently ceased burning coal – Refer to the first paragraph of section "EUBOILER1 - PTI 91-15"

VIII.1 – Compliance – EUBOILER1 stack shall emit vertically upwards at a height no less than 250 feet above ground and with a maximum diameter of 120 inches. This stack was observed during the inspection of 9/19/2017 and judged in compliance with these requirements, though measurements were not performed.

IX. MACT DDDDD for Steam Boilers and Process Heaters -Compliance

The federal National Emissions Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR 63, Subparts A and DDDDD (MACT DDDDD) regulates hazardous air pollutants (HAP) emissions from boilers and process heaters installed at major sources of HAPs. GMDH is a major source of HAPs.

On 1/31/2013, the EPA issued revised standards within MACT DDDDD (78 FR 7138) and on 5/30/2013 the AQD received GMDH's Initial Notification for the revised standard. Per 40 CFR 63.7545(b), the Initial Notification must be submitted within 120 days from 1/31/2013, or by 5/31/2013; therefore, the AQD considers the submittal to be timely.

MACT DDDDD applies to industrial boilers, commercial boilers, institutional boilers, and process heaters located at Section 112 major sources (40 CFR 63.7490(a) through (e)). An "industrial boiler" is defined at 40 CFR 63.7575 as "a boiler used in manufacturing, processing, mining, and refining or any other industry to provide steam, hot water, and/or electricity." Boiler # 1 produces steam for use at the plant and therefore meets the definition of an "industrial boiler" under the standard. Construction of boiler #1 commenced prior to 6/4/2010 and therefore it is considered an "existing" industrial boiler (40 CFR 63.7490(d)). Per the Initial Notification, each boiler was a coal-fired spreader stoker design and therefore they all were within the subcategory stoker designed to burn coal/solid fossil fuel" at 40 CFR 63.7499(b). However, since boilers #2, #3 and #4 have been decommissioned and boiler # 1 has only capability of combusting natural gas. Compliance with MACT DDDDD is required not later than 1/31/2016 for existing boilers and process heaters (40 CFR 63.7495(b)). However, since boiler #1 has been modified and it is only used in a limited basis (i.e. steam is produced outside of the GMDH facility), AQD needs to revisit its classification under MACT DDDDD and the applicable requirements. This will be done as part of the ROP renewal which is currently under review

MI-ROP-M4199-2010, FGTEMPBOILERS Conditions

RGTEMPBOILERS - During the inspection GMDH reported that the facility did not utilize temporary boilers in 2016. The 2016 MAER submittal indicated that they were not operated and reported "zero" throughput. During the visit of 9/19/2017 there were no temporary boilers on-site.

OTHER EMISSION UNITS - Emergency Generators

GMDH has several emergency generators at various location within the assembly plant. According to the 2016 MAERS submittal, there are a total of nine emergency generators (EGEN) identified as follows: EU-EGEN-ENG1 to ENG6 - These are a group o six (6) emergency stationary diesel-fueled internal combustion engines; EU-EGEN-ADMNFP and EU-EGEN-PWRFP - These are emergency fire-pump generators also operated with diesel fuel, one is serving the administration building and the other one serving the powerhouse; EU-EGEN-DATA - This is a spark ignition (SI) emergency generator that operates with natural gas.

Only the emergency generator located in the powerhouse building was inspected during the site visit of 9/19/2017. However, during the current ROP renewal cycle, GMDH requested the inclusion of the flexible group FG-EMERGENCYRYCE. In their renewal application GMDH indicated that the listed emergency generators are exempt from permitting under Part 201 (i.e. exempt under Rule 285(2)(g)) but they are subject to the NESHAP for stationary RICE, 40 CFR Part 63, Subpart ZZZZ. Further investigation into the compliance status of the emergency generators will be done during the next FCE period.

Conclusion:

At the time of completion of the investigation the facility appears to be in compliance with the state and federal applicable requirements, though follow-up is necessary in some areas to expand on the applicability determinations.

NAME Handoval

DATE 9/26/2017 SUPERVISOR JK