

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

N143655418

FACILITY: FCA US Technology Center		SRN / ID: N1436
LOCATION: 800 Chrysler Drive, AUBURN HILLS		DISTRICT: Warren
CITY: AUBURN HILLS		COUNTY: OAKLAND
CONTACT: Stuart Weiss , Air Compliance Specialist		ACTIVITY DATE: 07/29/2020
STAFF: Adam Bogнар	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled Inspection - Revised report after comments from permittee		
RESOLVED COMPLAINTS:		

On Wednesday, July 29, 2020, Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) employee Adam Bogнар conducted a scheduled inspection of FCA US LLC – Chrysler Technology Center (the “Facility” or “FCA Tech Center”) located at 800 Chrysler Drive, Auburn Hills, Michigan 48326. The purpose of the inspection was to determine the facility’s compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) Administrative Rules; Renewable Operating Permit No. MI-ROP-N1436-2018; and Permit to Install No. 155-18.

Due to the Covid-19 Pandemic, all records were reviewed electronically. Some of these records were reviewed prior to this inspection during the Governor’s “stay at home” executive order. The on-site inspection conducted on July 29, 2020 was a facility-walk through only. We did not conduct any meetings and I did not collect any records during my on-site inspection. Additional records were requested after the on-site inspection. Mr. Weiss provided all records that I requested.

The FCA US LLC – Chrysler Technology Center campus is comprised of approximately 5.5 million square feet of space. This large footprint makes this one of the largest buildings in the United States. FCA Tech Center performs research and development for automobile, light duty truck, and vehicle component manufacturing. Operations include dynamometer test cells, pilot assembly processes, and various lab activities. Normally, there are approximately 16,000 workers at this facility. This number has been reduced to approximately 1500-2000 since re-opening after the Governor’s “stay at home” order. The majority of the on-site staff are technicians and operational staff. Most of the office workers are now teleworking on a full-time basis.

It is located in Oakland county which is currently designated as non-attainment for ozone based on the National Ambient Air Quality Standards (NAAQS). Oakland county is designated as attainment for all other criteria pollutants.

I arrived at the facility at 10 am. I met with Mr. Stuart Weiss, Air Compliance Specialist. I followed FCA Tech Center’s Covid-19 Protocol, which included filling out a form at home prior to the inspection. The form indicated that I have not experienced any recent symptoms of Covid-19 and have not been exposed to someone who has tested positive or has symptoms. After submitting the form, my temperature was taken. After my temperature was taken, I was allowed into the facility. I identified myself and stated the purpose of the inspection.

MI-ROP-N1436-2018**EU-12HWG-1.07**

This emission unit is one natural gas-fired boiler with a heat input of 40 million BTU/hour. This boiler utilizes natural gas exclusively and is equipped with low NOx burners. The boiler is subject to 40 CFR Part 60, Subpart Dc – New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units.

Section III – SC 1: States that the permittee shall only fire pipeline quality natural gas in the boiler. Only natural gas is fired in all boilers at FCA Tech Center. There is some amount of No. 2 fuel oil on site that could be used in an emergency but is otherwise not used.

Section VI – SC 1: States that the permittee shall monitor and record the fuel usage for EU-12HWG-1.07 on a monthly basis in a manner and with instrumentation acceptable to the AQD district supervisor. These records are maintained in accordance with this condition and 40 CFR Part 60, Subpart Dc. Total natural gas usage for all of 2019 was reported at 42.9MM SCF.

Section VI – SC 2: States that the permittee shall develop a boiler preventative maintenance program and log preventative maintenance. A preventative maintenance program is maintained. No recent changes have been made to the boiler PM program.

Section IX – SC 1: States that the permittee shall comply with 40 CFR Part 60, Subpart A, 40 CFR Part 63, Subpart DDDDD, and 40 CFR Part 60, Subpart Dc. EU-12HWG-1.07 appears to be in compliance with these federal requirements. The requirements of Subpart DDDDD are discussed below under FG-BOILERMACT. The facility complies with 40 CFR Part 60, Subpart Dc by maintaining records of fuel usage and submitting bi-annual compliance certification reports.

FG-BOILERS

This flexible group consists of four (4) boilers using natural gas as primary fuel with fuel oil No. 2 as backup, and five (5) boilers using natural gas exclusively.

Section I – SC 1,2,3: Places limits on Sulfur Dioxide (SO₂) emissions. Sulfur Dioxide emissions from FG-BOILERS are limited to 104.7 lb/hr and 232.9 tons/year. Facility is in compliance with the annual emission limit based on the records I reviewed. In 2019, the facility reported a total of 0.126 tons of Sulfur Dioxide was emitted. The highest reported monthly sulfur emissions were in February 2019 at 0.02 tons, which corresponds to an average hourly emission rate of .053 lb/hour.

Section I – SC 4: Places a limit on the emission of Nitrogen Oxides (NO_x) of 85.8 tons/year. The facility is in compliance with this emission limit based on the records I reviewed. In 2019, the facility reported a total of 20 tons of NO_x. The 12-month rolling period with the highest emissions in 2019 was February with 23.485 tons.

Section II – SC 1,2: Limits natural gas usage in FG-BOILERS to 521.5 million cubic feet/year. Facility is in compliance with this emission limit based on the records I reviewed. In 2019, the facility reported natural gas usage in FG-BOILERS at 407.07 million cubic feet. The highest 12-month rolling total in 2019 was in February at 469.7 million cubic feet. Fuel Oil No. 2 usage is restricted to 6,415,000 gallons/year. Based on the records I reviewed, Fuel Oil No. 2 is seldom used. 100 gallons of Fuel Oil No. 2 were used in EG -12-1.03 in January 2019. No Fuel Oil has been used in boilers since then.

Section III – SC 1,2: States that the permittee shall only fire pipeline quality natural gas in the following boilers: 12-HWG-1.05, 12-HWG-1.06, 16-B4.01, 16-B-4.02 and 16-B-4.03. Additionally, these conditions state that the permittee shall only fire natural gas or Fuel Oil No. 2 in the following boilers: 12-HWG-1.01, 12- HWG-1.02, 12-HWG-1.03 and 12-HWG-1.04. These boilers are operated with the appropriate fuels based on the records I reviewed.

Section V – SC 1: States that the permittee shall determine the sulfur content of No. 2 fuel oil by fuel supplier certification or fuel sample test data for any fuel oil used in FG-BOILERS. The fuel oil was sampled in 2018 and found to contain 386.4 ppm sulfur.

Section VI – SC 1,2: Requires the permittee to monitor and record the quantity and type of each fuel used in each boiler on a monthly and 12-month rolling basis. For any Fuel Oil No. 2 shipment, the permittee must keep a record of sulfur content, heat content, and quantity received. These records are maintained. Fuel usage for each boiler is monitored and recorded separately for each 12-month rolling period.

Fuel Oil No. 2 is seldom used. The fuel oil currently on-site has been there for many years. The only time this fuel oil has been used in recent times was for a 100-gallon test conducted in 2019. The fuel oil used for the 100-gallon test was sampled in 2018 and found to contain 384.6 ppm sulfur.

Section VI – SC 3: States that the permittee shall monitor and record the boiler monthly hours of operation. The run-time hours are recorded for all boilers in FG-BOILERS combined. Run-time is reported at 8,784 hours in all of 2019.

Section VI – SC 4: States that the permittee shall keep a record of the average hourly and monthly 12-month rolling emissions of SO₂. These records are kept.

Section VI – SC 5: States that the permittee shall keep a record of the monthly and 12-month rolling emissions of NO_x. NO_x emissions from FG-BOILERS are recorded in this manner.

Section VI – SC 6: States that the permittee shall develop a boiler preventative maintenance program and log preventative maintenance. A preventative maintenance program is maintained. No recent changes have been made to the boiler PM program.

Section IX – SC 1: Section IX – SC 1: States that the permittee shall comply with 40 CFR Part 60, Subpart A, 40 CFR Part 63, Subpart DDDDD, and 40 CFR Part 60, Subpart Dc. EU-12HWG-1.07 appears to be in compliance with these federal requirements. The requirements of Subpart DDDDD are discussed below under FG-BOILERMACT. The facility complies with 40 CFR Part 60, Subpart Dc by maintaining records of fuel usage and submitting bi-annual compliance certification reports.

FG-BOILERMACT

This flexible group contains four (4) boilers using natural gas as primary fuel with fuel oil No. 2 as backup, and eight (8) boilers using natural gas exclusively. This flexible group is applicable to the following emission units when operating as a "Unit designed to burn gas 1 subcategory." This includes gaseous fuel boilers that burn liquid fuel for periodic testing of liquid fuel, maintenance, or operator training, not to exceed a combined total of 48 hours during any calendar year and gaseous fuel boilers that burn liquid fuel during periods of gas curtailment or gas supply interruptions of any duration.

Section II – SC 1: States that the permittee shall only burn fuels as allowed in the unit designed to burn gas 1 subcategory definition in 40 CFR 63.7575. The permittee only burns natural gas in these boilers. Fuel oil #2 was briefly used as a short test run several years ago but has not been used since.

Section III – SC 1,2,3,4,5,6: Specifies process/operational restrictions for FG-BOILERMACT. The boilers in the central energy plant are equipped with oxygen trim systems. The boilers are considered existing units because they commenced construction before June 4, 2010. Tune ups are conducted at least once every five years in accordance with 40 CFR Part 63 Subpart DDDDD (Boiler MACT). I requested and received documentation for the most recent tune up of EG-12-HWG-1.02. Based on the documentation, this tune up was performed within the last five years (on February 22, 2018). The tune-up inspector noted "Good flame pattern" and that the air to fuel ratio was at "acceptable levels".

Section VI – SC 1,2,3,4,5: Specifies recordkeeping requirements for FG-BOILERMACT. FCA appears to be in compliance with recordkeeping requirements of FG-BOILERMACT. FCA maintains records of any alternative fuels used, performance tests completed, and all semi-annual/annual reports.

Section IX – Specifies other requirements for FG-BOILERMACT. The facility appears to be in compliance with 40 CFR Part 63, Subpart DDDDD based on the inspection and records that I reviewed. FCA Tech center performs tune-ups of boilers according to Table 3 of Subpart DDDDD.

FG-B/UP-TURBINES

This flexible group consists of two natural gas-fired turbine generators used for peaking.

Section I – SC 1,2: Establish emission limits for Nitrogen Oxides (NOx). NOx emissions are limited to 89.29 lb/hour and 35.72 tons/year. This facility is in compliance with these emission limits based on the records I reviewed. NOx emissions were reported at 2.9 tons for all of 2019. Since January 2019, the 12-month period with the highest emissions is February 2020 at 4.25 tons. Compliance with the hourly NOx emission rate will be determined after an onsite inspection.

Section I – SC 3,4: Establish emission limits for CO. CO emissions are limited to 16.23 lb/hour and 6.5 tons/year. The facility is in compliance with these emission limits based on the records I reviewed. CO emissions were reported at 0.53 tons for all of 2019. Since January 2019, the 12-month period with the highest emissions is February 2020 at 0.77 tons. Compliance with the hourly CO emission rate will be determined after an onsite inspection.

Section I – SC 5: Limits sulfur content in natural gas to 0.8%. Mr. Weiss stated that CMS Energy provides FCA-CTC with natural gas that meets Mich. Admin. Code R.460.2381(1) - 20 grains sulfur per 100 cubic feet. This equates to approximately 0.03%.

Section II – SC 1: Limits natural gas usage to 190.2 MM cubic feet/year for both turbines combined. In the 12-month period ending in February 2020, the total natural gas use for both turbines combined is reported at 22.6MM cubic feet. This is also the highest reported 12-month rolling usage for the period I reviewed.

Section III – SC 1,2,3: Specifies process/operational restrictions for FG-B/UP-TURBINES. The turbines are only operated as needed during a power outage. The units burn only pipeline quality natural gas. The turbines were not operated for more than 400 hours based on a 12-month rolling time period. According to the digital hour meter Turbine 1 has operated for 23 hours and Turbine 2 has operated for 387.7 hours since being constructed.

Section VI – SC 1: States that the permittee shall monitor and record the monthly hours of operation of each turbine. These records are maintained. In 2019, turbine Unit 1 was operated for 7.4 hours and turbine Unit 2 was operated for 3.7 hours.

Section VI – SC 2,3: Requires the permittee to keep 12-month rolling records of fuel consumption, total NOx emissions, and total CO emissions. These records are maintained. For the 12-month period ending in February 2020, Unit 1 and Unit 2 fuel consumption is reported at 21,817,000 and 835,000 cubic feet, respectively. Unit 1's fuel usage is so much higher due to 14,703,000 cubic feet being used in November 2019.

Section VI – SC 4: States that the permittee shall develop a turbine preventative maintenance program and log preventative maintenance. A PM program is maintained. There have been no recent changes to the PM program.

FG-EMERGENCY-RICE

This flexible group includes existing emergency stationary reciprocating internal combustion engines that have a maximum site rating of 500 brake horsepower and less than 30 liters per cylinder located at a major source of hazardous air pollutants (EU-FIREPUMP-1 & EU-FIREPUMP-2).

Section III – SC 1,2,3,4,5,6,7,8,9: Specifies process/operational restrictions for FG-EMERGENCY-RICE. The permittee appears to comply with these process/operational restrictions. Maintenance records show that the oil filter on both units was changed in June 2019. The engine has not exceeded 100 hours for maintenance checks and readiness testing. CEP Fire Sprinkler and HQ Tower Fire Sprinkler operated for 26.2 and 27 hours, respectively, in 2019.

Section IV – SC 1: States that the permittee shall install a non-resettable hour meter on each engine. I verified that these hour meters were installed during my inspection. The CEP Fire Sprinkler hour meter showed 808 hours. The HQ Tower Fire Sprinkler showed 594 hours.

Section V – SC 1: NA since oil analysis program is not used.

Section VI – SC 1: Requires the permittee to keep records of the hours of operation of each engine using a non-resettable hour meter. Additionally, the permittee must differentiate and document how many of these hours are used for emergency operation, non-emergency operation, and demand response operation. For emergency operation, the permittee must document what classified the operation as emergency.

Since January 2019, these engines have not been operated for emergency or demand response purposes. Both engines are operated for around 2 hours per month for testing & maintenance purposes. Total operating hours in 2019 for EU-FIREPUMP 1 & EU-FIREPUMP 2 are 26.2 hours and 27 hours, respectively.

Section VI – SC 2,3: Requires the permittee to keep records of the occurrence, duration, and steps taken to mitigate each malfunction of operation. Based on the records I reviewed there have been no malfunctions in FG-EMERGENCY-RICE since January 2019. FCA-CTC does its fire pump maintenance in accordance with NFPA25 with additional steps provided by FCA to the contractor.

Section VI – SC 4: Requires the permittee to keep records of the parameters that are analyzed in the oil analysis program. The oil analysis program is not used. An annual tune up is performed on both engines each year. The oil is changed during these tune ups. Mr. Weiss provided me with documentation indicating that engine tune-ups were performed in June 2019.

Section VI – SC 5: States that the permittee shall maintain maintenance records for FG-EMERGENCY-RICE. I verified that maintenance records are maintained for both engines in this flexible group.

Section VI – SC 6: Requires the permittee to keep records of the sulfur content of the diesel fuel used in FG-EMERGENCY-RICE. According to the diesel fuel supplier the fuel contains less than 15 ppm sulfur.

Section IX – SC 1,2: States that the permittee shall comply with 40 CFR Part 63, Subparts A – General Provisions, and ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. FCA appears to be in compliance with these standards.

Section 2 – Scientific Labs

EU-KIRKSITEFURN

This emission unit consists of an electrically heated melting furnace. Kirksite is a zinc-based metal casting formulation. Casting operation utilizes Pep Set sand mold. Processing of the mold and core is exempt under R 336.1282(2)(a)(iv).

Section V – SC 1: States that the permittee shall conduct and record visible emission readings on EU-KIRKSITEFURN once during each 5-year period. This test was performed. This is a relatively small operation. Visible opacity is not likely unless some contaminant ends up inside the furnace.

FG-TESTCELLSA

This flexible group contains fourteen engine dynamometer test cells located in Wing A. At the time of installation, these test cells were exempt from the requirements of R 336.1201 pursuant to R 336.1285(d) (currently R 336.1285(2)(g)).

Section I – SC 1: Limits SO₂ emissions to 1.7 lb/MMBTU heat input of fuel oil. This limit only applies when the test cells are fired by fuel oil. No fuel oil has been used in these dynamometers since January 2019.

Section VI – SC 1: States that when the engines are fired by fuel oil, the permittee shall maintain a record of the fuel specifications. No fuel oil has been used in FG-TESTCELLSA since January 2019.

Section VI – SC 2: States that the permittee shall maintain a record of the date of installation for each engine test cell. According to Mr. Weiss, all of these dynamometers were installed in October 1990 at the same time.

Section VI – SC 3: Requires the permittee to record the types and amounts of fuel used per calendar year. These records are maintained. The total fuel consumption in 2019 was 60,353 gallons of gasoline.

FG-ENGPAINSHOP

This flexible group consists of Surface coating and associated auxiliary coating equipment located at the engineering paint shop.

Section I – SC 1,2,3,4,5,6: These conditions establish several emission limits for VOC. VOC emissions are limited to 1185.6 lbs/day and 30.3 tons per year. The facility is in compliance with these emission limits based on the records I reviewed. Total VOC emissions for 2019 were reported at 4.4 tons. The daily VOC emission limit has not been exceeded.

Additionally, these conditions limit VOC content of coatings depending on the process the coatings are used in. VOC content is limited to 3.6 lb/gallon for plastic parts, 5.16 lb/gallon for primer/surfacer painting process, 5.44 lb/gallon for prime painting process, and 6.60 lb/gallon for top coat painting process. Painting is not done on plastic parts. Mr. Weiss provided records of VOC content for the above coating types. The facility appears to meet these VOC content restrictions. See table below for the facility's current maximum VOC formulations.

Coating Type	VOC Content	VOC Content minus water
Topcoat	6.15	6.23
Primer/Surfacer	4.28	4.64
Primer Paint	4.49	4.49
Cleanup Solvent	6.36	6.36

Section III – SC 1: States that the permittee shall not operate any spray booth unless the filters are installed and operating in a satisfactory manner. I observed that the filters were in place; however, they were some small gaps in the filter. The booth operator explained that the filters have been in place for too long and they have begun curling over on themselves due to being saturated with paint solids. No painting was taking place during my inspection. I asked Mr. Weiss to put fresh filters in place before painting again and to send me a picture once the filters are installed. Mr. Weiss provided me with pictures after the inspection showing that fresh filters were put in place.

Section III – SC 2: States that waste coatings and solvents shall be stored in closed containers. I observed that waste coatings are stored in sealed containers.

Section VI – SC 1: Requires the permittee to keep a record of the identity of each coating and the coating category to which it belongs. These records are maintained. Coatings are classified by their coating category in the same database where coating usage is reported.

Section VI – SC 2: States that the permittee shall keep a daily usage rate for each coating, in gallons. These records are maintained. Daily usage is generally less than 10 gallons.

Section VI – SC 3,4,5: Requires the permittee to keep a record of the VOC content of each coating as received and as applied, both with and without water. These records are maintained.

Section VI – SC 6: Requires the permittee to record daily and 12-month rolling VOC emissions. These records are maintained.

Section VI – SC 7: Requires the permittee to determine the VOC content of coatings using Method 24. As an alternative, the VOC content may be determined from formulation data. VOC content is currently determined from formulation data.

FG-CNTRLDCELLS

This flexible group contains forty-six (46) engine dynamometer test cells located in Wing C, Wing D and Wing E (durability, transmission and catalyst test cells). The 46 engine dynamometer test cells house a total of 80 engine dynamometer test stands. Emissions from these test cells are controlled with thermal oxidizers. All Wing D test cells are controlled. Wings C and E have both controlled and uncontrolled test cells. Wings A and B are uncontrolled test cells.

Section I – SC 1,2: Establish emission limits for Nitrogen Oxides (NOx). NOx emissions are limited to 0.1049 lbs/gallon and 218.2 tons/year. The facility is in compliance with these emission limits based on the records I reviewed. NOx emissions were reported at 108.1 tons for all of 2019. Based on the results of the most recent stack test, NOx emissions are 0.0838 lb/gallon.

Section I – SC 3,4: Establish emission limits for Carbon Monoxide (CO). CO emissions are limited to 0.01 lbs/gallon and 20.8 tons/year. The facility is in compliance with these emission limits based on the records I reviewed. CO emissions were reported at 10.3 tons for all of 2019. Based on the results of the most recent stack test, CO emissions are 0.0024 lb/gallon.

Section I – SC 5,6: Establish emission limits for Volatile Organic Compounds (VOC). VOC emissions are limited to 0.006 lb/gallon and 12.5 tons per year. The facility is in compliance with these emission limits based on the records I reviewed. VOC emissions were reported at 6.2 tons for all of 2019. Based on the results of the most recent stack test, VOC emissions are 0.03 lb/gallon.

Section I – SC 7: Limits Lead emissions to 0.58 tons/year. The facility is in compliance with this emission limit based on the records I reviewed. Lead emissions were reported at 0.006 tons for all of 2019. The highest reported lead emissions since January 2019 were in the 12-month period ending in September 2019 at 0.011 tons.

Section II – SC 1,2,3: Establish material limits for fuels. Unleaded fuel use in FG-CNTRLDCELLS is limited to 4,160,700 gallons/year or 26,311 gallons/day. Leaded gasoline emissions are limited to 95,000 gallons/year for both FG-CNTRLDCELLS and FG-UNCNTRLDCELLS. The facility is in compliance with these material usage limits based on the records I reviewed. Unleaded fuel usage is reported at 2,061,917 gallons for all of 2019. Facility reported that no leaded fuel was used for the period I reviewed.

Daily unleaded gasoline usage is reported as an average. The total gallons used per month is divided by the number of days the test cell operated to get an average daily usage for each test cell. The averages for each test cell are added together to obtain the total average daily usage. Average daily fuel use is reported between 5652 gallons on the low end up to 8047 gallons on the high end of usage.

Section III – SC 1: States that the permittee shall not operate the durability and transmission test cells unless the associated thermal oxidizers are installed, maintained, and operated in a satisfactory manner. Proper operation of the thermal oxidizers includes maintaining a 3-hour average minimum combustion chamber temperature of either 1400 ° F or the value established during the most recent stack test. The oxidizers must also have a retention time greater than 0.5 seconds. FCA is in compliance with these limits based on this inspection and record review. I collected temperature data during my inspection on all operating thermal oxidizers. Of the 11 total thermal oxidizers, 6 were operating during this inspection. See table below for temperature data collected during this inspection.

Wing	Oxidizer	3-hr Average Temperature (°F)	Current temperature (°F)
C	91-THO-4.03	1516	1510
C	91-THO-4.02	1515	1520
D	92-THO-4.02	1517	1515
D	92-THO-4.03	1519	1509
D	92-THO-4.06	1514	1506
E	93-THO-4.02	1520	1527

Section V – 1,2,3: Specifies testing/sampling requirements for FG-CNTRLDCELLS. NOx, VOC, and CO testing has been performed in the past 5 years. NOx and CO stack testing was conducted on March 22, 2017. VOC stack testing was conducted on August 31, 2016. Facility submitted all required documentation.

Section VI – SC 1,2: States that the permittee shall monitor and record the fuel usage and the number of days operated for each test cell on a monthly basis. These records are maintained and used to calculate the daily average fuel usage required by Section VI – SC 3. These values are summed into 12-month rolling records required by Section VI – SC 4. Leaded fuel is accounted for in accordance with Section VI – SC 5.

Section VI – SC 6: States that the permittee shall keep records of the maximum lead content for each type of fuel used. These records are kept. Based on the records I reviewed the maximum lead content is 0.02 ppm for ultra-low sulfur diesel fuel and 0.05 grams/gallon in regular gasoline.

Section VI – SC 7,8,9,10: Require the permittee to maintain 12-month rolling emission records for NOx, CO, VOC, and Lead. These records are maintained.

Section VI – SC 11: States that the permittee shall install and maintain a device to monitor the temperature of the thermal oxidizer combustion chamber. This temperature monitor shall record average temperatures for every 3-hour period. These records are maintained. Based on the records I reviewed the oxidizers are operated at approximately 1550 degrees Fahrenheit. The data sheets provided to me showed average temperatures for every-15 minute period.

Section VI – SC 12: Requires stack test data be used for monthly emission calculations. Stack test data is used for these calculations.

Section IX – SC 1: States that the permittee shall comply with the approved written plan for the collection, analysis, and recording of data used to determine compliance with the fuel use limits. This plan has been followed based on the records I reviewed. No recent changes have been made to this plan since the last ROP issuance.

Section IX – SC 2: States that a Malfunction Abatement Plan (MAP) shall be kept on file at the facility. A malfunction abatement plan is kept.

FG-CAMTO

FG-CAMTO consists of 11 natural gas fired thermal oxidizers (TO) serving forty-six (46) dynamometer test cells. The 46 engine dynamometer test cells house a total of 80 engine dynamometer test stands.

Section VI – SC 1: Requires the permittee to utilize three thermocouples in each thermal oxidizer. These thermocouples shall ensure that the combustion chamber temperature remains above 1400 degrees Fahrenheit and that the thermal oxidizer will meet applicable emission limits. Based on the records I reviewed, the temperature of the oxidizers is kept above 1400 degrees when the oxidizer is operating. Not all thermal oxidizers operate simultaneously. Oxidizers are turned on as needed based on how many test cells are being utilized.

Section VI – SC 2: Requires the permittee to calibrate or install new thermocouples on an annual basis. The device that translates the thermocouple signal into temperature readout must also be calibrated annually. Mr. Weiss provided me with work order numbers for these preventative maintenance activities. The work orders show that each thermal oxidizer was serviced once in 2019.

Section VI – SC 3: States that the permittee shall continuously record the TO temperature data when an engine is operating in FG-CNTRLDCELLS. Based on the TO temperature records I reviewed the data is recorded continuously.

Section VI – SC 4,5,6,7,8: Specifies CAM requirements. FCA Tech Center appears to be in compliance with the CAM rule requirements. CAM plan includes provisions for maintaining necessary parts for routine repair of the monitoring system. Records of monitoring data for the thermal oxidizers are maintained. FCA submitted CAM semi-annual reports in a timely manner.

Section IX – SC 1,2,3,4: Specifies CAM requirements. Facility appears to be in compliance with the CAM rule requirements (other than the issue noted above). No deviations were reported. Facility is not currently required to submit/maintain a Quality Improvement Plan (QIP).

FG-UNCNTRLDCELLS

FG-UNCNTRLDCELLS consists of thirty-four (34) engine dynamometer test cells (performance test cells) located in Wings B, C and E. The 34 engine dynamometer test cells house a total of 34 engine dynamometer test stands. Performance test cells do not have emission control equipment.

Section I – SC 1,2: Establish emission limits for Nitrogen Oxides (NOx). NOx emissions are limited to 32.1 tons/year using an emission factor of 0.2 lb/gallon fuel (ROP requires this emission factor to be used for emission calculations). The facility is in compliance with these emission limits based on the records I reviewed. NOx emissions were reported at 28.6 tons for all of 2019. During the most recent stack test, NOx emissions were reported at 0.0012 lb/gallon. The maximum NOx lb/gallon limit from the permit is used for emission calculations, which is acceptable since the stack test values are even less than the permit limit.

Section I – SC 3,4: Establish emission limits for Carbon Monoxide (CO). CO emissions are limited to 501 tons/year with an emission factor of 3.12 lb CO/gallon fuel (ROP requires this emission factor to be used for emission calculations). The facility is in compliance with these emission limits based on the records I reviewed. CO emissions were reported at 445.5 tons for all of 2019. During the most recent stack test, CO emissions were reported at 0.030 lb/gallon.

Section I – SC 5,6: Establish emission limits for Volatile Organic Compounds (VOC). VOC emissions are limited to 25.7 tons per year with an emission factor of 0.16 lb/gallon fuel (ROP requires this emission factor to be used for emission calculations). The facility is in compliance with these emission limits based on the records I reviewed. VOC emissions were reported at 22.8 tons for all of 2019. During the most recent stack test, VOC emissions were reported at 0.030 lb/gallon.

Section I – SC 7: Limits Lead emissions to 0.37 tons/year. The facility is in compliance with this emission limit based on the records I reviewed. Lead emissions were reported at 0.006 tons for all of 2019. The highest reported lead emissions since January 2019 were in the 12-month period ending in September 2019 at 0.02 tons.

Section II – SC 1,2,3: Establish material limits for fuels. Unleaded fuel use in FG-CNTRLDCELLS is limited to 320,952 gallons/year or 2,362 gallons/day. Leaded gasoline emissions are limited to 95,000 gallons/year for both FG-CNTRLDCELLS and FG-UNCNTRLDCELLS. The facility is in compliance with these material usage limits based on the records I reviewed. Unleaded fuel usage is reported at 285,568 gallons for all of 2019. Facility reported that no leaded fuel was used since January 2019. Daily unleaded gasoline usage is reported as an average. The total gallons used per month is divided by the number of days the test cell operated to get an average daily usage for each test cell. The averages for each test cell are added together to obtain the total average daily usage. Average daily fuel use is reported between 990 gallons on the low end up to 1207 gallons on the high end of usage.

Section VI – SC 1,2: States that the permittee shall monitor and record the fuel usage and the number of days operated for each test cell on a monthly basis. These records are maintained and used to calculate the daily average fuel usage required by Section VI – SC 3. These values are summed into 12-month rolling records required by Section VI – SC 4. Leaded fuel is accounted for per Section VI – SC 5.

Section VI – SC 6: States that the permittee shall keep records of the maximum lead content for each type of fuel used. These records are kept. Based on the records I reviewed the maximum lead content is 0.02 ppm for ultra-low sulfur diesel fuel and 0.05 grams/gallon for regular gasoline.

Section VI – SC 7,8,9,10: Require the permittee to maintain 12-month rolling emission records for NOx, CO, VOC, and Lead. These records are maintained.

Section IX – SC 1: States that the permittee shall comply with the approved written plan for the collection, analysis, and recording of data used to determine compliance with the fuel use limits. This plan has been followed based on the records I reviewed. No changes have been made to this plan since the last ROP was issued in 2018.

FG-GASTANKS

This flexible group contains any existing or future emission unit that emits air contaminants that are exempt from the requirements of R 336.1201 pursuant to R 336.1284(2)(g)(i). FG-GASTANKS currently includes six (6) underground gasoline storage tanks for Wet Fuels Building, eighteen (18) underground gasoline storage tanks at the South Tank Farm and three (3) underground gasoline storage tanks at the North Tank Farm.

Section III – SC 1,2: States that the permittee shall not receive deliveries of gasoline in these storage tanks unless a submerged fill pipe and vapor balance system is present. I was able to observe the submerged fill pipe during my inspection. Mr. Weiss sent me a photo of a recent gasoline delivery which showed that a vapor balance/recovery system was connected during the delivery.

Section IV – SC 1,2: States that the tanks shall have systems in place to ensure that the vapor-tight collection lines are connected before any gasoline is loaded. FCA Tech Center employees utilize a checklist for each gasoline delivery to ensure that the hoses are connected before unloading gasoline.

Section VI – SC 1: Requires the facility to keep records indicating the dimensions and storage capacity of gasoline storage tanks larger than 10,566 gallons but smaller than 19,810 gallons. These records are maintained.

Section IX – SC 1,2: States that the permittee shall comply with the applicable provisions of R 336.1703. Additionally, the permittee must maintain and utilize a written procedure and checklist to ensure that the vapor tight collection line is connected before any gasoline is loaded into the storage tanks. A written checklist is utilized during each delivery. Facility appears to comply with Rule 703 by having a vapor recovery system and vapor-tight collection lines.

FG-WETFUELSTEST

This flexible group contains equipment in the wet fuels area. Process and process equipment are exempt pursuant to R 336.1283(2)(a)(ii).

The wet fuels test area is used to remove gasoline from gas tanks, test carbon fuel canisters, and test fuel injectors. After the majority of the fuel is transferred out of a fuel tank, the remaining fuel is left out to evaporate. Several vacuum hoses capture evaporative gasoline emissions and vent them out through a stack. The bulk of the gasoline removed from tanks is transferred via pipe to an underground storage tank. Emissions from the carbon fuel canister and fuel injector testing are also vented through a stack.

Section III – SC 1: States that the testing equipment in the wet fuels area shall not be used for the production of a product for sale, market testing, or for the treatment of hazardous waste. Mr. Weiss stated that the wet fuels lab is never used for these purposes.

Section III – SC 2: States that new equipment installed in this flexible group may not be exempt from Rule 201 requirements if it is a major modification or has emissions above significance levels outlined in R 336.1119. I did not observe any new equipment in this area.

Section VI – SC 1: States that the permittee shall monitor fuel usage on a monthly basis. These records are maintained. The records I reviewed show that in 2019, 325.7 gallons of gasoline used in FG-WETFUELSTEST.

FG-RULE331

This flexible group contains existing or future emission units that emit air contaminants which are exempt from the requirements of R 336.1201 pursuant to R 336.1285(2)(l)(vi)(A) and R 336.1285(2)(l)(vi)(C). Flexible group includes any equipment for carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planing, buffing, sand blast cleaning, shot blasting, shot peening or polishing metals, plastics, wood and wood products, and any exhaust system or collector exclusively serving the above equipment. Equipment is exhausted externally and used on a nonproduction basis.

Section I – SC 1: Limits particulate emissions from FG-RULE331 to 0.1lb/1000 lb of exhaust gases. This emission limit is verified by performing and maintaining a log of all routine and scheduled preventative maintenance for the dust control equipment. Based on the records I reviewed, preventative maintenance was performed on all five dust collectors in 2020. The facility appears to comply with this emission limit.

Section VI – SC 1: States that the permittee shall keep an updated record of all emission units subject to R 336.1331 (a). Mr. Weiss provided me with these records. There are five total emission units subject to these standards.

Section VI – SC 2: States that once per year the permittee shall conduct and log all routine and scheduled preventative maintenance. Based on the records I reviewed, preventative maintenance has been performed on all five emission units in 2020.

FG-RULE290

Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 278, 278a and 290. Emission units installed/modified before December 20, 2016, may show compliance with Rule 290 in effect at the time of installation/modification.

There are currently no units operating under this flexible group.

FG-RULE287(2)(c)

This flexible group contains any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 278, 278a and 287(2)(c). Emission units installed/modified before December 20, 2016, may show compliance with Rule 287

in effect at the time of installation/modification. Current emission units operating under this flexible group are EU-MAINTPAINTING, EU-PRODDSGNPAINT, EU-WOODSHOPPAINT.

Section II – SC 1: Limits the coatings used per emission unit to 200 gallons/month/emission unit. FCA Tech Center has not exceeded this usage limit based on the records I reviewed. The highest monthly usage is reported at 51.4 gallons for the design booth in November 2019.

Section IV – SC 1: States that the booth exhaust systems must have a properly installed and operated particulate control system. I observed that dry filters were installed in the woodshop paint booth and in the maintenance paint booth; however, dry filters were not installed in one of the two design paint booths. During my inspection, one of the booths in EU-PRODDSGNPAINT was recently used and not equipped with a properly installed and operated particulate control system. Staff that work in the design paint booth area stated that the nightly maintenance person must have forgotten to install the filters. A violation notice was sent to FCA US LLC – Chrysler Technology Center on August 21, 2020 seeking compliance with this special condition and Rule 287 (2)(c).

After the inspection, Mr. Weiss provided me with pictures showing that fresh booth filters have been installed on EU-PRODDSGNPAINT.

Section VI – SC 1: States that the permittee shall maintain records of the volume of coating used, as applied, minus water, in gallons. These records are maintained. In all of 2019, the total amount of coatings used in all three emission units is reported at 277.2 gallons.

FG-COLD CLEANERS

This flexible group contains any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278, 278a and Rule 281 (2)(h) or Rule 285(2)(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. There are currently five cold cleaners installed at this facility. There are a number of other cleaners which are aqueous based.

Section II – SC 1: States that the permittee shall not use cleaning solvents containing more than five percent by weight of the following halogenated compounds: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chloroform, or any combination thereof. No halogenated solvents are utilized in the cold cleaners at this facility.

Section III – SC 1: States that cleaned parts shall be drained for no less than 15 seconds or until dripping ceases. This operating instruction is posted on the cold cleaners at FCA-Tech Center. I did not observe any cold cleaners in operation during this inspection.

Section III – SC 2: States that the permittee shall perform routine maintenance on each cold cleaner as recommended by the manufacturer. The cold cleaners at FCA-Tech Center appeared to be in good working order.

Section IV – SC 1,2,3,4,5: Specifies design/equipment parameters for FG-COLD CLEANERS. Each cold cleaner must have either an air/vapor interface less than ten square feet or only be used for cleaning metal parts with emission vented to the general in-plant environment. The cold cleaners at this facility appear to meet both criteria. All cold cleaners at this facility were equipped with covers during my inspection.

Section VI – SC 1,2,3,4: Specifies recordkeeping requirements for FG-COLD CLEANERS. FCA maintains records of the model number, installation date, air/vapor interface area, and solvent vapor pressure of each cold cleaner. Cold cleaners are operating under Rule 281(2)(h). Written procedures are posted conspicuously near each cold cleaner. None of the cold cleaners are heated. Mechanically assisted lids are kept closed when not in use.

Reporting Requirements

FCA Tech Center appears to be in compliance with the reporting requirements of MI-ROP-N1436-2018 and PTI No. 155-18 based on the records I reviewed. MAERS report certification was received on March 6, 2020. ROP Annual Certification, Semi-Annual Certification, and boiler MACT certification were all received on March 15, 2020.

Stack/Vent Restrictions

I did not verify stack dimensions during this inspection. The stacks that I was able to view appeared to be exhausted vertically unobstructed to the ambient air.

PTI No. 155-18

PTI No. 155-18 was issued on March 22, 2019. The permit revises the conditions of FG-CNTRLDCELLS to accommodate simulation dynamometer testing. In simulation testing, engines may be shut down and restarted multiple times during a test run to simulate real life situations. The majority of the conditions of this permit to install have been addressed in the ROP. This section of the report will be a review of the new conditions established in this PTI. This PTI allows FCA Tech Center to operate in either "Scenario A" or "Scenario B" depending on how the facility wants to operate. Currently, the facility operates under Scenario A.

FG-CNTRLDCELLS

Section I – SC 4,5: Places a limit on CO emissions of 17.57 tons per year while performing simulation testing. Based on the records I reviewed, simulation cells have only been used in July 2020 (not before). Emissions from simulation testing in July 2020 total 0.016 tons of CO emitted based on the records I reviewed.

Section II – SC 1a: Limits the usage of ultra-low sulfur diesel to 1,040,175 gallons/year while performing durability or transmission testing in FG-CNTRLDCELLS. Ultra-low sulfur diesel usage is reported at 52,259 gallons for the 12-month period ending in July 2020. The highest reported diesel fuel usage for the period I reviewed is 114,255 gallons for the 12-month period ending in February 2019.

Section II – SC 1b: Total fuel consumption from simulation testing is limited to 265,000 gallons per year based on a 12-month rolling time period. Based on the records I reviewed, the simulation test cells were only used in July 2020. Simulation test fuel use for July 2020 is reported at 123 gallons. Compressed natural gas is not currently permitted for use in the simulation test cells. FCA Tech Center does not have compressed natural gas piping or supply capability for the simulation test cells.

Section III – SC 2: States that the permittee shall submit, implement, and maintain an updated MAP for FG-CNTRLDCELLS to include the use of simulation test cells. This MAP must be submitted within 180 days of starting trial operation of the simulation test cells. Simulation test cells commenced trial operation on July 14, 2020. Mr. Weiss stated that FCA Tech Center will submit an updated MAP to the AQD before January 10, 2021.

Section III – SC 3: States that the permittee shall revise the fuel use monitoring plan upon switching from Scenario A to Scenario B. FCA Tech Center has not notified the AQD that they are going to switch to Scenario B.

Section V – SC 2: States that within 180 days of commencing trial operation of simulation testing, the permittee shall verify NOx, CO, VOC, PM10, and PM2.5 emission rates from the simulation test cells in FG-CNTRLDCELLS. This testing has not been completed yet. Trial operation on the simulation cells began on July 14, 2020. Mr. Weiss stated that he plans to complete this stack test around December 2020. FCA Tech Center must complete this stack test by January 10, 2021.

Section VI – SC 3: States that the permittee shall maintain records of the maximum sulfur content in the ultra-low sulfur diesel fuel. These records are kept. The maximum sulfur content for diesel fuel at FCA Tech Center is reported at 15 ppm sulfur.

Compliance Determination

At the time of this inspection, FCA US LLC – Chrysler Technology Center was not operating in compliance with Renewable Operating Permit No. MI-ROP-N1436-2018.

On the date of this inspection, it was noted that FCA US LLC – Chrysler Technology Center operated one of the two paint booths in EU-PRODDSGNPAINT without a properly installed and operated particulate control system. The dry filters in the floor of the down draft booth were not installed during my inspection. A violation notice was sent to FCA US LLC – Chrysler Technology Center on August 21, 2020 seeking compliance with Renewable Operating Permit No. MI-ROP-N1436-2018 and Rule 287 (2)(c).

FCA US LLC – Chrysler Technology Center has since corrected this violation. Mr. Weiss provided me with pictures showing that the booth filters have been installed. To prevent this from occurring in the future, the facility now requires personnel that operate the design paint booths to inspect and record the condition of the booth filters each day before any coating operations take place.

NAME Adam Bogros

DATE 12/8/2020

SUPERVISOR Sebastianykallemkal