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

B286646211

FACILITY: MAHLE ENGINE COMPONENTS USA, INC.		**SRN / ID:** B2866
LOCATION: 916 W. State St., SAINT JOHNS		**DISTRICT:** Lansing
CITY: SAINT JOHNS		**COUNTY:** CLINTON
CONTACT: Jordan Flowers , EHS Coordinator		**ACTIVITY DATE:** 08/09/2018
STAFF: Julie Brunner	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MINOR
SUBJECT: Scheduled compliance inspection of Mahle		
RESOLVED COMPLAINTS:		

On August 7 and 9, 2018, I conducted a scheduled inspection of MAHLE Engine Components USA, Inc. (MAHLE) in St. Johns. On August 7th, Dave Thompson and Nick Carlson from the Permit Section and Samantha Braman (Lansing District) accompanied me. The permit engineers wanted to see the hard chrome plating process. On August 9th, Sam also accompanied me to finish the rest of the inspection. The last compliance inspection of the facility was on April 19, 2016.

August 7, 2018
Arrived: 8:43 am
Departed: 11:43 am
Weather: 69°F, wind W @ 2 MPH, UV Index 1 Low

August 9, 2018
Arrived: 9:00 am
Departed: 2:30 pm
Weather: 70°F, wind SW @ 8 MPH, UV Index 1 Low

No visible emissions (VEs) were observed from any of the facility operations for either day. No odors were identified surrounding the facility for either day.

Contacts:
Mr. Jordan Flowers, EH&S Coordinator, 989-224-5439, Jordan.flowers@us.mahle.com

Facility Description:
MAHLE manufactures metal piston rings for all forms of combustion engines. The company was founded in 1946. The main market is automotive. MAHLE makes piston rings for the domestic market: Ford, Chrysler, and GM. A joint venture company, Allied Ring Components (ARC) shared operations to produce piston rings for the foreign market. The joint venture has been dissolved and ARC was officially out of the building last month. MAHLE has purchased some of their equipment such as the heat treating processes. The facility has a number of metal machining activities including milling, stamping, threading, drilling, cutting, grinding, and welding. Metal surface treatment includes heat treatment, hardening, phosphating, miscellaneous metal coating, and chrome plating. The facility also includes business offices and a warehouse.

The facility is located on west side of the City of St. Johns. The surrounding area is mixed use with residential and commercial/industrial properties.

Regulatory Overview:
MAHLE is considered a true minor source of any regulated air contaminants including hazardous air pollutants (HAPs), and is not subject to the Title V Renewable Operating Permit (ROP) program. The facility has a large number of exempt processes. The updated list is attached to the file copy of the inspection report. There are eight (8) active Permits to Install (PTIs) 351-83, 110-93, 394-94, 14-95, 384-08, 2-08A, 100-12, and 166-12 for the facility.

PTI 351-83 – Chromium stripping tank with wet fume scrubber
PTI 110-93 – Manganese phosphate/zinc phosphate coating process (ARC equipment that has been removed).
PTI 394-94 – Zinc phosphate coating process (ARC equipment that has been removed).
PTI 14-95 – Manganese phosphate coating process

PTI 384-08 – Two (2) high velocity oxygen fuel (HVOF) processes with the following emission units:

EUHVOF1	High Velocity Oxygen Fuel (HVOF) metal deposition operation to put a ceramic-metal coating on the running face of piston rings. Emissions are controlled by a dust collector.
EUHVOF2	High Velocity Oxygen Fuel (HVOF) metal deposition operation to put a ceramic-metal coating on the running face of piston rings. Emissions are controlled by a dust collector.

PTI 2-08A – Five (5) hard chrome electroplating tank lines with the following emission units:

EUCHROME1	Hard chrome electroplating tank with individual two stage composite mesh pad scrubber vented to a common HEPA filter (with pre-filter).	EUCHROME1&2 vent to HEPA filter #2. Reporting group RG-CHROME2.
EUCHROME2	Hard chrome electroplating tank with individual two stage composite mesh pad scrubber vented to a common HEPA filter (with pre-filter).	EUCHROME1&2 vent to HEPA filter #2. Reporting group RG-CHROME2.
EUCHROME3	Hard chrome electroplating tank with individual two stage composite mesh pad scrubber vented to a common HEPA filter (with pre-filter).	EUCHROME3,4&5 vent to HEPA filter #1. Reporting group RG-CHROME1.
EUCHROME4	Hard chrome electroplating tank with individual two stage composite mesh pad scrubber vented to a common HEPA filter (with pre-filter).	EUCHROME3,4&5 vent to HEPA filter #1. Reporting group RG-CHROME1.
EUCHROME5	Hard chrome electroplating tank with a two stage composite mesh pad mist eliminator system for control along with in-line mist eliminators. EUCHROME5 and EUCHROME6 vent to a common HEPA filter control device and stack.	EUCHROME3,4&5 vent to HEPA filter #1. Reporting group RG-CHROME1.
~~EUCHROME6~~ This line was removed in 9/2012.	~~Hard chrome electroplating tank with a two stage composite mesh pad mist eliminator system for control along with in-line mist eliminators.~~	Used to vent to HEPA filter #1.

The five (5) hard chrome electroplating tank lines are subject to 40 CFR 63, Subpart N, "National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks" as an area source. The affected source to which the provisions of this subpart apply is each chromium electroplating or chromium anodizing tank at facilities performing hard chromium electroplating, decorative chromium electroplating, or chromium anodizing.

PTIs 100-12 and 166-12 – Two (2) general permits for anhydrous ammonia tanks. PTI 100-12 was for a 1,000 gallon tank that has been removed. PTI 166-12 was for a new anhydrous ammonia tank located at the back of the plant. The following emission unit is defined on the general permit:

EU-AMMONIA	A single anhydrous ammonia storage tank and any associated handling process, nurse tanks or applicator tanks. The nominal tank storage capacity shall not exceed 30,000 gallons. For multiple storage tanks at a source: Each tank shall be covered by a separate general permit and shall

	have an identification number assigned from the application (identified on the Process Information form).

MAERS:
The facility reports to MAERS as a fee Category III. The MAERS was audited in 2017 and the following emissions were reported:

Emission Unit Name	Pollutant	Pollutant Emissions (lbs)
EU-ARC-LINE	Nitric Acid	628.8
EU-CHROME-STRIP	Chromium	2.01
EU-HVOF-KEROSENE	CO	114.19
	NOx	1073.35
	PM10	283.41
	SO2	3585.46
EU-LACQUER	VOC	1366.99
EU-MAINT-PAINT	VOC	365.58
EU-MN-COAT	Nitric Acid	539.60
EU-SANDBLAST	PM10	25.58
	PM25	2.56
EU-ZINC-COAT	Nitric Acid	46.90
RG-CHROME1	Chromium	0.09
RG-CHROME2	Chromium	0.08
RG-FINAL-CLEAN	VOC	1487.10
RG-FINAL-PAINT	VOC	197.02
RG-FINISHTURN	PM10	8.31
RG-PLASMA	PM10	133.14
	Nickel	64.6
	Chromium	40.61

Inspection:
We met with Mr. Jordan Flowers each day. We discussed the purpose of the inspection, the last inspection conducted, and then we reviewed records and operations. The facility operates five (5) days per week in three (3) 8-hour shifts. They can operate up to seven (7) days per week, and are currently running six (6) days per week. The facility produces 300,000 piston rings per day. MAHLE currently has 265 temporary and full time staff including salaried and labor. The facility was operating during the inspection.

PTI 351-83 – Chromium stripping tank with wet fume scrubber
PTI 351-83 is a cleaning process to strip chrome from the arbor collars (parts holders for the chrome plating operations). The arbors are used for ~10 plating cycles before they need to be stripped. Arbors that hold small

rings only require a 15-min stripping. For larger ring holders, it can be up to 2 hours because of more chrome build up. The stripping tank has a solution of water and potassium hydroxide (SDS – Chromelift Liquid). It was originally permitted using sodium hydroxide, but potassium hydroxide has a higher health screening number so this is not a meaningful change. An electric charge is applied with the collars acting as the cathodes and the negatively charged anodes force the chrome buildup off of the collars and into the bath solution. Potassium chromate is gradually formed in the bath during this process. The emissions from the stripping tank are controlled by a wet scrubber. Pressure drop readings are recorded daily on a clip board located by the cleaning process. If the pressure drop exceeds the operating parameters, maintenance is called to identify the problem per the O & M Plan. The O & M plan for the chrome strip tank scrubber was revised 10/13/17 and includes monitoring requirements, control ranges, work practice standards, corrective actions, and record keeping requirements. The ventilation system and scrubber were clean, competent, and showed no evidence of leaks or corrosion. There were no visible emissions from the process in compliance with Special Condition (SC) 11. The wet scrubber was installed and appeared to be operating properly as required by SC 12. The permitted chromium emission limit of 0.03 milligrams per cubic meter is assumed not to be exceeded with a properly operating control system, but a stack test would be required to verify this emission limit. There has been no testing since the Permit to Operate (PTO) was issued. MAHLE is in compliance with the conditions of PTI 351-83.

MAHLE did a "like-kind" replacement of the wet scrubber for easier maintenance, and to upgrade/replace it. The scrubber sits on a platform above the stripping tank. A Rule 285(2)(d) demonstration for replacement of air pollution control equipment with equivalent or more efficient was submitted in August of 2017. The wet scrubber on the chromium stripping tank was replaced with a new more efficient scrubber. The permitted chromium emission limit of 0.03 mg/SCM is based on 95% efficiency. The new scrubber reduces emissions to 0.015 mg/DSCM with an estimated removal efficiency of 97.5%. The new scrubber treats the same volume of air (6,000 CFM) and complies with the stack parameters on the PTI (maximum diameter of 21" and a minimum height of 31'). The stack has a no loss rain sleeve.

PTI 2-08A – Five (5) hard chrome electroplating tank lines (FGCHROME1 & FGCHROME2)
The permit is for six (6) hard chrome electroplating lines but EUCHROME6 was removed in November of 2012. EUCHROME6 is effectively null and void on the permit. EUCHROME2 is currently not in use and the tank line is empty. Each line has multiple above the tank in-line mist eliminators (mesh pad) that draw vapors from across the top of the tank, condense the vapors and drain back into the plating tanks. At the end of each line is a condensate tank that pulls out water. After each condensate tank the emissions are vented to a mesh scrubber located on the other side of a wall, and then the emissions from the chrome plating lines are combined to vent to two (2) HEPA filter control devices. Three (3) lines (EUCHROME3, EUCHROME4, EUCHROME5) go to one HEPA filter (FGCHROME1), and two (2) lines (EUCHROME1, EUCHROME2) go to the other HEPA filter (FGCHROME2). The emission unit numbering is backwards on the permit compared to the numbering used by the facility. The ventilation systems, ductwork, and scrubbers were clean, competent, and showed no evidence of leaks or acid corrosion. Total chromium emissions from the plating tanks are assumed to be either 100% trivalent or hexavalent chromium for the purposes of air toxics. The tank temperatures range from 135°F to 140°F. The tanks are plastic and well maintained with no evidence of corrosion.

Pressure drop gauges are at the end of each line, between each mist collector, and on the HEPA filters. Daily pressure drop readings are taken, and at startup and shutdown of the system. The paper logs for the pressure drop readings are located by the pressure gauges in each line. The daily readings are entered into an electronic database and kept on file for 5-years. Spare parts are kept on-site per the O & M Plan. The Chrome Scrubber O & M Plan was revised 10/13/17 and includes monitoring requirements, control ranges, work practice standards, corrective actions, and record keeping requirements. The HEPA spent filters are bagged and transported to a covered waste area where they are washed with water, which is collected and sent to a waste hauler.

The lines are operated from 2:00 pm to 11:00 am due to the cost of electricity, but they may be going to a 3-shift operation on the chrome plating lines. During the inspection, the operators were cleaning and prepping for the evening plating operations. Plated parts were being pulled from EUCHROME1 and that process was observed.

The process appears to be meeting all the requirements of PTI 2-08A as follows:

1. Emission Limits - Compliance with the emission limits for EUCHROME1-4 (Lines 3-6) was tested at 2.92 x 10^{-4} mg/dscm on October 22, 2008. Compliance with the emission limits for EUCHROME5-6 (Lines 1-2) was tested at 5.166 x 10^{-4} mg/dscm and 1.459 x 10^{-5} lb/hr on October 22, 2008. All chromium emissions tested were below the permit limits.

2. Process/Operational Restrictions - O & M plan last revised 10/13/17 and meets the requirements listed on PTI 2-08A.
3. Design/Equipment Parameters – The common HEPA filters with pre-filter are installed, maintained, and operated in a satisfactory manner. The systems have multiple differential pressure monitoring devices.
4. Monitoring/Recordkeeping – Inspections and work practice standards per 40 CFR 63, Subpart N are implemented, and records kept as required.
5. Reporting – 40 CFR 63, Subpart N Compliance Status Report for January 1, 2018 through June 30, 2018 was received on July 12, 2018. No excess emissions were reported for the period.
6. Stack/Vent Restrictions – Installed according to the permit requirements.

A 40 CFR 63, Subpart N Inspection Checklist was completed. There is no history that chemical fume suppressants were ever used in the hard chrome plating process. Testing of PFAS and PFOS, etc in the wastewater as requested by the City of St. Johns has been completed. Results were non-detect.

PTI 384-08 – Two (2) high velocity oxygen fuel (HVOF) processes

There are two (2) plasma spray coating stations (flame chamber furnace) each controlled by a Donaldson Tort cartridge dust collector. The plasma coating process uses kerosene, oxygen, nitrogen and metal powder (chromium, nickel, molybdenum) that is applied in a flame chamber furnace to create a hard surface coating on the piston rings.

The area to prep the piston rings before the HVOF process includes sand blasting the parts for porosity. The sand blasting is controlled by a dust collector. A wet grinder with mist collector and no external vents is also used to prep parts. After prep, the parts go to the flame chamber furnace for plasma coating. The metal powder is loaded into canisters with a preset amount of powder and the volume of powder used is recorded daily. The permit has a limit of 284,746 lb/year of ceramic coating. This is tracked based on the amount of metal powders used in the process to produce the ceramic-metal hard coating on the rings.

The performance of the fabric filter dust collector is monitored continuously with a pressure gauge as required by the permit. Daily pressure drop readings are recorded on a paper log and entered into an electronic database. The paper log is located near the dust collector and displays the operational limit for the gauge as between 0.1" to 4" and the compliance limit for the gauge as between 0.05" to 5". The ranges listed are based on manufacturer's recommendations for the equipment. If the pressure drop measured is outside of the control range, the engineer or environmental coordinator (and maintenance) is contacted per the facility O & M Plan. Two drums of particulate are shipped per month from the baghouses. The filters from the HVOF also go and metal dust is recovered by the vendor.

The process appears to be meeting all the requirements of PTI 384-08 as follows:

1. Emission Limits - Compliance with the emission limits for nickel and particulate are assumed based on proper operation of the baghouses. The emission limits have never been tested.
2. Process/Operational Restrictions – Pressure drop monitors are maintained per the O & M plan. The O & M plan was last revised 10/13/17 and meets the requirements listed on PTI 384-08.
3. Design/Equipment Parameters – The baghouses are installed, maintained, and operated in a satisfactory manner. The baghouses have differential pressure monitoring devices to continuously monitor the pressure drop.
4. Monitoring/Recordkeeping – Pressure drop is monitored and recorded as discussed above. The daily pressure drop records were obtained for the period 1/15/17 to 8/6/18. The records also note quarterly PMs, filter replacements, and any out of control ranges. The daily records of the amount of ceramic coating used were obtained for the period January 2017 to July 2018. The 12-month rolling total at the end of 2017 was 59,426.5 lbs and as of July 2018 it was 58,150.1 lbs. This is well below the limit of 284,746 lb/year of ceramic coating. All records are kept as required in a satisfactory manner.
5. Stack/Vent Restrictions – Installed according to the permit requirements.

PTI 14-95 – Manganese Phosphate Coating Line

The manganese phosphate coating operation is an automated dip line with traveling racks consisting of fifteen (15) tanks. The tanks are in an oval configuration. The 15th tank is an open oven. Tank #819 is a caustic rust strip. The parts don't go through every tank. MAHLE appears to be compliance with the conditions of PTI 14-95 which contains emission limits for nitric and phosphoric acids based on MAERS reporting, 0% opacity, and stack/vent restrictions.

PTI 166-12 – 500-gallon Anhydrous Ammonia Tank

The anhydrous ammonia tank which services the Gas Nitriding System (GNS) is located in a fenced area. Tanner is the owner that maintains the tank and provides the ammonia. The transport deliveries are performed by properly trained operators (Tanner). The tank is filled about once per quarter and about 16 gallons per day is used in plant processes. Safety-shut of valves are installed, and pressure relief valves were last replaced on 9/30/2016 and 7/30/2017 by Tanner. When working on the tank, a tank of water to purge though the valve hose is brought out. The ammonia is transferred into the facility via hard piping. There is no flex hose on the ammonia tank. The facility has an emergency response plan that was last sent to the local emergency responders on 3/22/2017. The 2018 plan is being sent out in August. The emergency contacts are posted. The facility has a tank maintenance and inspection program in place. The tank is located with the proper set back distance, has remote shut-off, and sensors / gauges as required by the general permit are located inside the facility. The tank appears properly maintained and in compliance with PTI 166-12.

Exempt Processes –
MAHLE has a large number of exempt processes and maintains a complete listing of exempt processes and the exemption they are operating under.

Stripping Area by Chrome Plating
Located in the same area of the cleaning process is a small paint station, "Stop-off lacquer coating". A lacquer thinner is applied by brush to the inside of the rings. The small "booth" is vented externally. The process is exempt per Rule 287(2)(c).

An aqueous washer (water & RP) Tank #974 is used for the application of Rustproof® 4200 (contains up to 20% monoethanolamine, CAS No. 141-43-5) to metal arbors. The tank is vented externally. The process is exempt per Rule 285(2)(l)(iii) for surface preparation of metals by aqueous solutions, except acid solutions.

A paint strip (RoPrepp & RP) Tank #975 is used for the application of REPREPP R SPECIAL (sodium hydroxide, ethyl alcohol) to metal arbors. The tank is vented externally. The process is exempt per Rule 285(2)(l)(iii) for surface preparation of metals by aqueous solutions, except acid solutions.

A Vapor Blast system (Rule 281(2)(c)) uses a water grit (quartz) slurry to blast clean parts on arbor collar trees is followed by Electroclean (Rule 281(2)(e)) Tank #208 which are rinse tanks with water, acid tank #210, and last a raise. The parts are ready for chrome plating after cleaning.

Other Plasma Coating
In addition to the two (2) permitted plasma spray coating processes, MAHLE has five (5) more plasma coating stations. Three (3) are conventional plasma coating stations that apply the metal coating using oxygen (O_2) and hydrogen (H). Two (2) HDAP plasma coating stations use O_2, H, and argon to apply the metal coating. The plasma coating applies chromium, nickel, and molybdenum powders to harden the parts. The grinding and plasma coating are controlled by a baghouse. On the west side of the facility beside a disconnected ammonia tank is the dust collector (blue jewel) that controls the plasma units (HDAP Plasma 1, Conventional Plasma #1 & #4). Conventional and HDAP plasma coating is exempt per Rule 285(2)(i) and the baghouses are exempt per Rule 285(2)(l)(vi)(C).

Newest Phosphate Coating Line
The phosphating line on PTI 394-94 has been replaced with a new phosphating line. The new line is capable of both zinc and manganese phosphating, but is still not fully operational . It is fully enclosed and automated. The line has programmable dip sequences for cleaning, phosphating, rust inhibitors and washing tanks. It has a total of nineteen (19) tanks with a drying oven tank. A central ventilation system with mist collector and drain goes to a vent stack that is vertical out the roof. Before installation of the new line, exemption Rule 290 was discussed with AQD staff. Records to show compliance with Rule 290(2)(a)(i) were created and showed that for the 2016 year 0.0017 lbs of phosphoric acid and 46.9 lbs of nitric acid were emitted. For the 2017 year, 0.0017 lbs of phosphoric acid and 46.9 lbs of nitric acid were emitted. For the 2018 year to date, 0.0011 lbs of phosphoric acid and 28.9 lbs of nitric acid were emitted. Emissions are well below the Rule 290 limits of 1,000 lbs/month for the year. Emissions are reported in MAERS under EU-ZINC-COAT.

Washers and Cleaning Processes
MAHLE has an aqueous washer exempt per Rule 285(2)(l)(iii). It has six (6) tanks - one (1) caustic, three (3) wash, one (1) rust proofing, a recirculation tank and tank dryer. There is no external exhaust.

There is a PVD sand blast with Torit filter with external exhaust vent #386 exempt per Rule 285(2)(l)(vi)(C). A PVD aqueous cleaner is exempt per Rule 285(2)(l)(iii).

Machining
B & K banks A, B, C, & D is a metal grinding operation with 24 machines (6 grinders per line). Each line is equipped with a Carter Day Dust collector. Two (2) dust collectors are then connected to a Hoffman blower for vacuum which is then exhausted outside to one of two (2) Hoffman Blowers. The stack is 13 feet tall. The blower is powered by a 100 HP, 3600 RPM, 3 phase/60 hertz/460 volts, T.E.F.C. AC Motor capable of handling 2,000 SCFM of influent air exhausts uncaptured particulates through a 10" stack at an exit point approximately 13 feet above the finish floor. The "STJ Air Permit Exemptions Inventory" lists this process as exempt under Rule 290. Monthly records are kept of the amount of material removed from the process per Rule 290(a)(ii)(A), for controlled emissions less than 500 lbs/month (1997 AACS). Controlled emissions are calculated at 1% of the dust weight since the dust collectors are assumed to be at least 99% efficient. Copies of the records from June 2016 to July 2018 were obtained. For February 2017, 6,818 lbs of dust was collected and 68.2 lbs is estimated as emitted based on the records. This process could probably be exempt under Rule 285(2)(l)(vi)(C).

Gas Nitriding System (GNS)
GNS started production around 2014. An electric nitriding tank furnace is used to treat (harden) metal parts. Ammonia and N_2 gas is injected under vacuum into the furnace. The furnace operates at approximately 400°F and is held for 9 hours. Then the gas is purged, and unreacted ammonia is treated in a 0.079 MMBtu/hr natural gas-fired afterburner which operates at 1350°C. Emissions from the afterburner are vented externally to the roof. The process is operating as exempt per Rule 282(2)(a)(i).

Beside the GNS is an electric tempering furnace for stress relief of metal parts. N_2 gas is injected into the furnace at atmospheric conditions and heated. The process is operating as exempt per Rule 282(2)(a)(i).

Former ARC Heat Treating Furnaces
MAHLE purchased ARC's three (3) CAM heat treating furnaces #512, #513, and #514 along a wall and two (2) heat treating furnaces all electric for treatment of metal parts. Treatment is done under atmospheric conditions and there is no oil quenching. All furnaces are vented externally and are operating as exempt per Rule 282(2)(a)(i).

Final Paint Operation
MAHLE paint application (located beside warehousing) for marking a strip on finished rings is done in an automated dry filter spray booth. Copies of the records from January 2016 to July 2018 were obtained. Less than 5 gallons per month of coating used is in compliance with Rule 287(2)(c) which allows 200 gallons per month. There is also a small manual coater with dry filter and a small dip tank for stripping (exempt per Rule 281(2)(h)) which are vented externally in the area. The coatings and chemicals used are Moly Dry 465, Tough-Rik 841, and 1-methyl 2- pyrrolidinone. Copies of the records from January 2016 to January 2018 were obtained. MAHLE uses about 20 to 30 gallons per year of coating in this area which is tracked daily. The coating processes are operating as exempt per Rule 287(2)(c).

Facility Dust Collectors
The external dust collectors includes the three (3) blue dust collectors on the north side of the facility and the blue jewel on the west side. Information on the dust collectors is attached. The blue dust collectors (#907, #908, #909, and #918) are Carter Day and control various plasma operations. Information on the dust collectors for the Tough RIK (now gone), sandblast, and B & K grinding machines is also included. Dust collector #908 has a short exhaust stack with a china cap. Dust collector #909 has a short exhaust stack. A new (installed summer of 2015) dust collector (#918?) has a short exhaust stack (below the roof line) and cap. The new dust collector sits beside an abandoned dust collector. No emissions were observed from any of the dust collector stacks.

An estimation of potential to emit (PTE) particulate (PM) from the dust collectors using Rule 331(1)(a) limits of 0.1 lb PM / 1000 lb of exhaust gas was done by AQD staff as part of the last inspection. At worse-case, PM PTE is estimated as less than 70 tons per year (tpy) from the facility.

Maintenance Shop
There is grinding, manual saws, cutters, routers, drill presses, and lathes in the maintenance areas. These processes are not vented to the ambient air and qualify for exemption per Rule 285(2)(l)(vi)(B). Manual welding with ventilation is in one room and is exempt per Rule 285(2)(i).

A three (3) sided, walk-in, manual spray paint booth is located beside the maintenance shop. Approximately up to 20 gallons per month is used to paint equipment in-house. Copies of the records from January 2016 to July 2018 were obtained. The maintenance paint booth is operated as exempt per Rule 287(2)(c).

Process Heat
High pressure steam for facility processes is provided by two (2) natural gas-fired boilers located in a separate room on the south side of the building. Boiler #1 is a Cleaver-Brook, horizontal tube, 5.23 MMBtu/hr with a manufacture date of 5/7/1965. This boiler is grandfathered. Boiler #2 is a Cleaver-Brook, horizontal tube, 8.375 MMBtu/hr with a manufacture date of 1968 which is exempt per Rule 282(2)(b)(i). The boilers exhaust out the roof, straight up. The boilers are not subject to any New Source Performance Standards (NSPS) or Boiler MACT (40 CFR 63, Subpart JJJJJJ).

At the time of inspection, both Boiler No. 1 and Boiler No. 2 were operating.

There are no emergency generators on-site.

Roof Stacks
All process stacks on the roof are approximately 33 feet. The building is approximately 18 feet tall, and the stacks are about 6 feet above the roof.

Records Review:
The following records were obtained and/or reviewed:
1. Safety Data Sheets for materials used in the chrome plating.
2. Exemption recordkeeping for:
- o Zinc Phosphate Coating
- o Tough RIK Coating
- o Plasma Operations (Conventional, HDAP, HVOF)
- o Final Paint

3. Operational records for:
- o Plasma operations (Conventional, HDAP, HVOF) and pressure drop readings
- o Chrome pressure drop readings (daily)
- o Final Paint
- o Zinc Phosphate Coating
- o Maintenance Paint (and any paint coating using Rule 287(2)(c))

Reporting:
Semi-annual ongoing Compliance Reports are required by PTI 2-08A, SC VII.1 and the Chrome NESHAP (40 CFR 63, Subpart N). No excess emissions and malfunctions were reported for the most recent report period of January 1, 2018 through June 30, 2018.

Summary:
The facility appeared to be in compliance with the applicable rules and regulations, and PTIs 351-83, 14-95, 384-08, 2-08A, and 166-12. All records are well maintained and up-to-date.

It is recommended that a facility-wide PTE be completed for all regulated pollutants including HAPs as this facility has a lot of equipment.

Voids for PTI 394-94 and PTI 110-93 for zinc phosphating lines, and PTI 100-12 for the anhydrous ammonia tank were requested and completed. The equipment is gone from the facility.

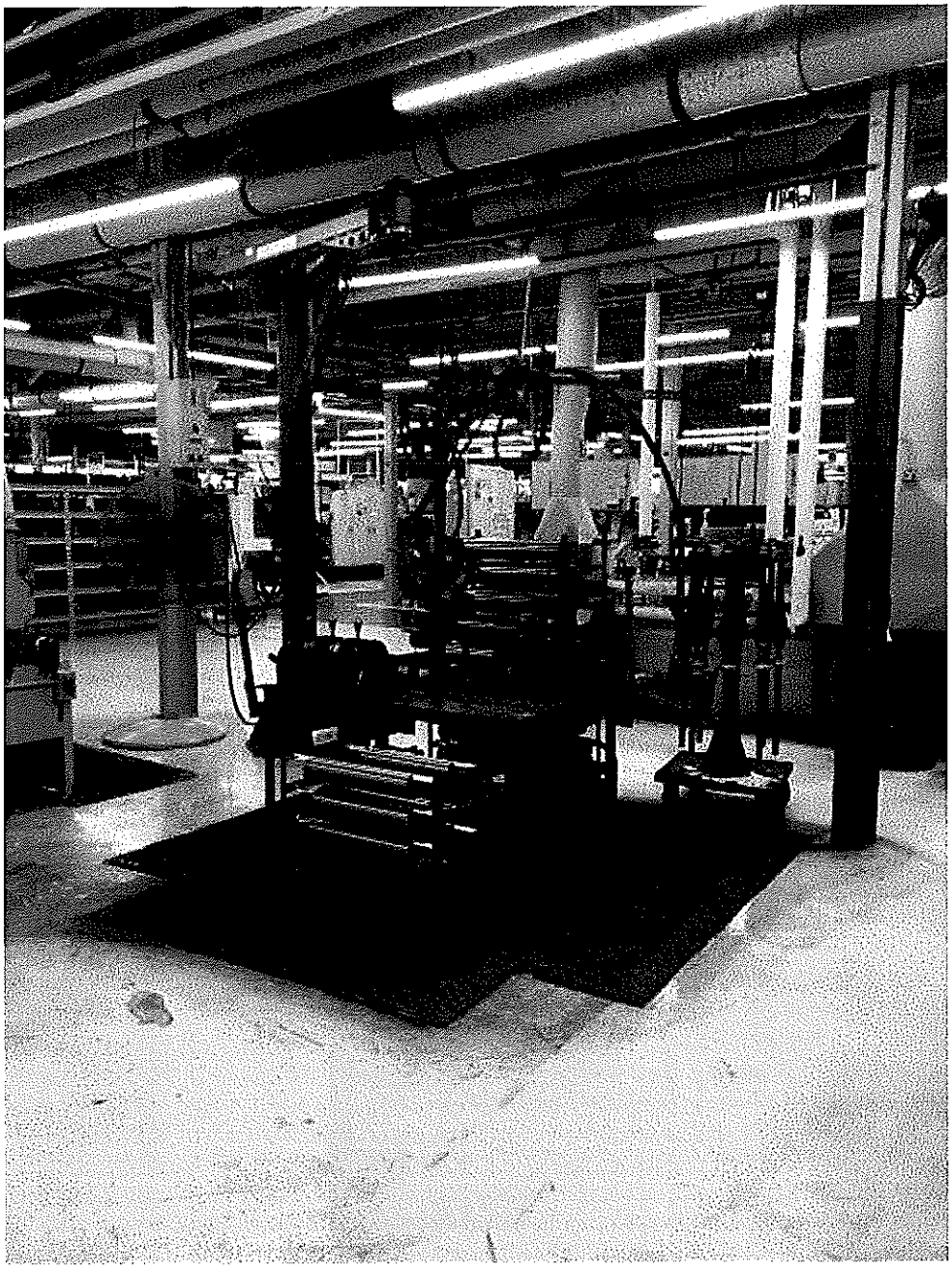

Image 1(1) : Arbor loading

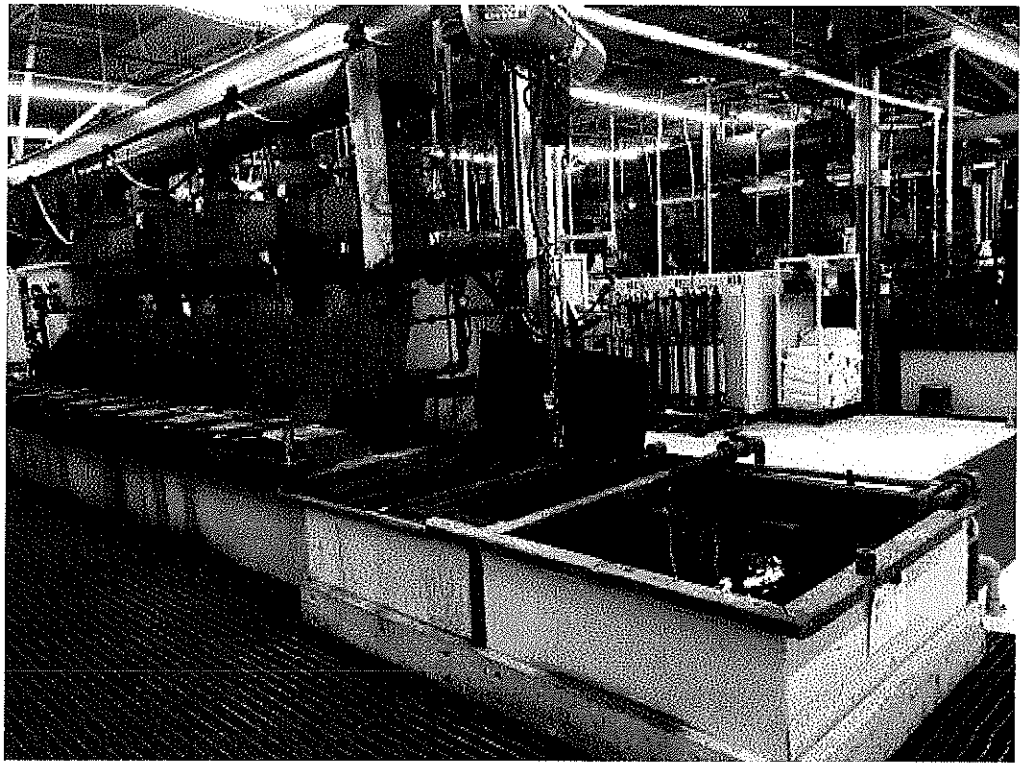

Image 2(4) : Chrome plating line #5

Image 3(9) : HEPA #2

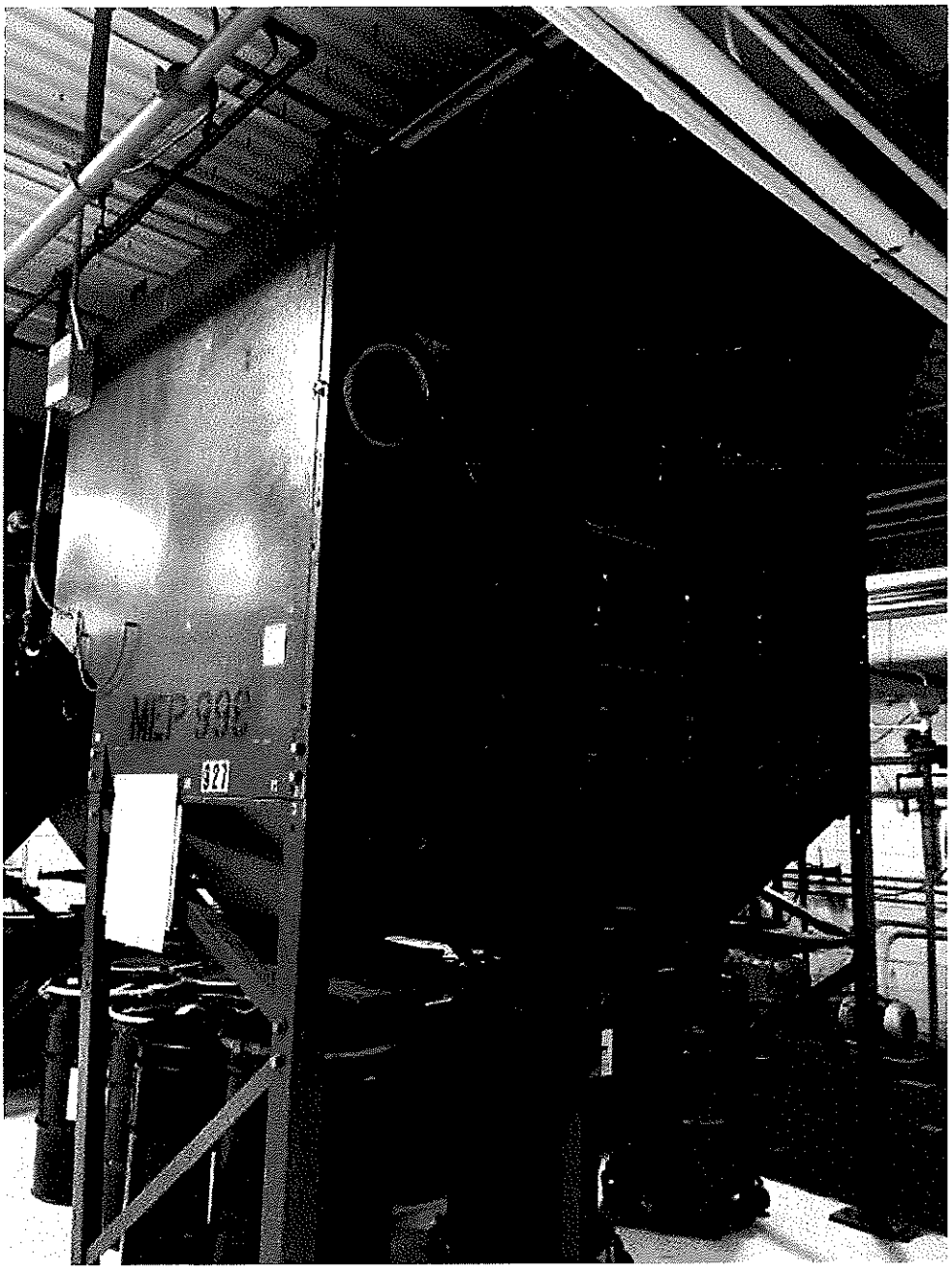

Image 4(10) : Baghouse for HVOC #2

Image 5(11) : Stacks for HEPA #1, HEPA #2, & HVOC #1

Image 6(13) : Removal of plated rings from Chrome plating line #1.

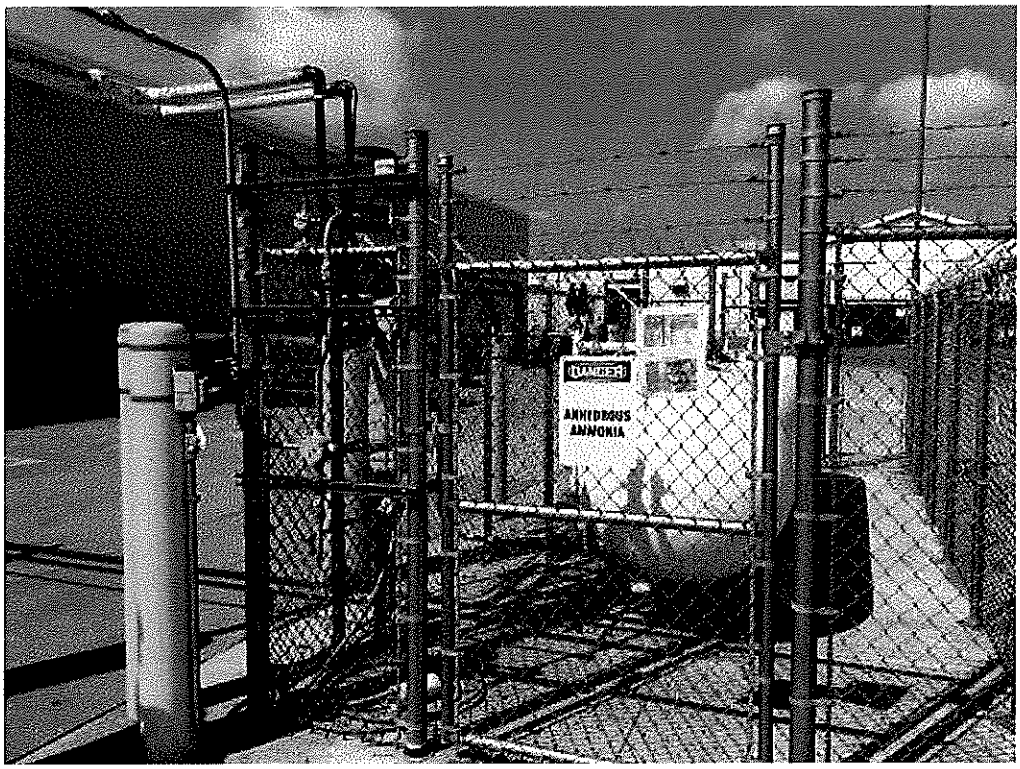

Image 7(25) : Ammonia tank

Image 8(26) : Small stripper in Final Paint.

Image 9(28) : Baghouses

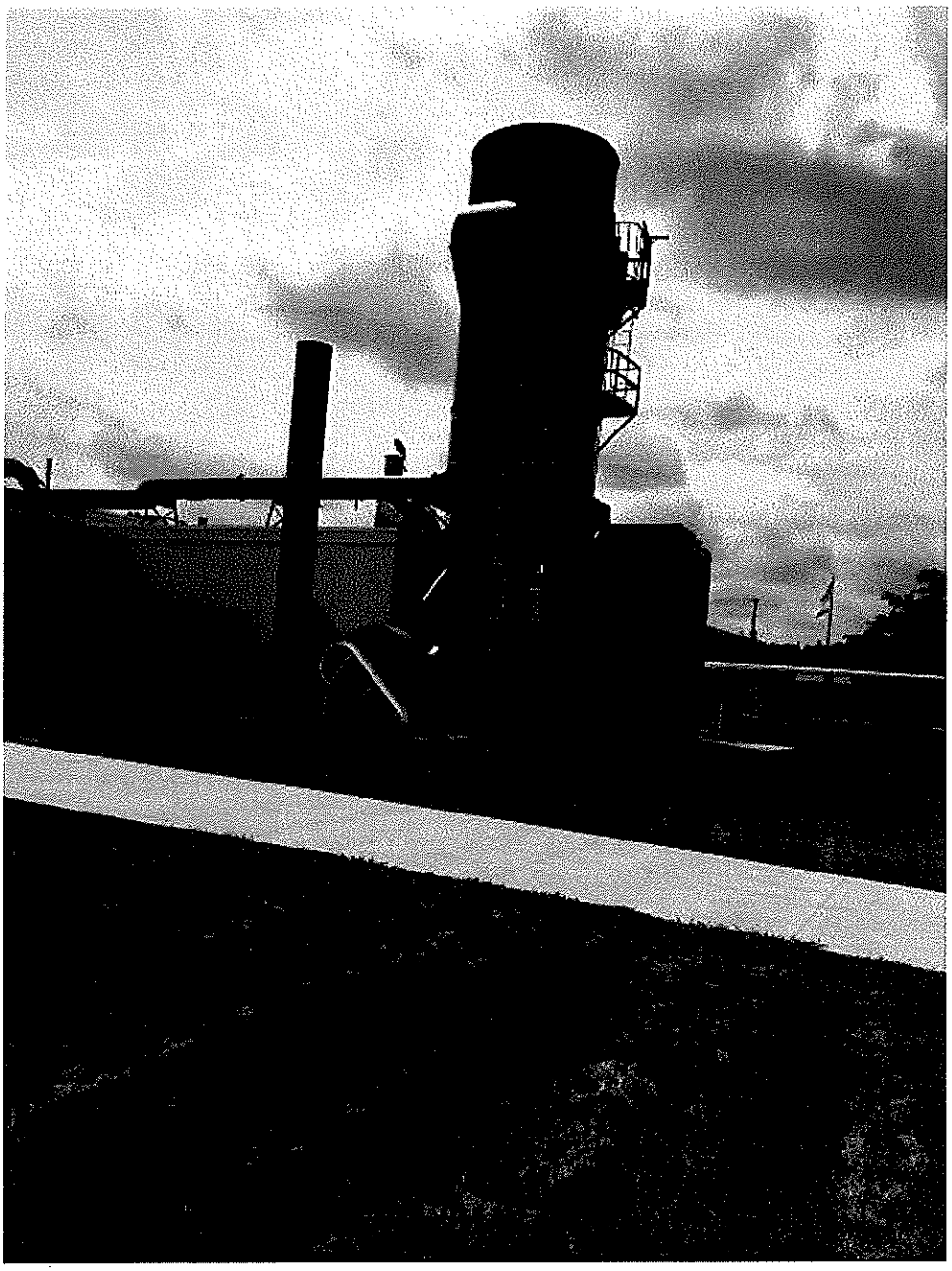

Image 10(30) : Blue Jewel baghouse

NAME Julie L. Brown DATE 9/21/18 SUPERVISOR B. M.