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

N170546862

FACILITY: Acument Global Technologies, Baldwin Operations		**SRN / ID:** N1705
LOCATION: 4146 E BALDWIN RD, HOLLY		**DISTRICT:** Lansing
CITY: HOLLY		**COUNTY:** GENESEE
CONTACT: Tasha Munson , EHS Manager		**ACTIVITY DATE:** 11/05/2018
STAFF: Daniel McGeen	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MINOR
SUBJECT: Scheduled inspection of facility which was last inspected in 2013.		
RESOLVED COMPLAINTS:		

On 11/5/2018, the Michigan Department of Environmental Quality (DEQ), which became the Michigan Department of Environment, Great Lakes, and Environment (EGLE), Air Quality Division (AQD) conducted an inspection of Acument Global Technologies, Baldwin Road Operations. This facility was last inspected by AQD's Lansing District Office (LDO) in 2013. However, in September 2018, AQD's Southeast Michigan (SEMI) District office inspected it, because it sits not far from the Oakland County Line. This led to some confusion over recordkeeping, which this inspection was intended to clear up.

Environmental contact:

Tasha Munson, EHS Manager; 810-220-9025; tmunson@acument.com

Facility description:

This facility manufactures metal bolts, and this process includes two steel hardening lines.

Emission units:

Emission Unit* ID	Emission Unit Description	Permit to Install (PTI) No., or Exemption Rule	Compliance Status
EU-Wastewater	Wastewater evaporation system with 1 MMBtu/hr burner.	1058-92A	Compliance
EU-Quench1	Heat treatment line including natural gas-fired hardening furnace, natural gas-fired tempering furnace, and quench oil bath.	1058-92A	Compliance
EU-Quench2	Heat treatment line including natural gas-fired hardening furnace, natural gas-fired tempering furnace, and quench oil bath.	1058-92A	Compliance
Metal machining	Miscellaneous metal machining processes which exhaust indoors	Rule 285(l)(vi)(B)	Compliance

*An *emission unit* is any part of a stationary source that emits or has the potential to emit an air contaminant.

Flexible group identification:

Flexible Group* ID	Emission Units Included in Flexible Group	Stack Identification
FG-Quench	EU-Quench1, EU-Quench2	NA

**A *flexible group* is used in a permit to install (PTI) or Renewable Operating Permit (ROP) to combine two or more emission units that have common or identical requirements.

Regulatory overview:

This facility is considered a *minor source* of *criteria pollutants*, that is, those pollutants for which a National Ambient Air Quality Standard (NAAQS) exist. These include carbon monoxide, nitrogen oxides, sulfur dioxide, volatile organic compounds (VCOs), lead, particulate matter smaller than 10 microns (PM10), and particulate matter smaller than 2.5 microns (PM2.5). A *major source* of criteria pollutants

has the potential to emit (PTE) of 100 tons per year (TPY) or more of any one of the criteria pollutants, and would be subject to the Renewable Operating Permit program.

This facility is also considered to be a minor or *area source* for hazardous air Pollutants (HAPs), because it has a PTE of less than 10 TPY for any single HAP and less than 25 TPY for all HAPs combined.

There are numerous metal machining processes in the plant, which exhaust to the general, in-plant atmosphere. These appear to have been installed prior to the 12/20/2016 revisions to the Michigan Air Pollution Control Rules for exemptions. By pre-dating 12/20/2016, they qualify for the Rule 285(l)(vi)(B) exemption, rather than the 285(2)(l)(vi)(B) exemption which became effective on 12/20/2016. The exemption criteria for metal machining processes are the same, however, and both versions exempt the following:

(l) The following equipment and any exhaust system or collector exclusively serving the equipment:
(vi) Equipment for carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planing, buffing, sand blast cleaning, shot blasting, shot peening, or polishing ceramic artwork, leather, metals, graphite, plastics, concrete, rubber, paper board, wood, wood products, stone, glass, fiberglass, or fabric which meets any of the following:
(A) Equipment used on a nonproduction basis.
(B) Equipment that has emissions that are released only into the general in-plant environment. (Emphasis added.)
(C) Equipment that has externally vented emissions controlled by an appropriately designed and operated fabric filter collector that, for all specified operations with metal, is preceded by a mechanical precleaner.

There are also one or more water-based parts washers which use soap, I have been informed. These could be considered exempt under more than one exemption, as follows:

Rule 281(2)(e) exempts:

(e) Equipment used for washing or drying materials, where the material itself cannot become an air contaminant, if no volatile organic compounds that have a vapor pressure greater than 0.1 millimeter of mercury at standard conditions are used in the process and no oil or solid fuel is burned.

Rule 281(2)(k) exempts:

(k) Aqueous based parts washers.

Rule 285(l)(iii) exempts:

(l) The following equipment and any exhaust system or collector exclusively serving the equipment:
(iii) Equipment for surface preparation of metals by use of aqueous solutions, except for acid solutions.

Rule 285(2)(r)(iv) exempts:

(r) Equipment used for any of the following metal treatment processes if the process emissions are only released into the general in-plant environment:
(iv) Cleaning.

On 8/17/ 2017, the environmental contact here, Ms. Tasha Munson, EHS Supervisor, had reached out to AQD, to discuss the proposed installation of a parts washer to replace an existing one, where the

existing one had not been reflected in the PTI, from all appearances. The replacement of the original water only parts washer with a larger unit using surfactant appeared to her to be exempt either under Rule 281(2)(e), or Rule 285(2)(c). I did not see any reason to disagree with the use of either exemption for the proposed change.

Rule 285(2)(c)(iii), exempts the following:

(c) Changes in a process or process equipment that do not involve installing, constructing, or reconstructing an emission unit and that involve a meaningful change in the quality and nature or a meaningful increase in the quantity of the emission of an air contaminant resulting from any of the following:
(iii) Changes in a process or process equipment to the extent that such changes do not alter the quality and nature, or increase the quantity, of the emission of the air contaminant beyond the level which has been described in and allowed by an approved permit to install, permit to operate, or order of the department.

The federal regulation 40 CFR Part 63, Subpart JJJJJJ—*National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources* was written for area sources of HAPs. To determine if it applies to this facility, I inquired as to the presence of any boilers onsite. There are no boilers, I was told, only residential-size hot water heaters. To meet the definition of a hot water heater in this area source Generally Achievable Control Technology (GACT) standard, the units must be no more than 120 gallons in capacity. Pursuant to Section 63.11195(f), because the units here are believed to be below 120 gallons, they are considered exempt from Subpart JJJJJJ.

Fee status:

This facility is not considered a Category I fee-subject facility, because it is not a major source of criteria air pollutants. It is not considered a category II fee-subject source because it is neither a major source for hazardous air pollutants, nor is it subject to a federal New Source Performance Standard regulation. Lastly, it is not considered a Category III fee-subject facility, because it is not subject to a federal Maximum Achievable Control Technology standard. This facility is not required to submit an annual air emissions report via the Michigan Air Emissions Reporting System (MAERS), because it does not meet the criteria for reporting of having more than 10 TPY VOC emissions, pursuant to AQD Operational Memorandum No. 13.

Safety apparel required:

Safety glasses with side shields, hearing protection, and oil-resistant, enclosed, leather or leather-like shoes.

History:

This site has previously operated as Ring Screw Works, and as SEMCO Fastener Division.

On 5/17/2013, this facility was inspected by the AQD Lansing District Office, or LDO. The facility was found to be in compliance. However, in September 2018, an inspector from the AQD Southeast Michigan or SEMI District office inspected it, because that office has files for it in their filing cabinets. This confusion appears to be, at least in part, because the plant is not far from the Oakland County line. However, it is actually in Genesee County.

When the inspector briefly reviewed the facility's recordkeeping, there was some confusion or misunderstanding that followed. The inspector, upon learning that the facility was in Genesee County, advised the AQD LDO of his concerns. Believing there was some misunderstanding that needed to be clarified, I put this facility on my list of inspections for the fiscal year beginning 10/1/2018.

Complaint history:

The only complaint record I could find in AQD files on this site was of a 2012 or 2013 complaint alleging unknown fallout. Upon investigation and sample collection by AQD's Brian Culham, however, the fallout sample collected was identified biological in origin. Under microscopic examination, the material was identified as consistent with known samples of bee droppings, i.e., bee feces. This finding resolved the alleged complaint.

Arrival:

The DEQ (now EGLE) was represented today not just by myself, but by two Student Interns, Ms. Hanin Masboob and Ms. Grace Kelbel, for educational purposes. This was not an unannounced inspection, because AQD guidance to me for taking interns in the field is to arrange the inspection in advance, so that there is an adequate number of supervisory staff at the facility, to safely escort the group through the plant.

We checked for odors offsite, prior to arrival. Weather conditions were mostly cloudy, about 51 degrees F, and winds out of the south southwest.. A distinct and definite odor of hot oil was briefly detected downwind of this and adjacent facilities along East Baldwin Road, but it could not be positively confirmed which facility the odor was from This odor was determined to be insufficient to constitute unreasonable interference with the comfortable enjoyment of life and property.

We arrived at approximately 9:15 AM. I could not see any visible emissions from the plant, nor could I detect any odors next to the plant.

We met with Ms. Tasha Munson, Environmental, Health & Safety Manager. She introduced us to Mr. Jim Oday, Plant Manager, Mr. Jim Vroman, Heat Treat Manager Supervisor, and Mr. Sherfy, EHS Supervisor.

Pre-inspection meeting:

We were given an overview of plant operations here. We were informed that the bolts made here are used by the automotive industry, among others. Some of the bolts made here are used in seat belt systems, and in transmissions. The bolt manufacturing process was explained to us, as follows: the bolt is first formed, and the head is created by metal machining processes. The bolt is then threaded by machine, is washed, and is heat-treated. We agreed to do the walk-through inspection of the plant first, and then discuss oil quench recordkeeping afterwards. The oil quench recordkeeping is where confusion had originated, during the September 2018 visit here, by a SEMI District Office AQD inspector.

Inspection:

As detailed in the 2013 inspection report by AQD's Brad Myott, the manufacturing process begins by running a coil of steel wire into a header machine that cuts the metal and forms into a bolt. This is not a heated operation, but cutting oils are used and heat is generated during the forming operation. The facility has several header machines. Following the forming process, bolts are threaded in the roller area. These are completely enclosed machines that do not generate air emissions. Metal machining is exempt from permitting per Rule 285(l). Depending on the part that is made it may be heat treated in one of the two heat treat lines in the plant. Each line is covered by the same permit and is part of FG-Quench. The furnaces operate using natural gas.

The heat treatment process begins with a pre-wash hot water bath prior to the part entering the hardening furnace where parts are subjected to a temperature of approx. 1650 degrees. Parts are then quenched in an oil bath and rinsed in a water wash station. The quench oil liquid level is monitored and refilled as necessary from an oil storage tank. Records of oil removed and oil added to the quench tanks are maintained on site. Following the quench tank the part then enters a tempering furnace where the parts will be heated to approximately 1200 degrees F. The tempering process increases ductility and relieves internal stresses within the metal parts. A rust inhibitor is applied to the parts following the draw furnace. The finished parts are collected in bins and shipped to customers.

Ms. Munson accompanied us on the inspection. We started out in receiving, where coils of steel wire

arrive. As we walked through the plant, I was unable to see visible emissions in the general in-plant atmosphere, whether of solid particulate or of liquid particulate (such as oil mists).

Metal machining processes; Rule 285(I)(vi)(B):

We observed a multi-station heading machine, where wire entered the process, was cut, and then had the head formed. There were multiple stations internal to this machine. It exhausted to the general, in-plant atmosphere, qualifying for the Rule 285(I)(vi)(B) exemption for a pre-12/20/2016 installed process. The Rule 285(2)(I)(vi)(B) exemption which became effective on 12/20/2016 has the exact same applicability criteria. I could not see any visible emissions from this process.

We were advised that cooling fluid is used for some of the metal machining done here, as smoke would be generated without the metal being cooled down. More baths were added to part stations last year, Ms. Munson informed us. I was not able to see any sort of smoke or mist of liquid droplets from the parts stations.

We were shown their lab area, and how it plays a role in the plant operations here.

We were also shown the roller area, where parts are married together, and are also threaded. Cutting oils are used. There are enclosed stations, we were shown, which physically cannot operate if the doors on the processes are open. I was not able to detect any visible emissions from the processes here.

FG-Quench; PTI No. 1058-92A:

We then observed the heat treat process. Ms. Munson explained that different parts are subjected to different temperatures, for the desired result. They have a 4,000 lb/hr furnace and a 3,000 lb/hr furnace. These are inline, continuous furnaces. Afterwards, parts drop into a submersible oil quench.

Quench oil is measured with a paddlewheel, we were told, and oil is added every 5-6 days. After parts are sprayed off, we were told that a separator separates water from quench oil. The water goes to a holding tank for further settling, we were told. It is my understanding that oil is recovered for recycling or disposal, and a decanter separates out the sludge or sediment at the bottom. I saw no visible emissions from the oil reclamation system.

EU-Wastewater, PTI No. 1058-92A:

There is a permitted Samsco water evaporator onsite, identified in the permit as EU-Wastewater. I was unable to see any fugitive emissions from the unit.

PTI No. 1058-92A, Special Condition (SC) EU-Wastewater 1.1specifies that the VOC content of all cleaning agent used in EU-Wastewater shall not exceed 10 percent by weight. This had led to some concern on the part of the AQD inspector from the SEMI DO, upon learning of mop wastewater being emptied into the unit. Ms. Munson clarified today that they do not directly add soap to the Samsco water evaporator. Mop bucket water, from mopping the plant floor, is emptied into the water evaporator, she explained, but the soap only makes up 6-8% of the mop water. In the heat treat area, we were advised soap only makes up 4% of the bucket water. The dilution of the soap in the mop bucket water would therefore not be expected to result in the mop wastewater containing over 10% VOC by weight. I agreed with Ms. Munson's assessment They appear to be in compliance with this condition.

Additionally, they are now using a new cleaning agent, Purple Dragon soap, for which Ms. Munson provided a Safety Data Sheet, please see attached. The VOC content is listed as "Not determined," but is believed to be 0, or very little.

PTI No. 1058-92A, Special Condition (SC) EU-Wastewater 1.2 limits the permittee to using more than 8,400 gallons of cleaning agent in EU-Wastewater per 12-month rolling time period. Ms. Munson advised that no cleaning agent is added directly into the unit, so they are far below the 8,400 gallon limit.

PTI No. 1058-92A, Special Condition (SC) EU-Wastewater 1.3 requires records of the following:

a. Gallons of cleaning agent used. ***1,980 gallons were used, we were advised.***

b. VOC content, in percent by weight: ***The VOC content is 0 or very little, we were advised, per the Purple Dragon SDS.***

Recordkeeping:

After the walk-through inspection of the plant, we reviewed facility recordkeeping for quench oil usage. This was what had caused some confusion when inspector Adam Bognar of the SEMI DO was here in September 2018. We were provided a copy of the oil quench recordkeeping going as far back as November 2003. Please see attached spreadsheets.

Compliance with the PTI No. 1058-92A was checked, below.

PTI No. 1058-92A, SC FG-Quench 2.1a limits particulate mater emissions to 8.7 TPY. ***In recent months with the highest calculated PM value, 11,341.19 lbs in March, April, May, and June of 2017, the 8.7 TPY emission limit for FG-Quench was not exceeded.***

PTI No. 1058-92A, SC FG-Quench 2.1b limits particulate mater emissions to 0.1 lb/1,000 lbs exhaust gases. ***Stack testing would be required in order to determine compliance with this limit. However, based upon the lack of visible emissions from the plant, a stack test to verify compliance is not warranted at this time.***

PTI No. 1058-92A, SC FG-Quench 2.3 requires recordkeeping, as follows:

a. Net usage, in gallons of quench oil: ***This is documented in the spreadsheets.***

b. The particulate emission rate using a material balance: ***This is calculated in the spreadsheets, using the standard AQD calculation and table found in air permits involving oil-quenching. The calculations appeared to be done properly.***

c. The hours of operation: ***Hours of operation for both furnaces were being tracked on a monthly and yearly basis.***

The chief concern of AQD inspector Adam Bognar ,from his September 2018 visit here, had been that some months in the quench oil recordkeeping had emissions of 0 lbs of particulate calculated for them. This was logically unrealistic, and resulted in his concern that recordkeeping was being done improperly.

We reviewed the records, and discussed how the preventative maintenance activities here involve the removal of oil, decant, and sludge, and the addition of new oil. Decant is described as sludge and oil together. Column #5 of the spreadsheet documents oil removed from the process, I was advised. Column #6 documents new oil added to the quench tanks. Column #7 represents decant(sludge and oil removed), but half of it is discarded and half is reused, so it is literally half of column #5.

We were told that when parts are in the heat treatment line, quench oil level rises, plus hot temperatures cause the oil to expand., making it difficult to get an exact measurement that can be duplicated each time.

It appeared to me that 12-month rolling totals where there were 0 lbs of particulate emissions documented were essentially an artifact of the spreadsheet, because the company appeared to be doing their emission calculations in essentially the same manner as companies with quench oil calculation tables as part of their air use permits. The only difference that I was aware of was that Ms. Munson had

tweaked their calculations because the original formula seemed to her to underestimate emissions.

Ms. Munson and I felt that some months where higher emissions were calculated were also an artifact of the spreadsheet, and that in reality, emissions would be more evenly distributed amongst all the months of the year. It appears inevitable that some months may appear to be unrealistically high, for PM emissions while other months will appear to be unrealistically low for PM emissions. However, even in months with the highest calculated PM value, 11,341.19 lbs in March, April, May, and June of 2017, the 8.7 TPY emission limit for FG-Quench was not exceeded.

I felt this adequately explained why some months appeared to have unrealistically low emissions () emissions), while other months were unrealistically high. I brought a long a copy of a quench oil recordkeeping form from a current AQD heat treating permit, and Acument's recordkeeping system appeared to contain the same inputs and to involve the same calculation process.

Conclusion:

No instances of noncompliance were found. The spreadsheet and formula used by the company in calculation of quench oil usage and particulate emissions appears to be quite consistent with the calculations in the latest AQD PTIs issued for heat treating processes involving quench oil. The facility was clean and neat, and appeared to be in compliance with their PTI No. 1058-92A.. The inspection here provided an excellent educational opportunity for our two Student Interns.

NAME _____ DATE 9/30/2019 SUPERVISOR B.M.