

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

B435046787

FACILITY: ASTECH INC		SRN / ID: B4350
LOCATION: 5512 SCOTCH RD, VASSAR		DISTRICT: Saginaw Bay
CITY: VASSAR		COUNTY: TUSCOLA
CONTACT: Mark Swanson , Quality Assurance Manager		ACTIVITY DATE: 08/21/2018
STAFF: Matthew Karl	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Self Initiated Inspection to determine compliance with PTI Nos. 503-80, 504-80, 521-94, 3-13, and 40 CFR 63 Subpart ZZZZZ		
RESOLVED COMPLAINTS:		

On Tuesday (8/21/18) I (Matt Karl) conducted a self-initiated compliance inspection at Alloy Steel Technologies, Inc (ASTECH, Inc.) located at 5512 Scotch Road, Vassar, Michigan 48768. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) Administrative Rules; Permit-to-Install (PTI) Nos. 503-80, 504-80, 521-94 and 3-13. Mr. Mark Swanson, Quality Assurance Manager, assisted me during the inspection.

Background:

Astech Inc. currently employs approximately 30 personnel. Astech Inc. specializes in manufacturing shot blast replacement parts for blast machine original equipment manufacturers (OEM) including Pangborn, BCP, DISA, Banfi, Wheelabrator and others. Astech Inc. also services the power generation and general casting markets, casting a variety of horizontal directional drilling (HDD) bits. Alloys produced at this facility include gray iron, steel alloys, high chrome iron, manganese, nickel-based alloys and superalloys. Astech Inc. can fill approximately 600-piece orders and cast 20-40 castings. The facility operates two cast lines, one uses green sand and the other is a no-bake cast line. There are four induction furnaces onsite, one (1) 2000 lb. and three (3) 1000 lb. capacity furnaces. There are several heat treat ovens and water quench cooling systems. There are several shot blast machines, welding/cutting and grinding activities performed onsite. There has been no new production equipment added since the last air quality scheduled inspection (7/21/16), but Astech Inc. has added new pre-production and QA/QC scientific equipment, including two (2) 20x20x20" 3D printers for designing cast molds and two (2) spectrometers for testing alloy composition.

Permit Review:

PTI No. 503-80 covers a swing grinder and abrasive wheel cutoff saw. Particulate emissions are controlled using a cyclone dust collector followed by a baghouse from a blast machine and two grinding areas. Another baghouse controls emissions from two blast machines. A third baghouse controls emissions from sawing and welding activities. The south grinding area is also routed to the baghouse. The permit contains a visible emission limit of 20% opacity while operating these emission units. During my inspection there were no visible emissions observed from the equipment.

PTI No. 504-80 covers a vibrating shake-out machine. The process entails vibrating sand and castings received from the foundry mold dump conveyor. The vibrating shake-out deck is perforated so that sand falls through the deck to a sand conveyor. At the end of the shake-out deck, a hood at the shake-out machine captures the exhaust as the sand is separated from the hot casting. Particulate emissions are controlled using a baghouse. The permit contains a visible emission limit of 20% opacity while operating the emission unit. During my inspection there was no visible emissions observed from the equipment.

PTI No. 521-94 covers the no-bake molding process and sand mixer. The site heats and mixes sand used for molds. A silo receives sand from trucks. The silo has a bin vent filter to control fines. The sand is heated in a fluidized bed by a water boiler. Emissions are controlled by a baghouse. The sand is mixed with resins and used to form no-bake molds that are filled with melted metal. The no-bake molding line is serviced by a baghouse. The permit contains a visible emission limit of 0% opacity. During my inspection there were no visible emissions observed from the equipment. This PTI also requires records of monthly usage rates of resin and acid catalyst. I was provided with the safety data sheets (SDS) for the resin and catalyst and a copy of the electronic spreadsheet used to track the resin and catalyst usage. Upon review, the records I received during my Tuesday (8/21/18) inspection were insufficient to determine compliance. I requested additional information from Mark Swanson on Tuesday (9/4/18).

On Thursday (9/20/18) Mark Swanson replied via email and stated that Astech, Inc. was reviewing the spreadsheet and the method that they were using to track resin and catalyst usage. Mark Swanson mentioned that the No-Bake core machine has the ability to track the number of minutes that it dispenses sand, which allows Astech, Inc. to track the amount of resin and catalyst used in each mold. The PepSet core machine currently doesn't have the same monitoring equipment. Mark Swanson stated that Astech, Inc. was working on a solution for the PepSet core machine.

On Tuesday (10/9/18) Mark Swanson sent me an email with resin and catalyst usage from the No-Bake core machine from 9/7/2018-10/5/2018. He informed me that they had just installed the equipment necessary to track resin catalyst usage on the PepSet core machine, and that he would send me more data once they had collected records for a few weeks.

On Friday (10/16/18) I received a copy of Total HAP Emission Factors for Preliminary Screening Analysis – Iron Foundries Complied by the AFS Air Quality Committee and MACT Task Force (Rev. 10/08/01). I used the emission factors from this document and compared them with the resin and catalyst usage and melt production to determine Total HAPs emissions. Based on my calculations, it appears the HAPs emissions are well below major source thresholds.

On Monday (10/29/18) Mark Swanson sent me an email confirming Astech, Inc. had installed the equipment necessary to track the resin and catalyst usage from the PepSet core machine, and provided me with data on the resin and catalyst usage and melt production for that line from 10/17/2018-10/24/2018. Using this information, and the HAPs emissions factors noted above, it appears the HAPs emissions are well below major source thresholds (projected to be less than ~1,500 lbs/year Total HAPs).

PTI No. 3-13 covers the induction furnaces that provide melted metal that is transferred to large ladles and then poured into the sand molds. The emissions from the melt and pour area are exhausted into the in-plant environment with some capture from an exhaust system directed to the baghouse that also serves the shake-out process. The electric induction furnaces themselves are not tied to a baghouse (are uncontrolled), as confirmed by Mark Swanson via email on Thursday (10/18/18). PTI No. 3-13 has no emission limits but requires compliance with 40 CFR 63 Subpart ZZZZZ – National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources. The site is required to maintain records of metal melted. Mark Swanson emailed metal melting records for the 2018 year to date on Wednesday (9/5/18). The melt totals for the year are based on the weekly pour records. The metal melt production from January through August 2018 has been approximately 731 tons. The facility averages melt production of approximately 21 tons a month. The facility meets the definition of a "small foundry." The metallic scrap pollution prevention management practices required are met by obtaining certifications of clean scrap and purchasing contract requirements for "no dirty scrap". The site does not accept post-consumer motor vehicle scrap and receives no mercury containing scrap. In addition, the site has certified in their semi-annual notification of compliance status that the scrap does not contain motor vehicle scrap. The semi-annual notification of compliance is up to date.

In conclusion, at the time of my inspection, Astech, Inc. appeared to be in compliance with PTI Nos. 503-80, 504-80, 521-94, 3-13, and 40 CFR 63 Subpart ZZZZZ – National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources.

NAME Matthew R. Karch

DATE 10-29-2018 SUPERVISOR C. Hare