

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

N737934727

FACILITY: ATMOSPHERE HEAT TREATING INC.		SRN / ID: N7379
LOCATION: 30760 CENTURY DR., WIXOM		DISTRICT: Southeast Michigan
CITY: WIXOM		COUNTY: OAKLAND
CONTACT: Wallace "Skip" James, Facilities Manager		ACTIVITY DATE: 04/27/2016
STAFF: Samuel Liveson	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Self-initiated inspection of a minor facility.		
RESOLVED COMPLAINTS:		

On April 27, 2016, I conducted an unannounced, self-initiated, level 2 inspection of Atmosphere Heat Treating, Inc. (Atmosphere), located at 30760 Century Drive in Wixom, Michigan. The purpose of this inspection was to determine the facility's compliance with the federal Clean Air Act, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the conditions of Permit to Install (PTI) No. 174-04A.

I arrived on site around 1:20 PM. I met with Mr. Wallace ("Skip") James, Facilities Manager. Mr. James provided records and a walkthrough of the facility. I provided Mr. James with my contact information and a copy of the pamphlet "DEQ Environmental Inspections: Rights and Responsibilities."

Opening Meeting

Atmosphere provides heat treating services for the automotive and defense industries. Examples of parts to be heat-treated are clips and seat-belt parts. The company typically operates 24 hours a day, 7 days a week, and has about 22 employees.

Facility Walk-Through

The facility has three natural-gas fired heat treating furnaces with an associated salt quench tank for each. Heat treat furnace EUHARDENING3 has associated natural-gas fired tempering furnace EUTEMPERING3. PTI No. 174-04A permits the three heat treat furnaces and the tempering furnace, as well as associated salt quench dip tanks. These four furnaces have a heat-input value between 3.5 and 4 million British thermal units per hour (MMBTU/hr) according to the facility permit application.

Hardening furnances were operating during the facility inspection. According to Mr. James, the temperature for hardening is approximately 1650 °F. Parts traveling through EUHARDENING3 may also travel through EUTEMPERING3, the single facility tempering furnace, depending on client specifications. This tempering furnace operates between 300 and 1200 °F.

The salts used in quench tanks are sodium nitrite and potassium nitrate. These allow the quench tanks to attain a temperature between 600 and 700 °F. Sodium nitrite is considered a rust inhibitor. Material safety datasheets for these salts are available in the Air Quality manila file for the facility. According to Mr. James, each molten quench salt tank has a capacity of 235,000 lbs salt. The facility performs maintenance once per year where salt that has hardened onto the tanks is removed. After traveling through the molten salt quench tanks, parts are washed a series of parts washers which have water and some sodium nitrite as a

rust inhibitor. The facility has two tanks with covers to boil off water to reclaim salt.

Along the molten salt quench tanks are salt molds of cooler, hardened salt. These salt molds can be stored and moved between quench tanks.

The facility has three endothermic gas production units. Two operate at any one time and provide enough gas for the three heat treat lines. The gas production unit provides endothermic gas used on the interior of the heat treat furnace to product parts. The gas is 40% hydrogen, 40% nitrogen and 20% carbon monoxide. Each endothermic gas production unit has a heat input capacity of about 900,000 BTU/hr. The units have nickel catalyst tubes and operate at 1950 °F. The units appear to be exempt from obtaining a Permit-to-Install per R 282(b)(i).

The facility has one cold cleaner on site. The lid was closed and operating instructions were posted conspicuously. The solvent used is crystal clean. Its MSDS is available in the Air Quality facility manila file. The cold cleaner appears to be exempt from obtaining a Permit-to-Install per R 281(h).

Recordkeeping

Mr. James provided facility records on April 28, 2016 for January of 2015 through April of 2016 per PTI No. 174-04A Special Condition (S.C.) VI.1. The highest salt usage is 7,475 lbs quench salt over a 12-month rolling time period in March of 2016. This is below the facility limit of 45,000 lbs quench salt over a 12-month rolling time period per S.C. II.1.

Particulate emissions from quench salt are estimated based upon emission factors in the facility recordkeeping spreadsheet. Salt usage is based upon salt added to the quench tanks. From salt usage, Mr. James subtracts a percentage of salt as salt collected during a tank cleaning, spills, and salt lost as drag out from quench tank and rust inhibitor coating on parts. The remaining pounds of salt are considered particulate emissions. The highest particulate emissions are 0.24 tons PM per 12 month rolling time period in March of 2016. This is below the facility limit of 3 tons PM per 12 month rolling time period per S.C. I.1.

Compliance

Based on the AQD inspection and records review, it appears that Atmosphere is in compliance with the federal Clean Air Act, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the conditions of PTI No. 174-04A.

NAME



DATE

5/31/16

SUPERVISOR

CJE