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

M432341559

FACILITY: METROPOLITAN ALLOYS CORP		SRN / ID: M4323
LOCATION: 13600 GIRARDIN, DETROIT		DISTRICT: Detroit
CITY: DETROIT		COUNTY: WAYNE
CONTACT: Chuck Kennedy , Plant Manager		ACTIVITY DATE: 09/20/2017
STAFF: Jorge Acevedo	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT:		
RESOLVED COMPLAINTS:		

REASON FOR INSPECTION: Scheduled Inspection

INSPECTED BY: Jorge Acevedo, AQD

PERSONNEL PRESENT: Chuck Kennedy, Plant Manager

FACILITY PHONE NUMBER: (313) 365-4455

FACILITY WEBSITE: NA

### FACILITY BACKGROUND

MAC Castings Incorporated is a primary smelter, manufacturing Zinc anodes for its customers. MAC Castings utilizes two (2) 500 kilowatt channel induction and holding furnaces; with a holding capacity of 260,000 lbs, with an average production of 345,000 lbs/day. In addition there is a 305 hp diesel fuel-fired reciprocating engine generator used for emergency power.

### PROCESS OVERVIEW

High quality (pure) zinc and clean charge is melted in the two electric furnaces (FGFURNACES). The molten zinc is then poured into casting of various shapes and sizes per customer specifications. The main products are used in electrogalvanizing. Electrogalvanizing is a process in which a layer of zinc is bonded to steel in order to protect against corrosion. T

MAC Castings utilizes two (2) identical 500 kilowatt channel induction and holding furnaces (EU-1 and EU-2); with a holding capacity of 130,000 lbs each for a total of 260,000 lbs with an average daily production of 345,000 lbs.

The main material used for charging is restricted to Special High Grade (SHG) Strip Jumbos and SHG V-100 purchased directly from the zinc manufacturer.

No flux is used and all dross material is sold to an outside source.

There is no control device employed and there were no visible emissions at the time of this inspection. Based upon the required use of clean high grade material, it is expected that emissions are low.

In addition there is a 305 hp diesel fuel-fired reciprocating engine generator (EU-3) used for emergency

power generation in case of a utility power outage. It is used occasionally to insure it's operable in the event of a power failure. It is primarily to provide enough electricity so that the temperatures of the molten metal can be maintained long enough to empty the furnaces, not enough electrical power to maintain production.

## COMPLAINT/COMPLIANCE HISTORY

There are no citizen complaints for this facility on file. The most recent inspection was conducted during September 18, 2015 by the Air Quality Division. At that time it was determined that the facility was operating in compliance with applicable regulations.

## OUTSTANDING CONSENT ORDERS

None

## OUTSTANDING VIOLATION NOTICES

None

## INSPECTION NARRATIVE

On September 20, 2017, the Michigan Department of Environmental Quality (MDEQ), the Air Quality Division (AQD) inspector, Mr. Jorge Acevedo conducted a scheduled inspection of MAC Casting at 13600 Girardin, Detroit, Michigan.

I arrived at the facility at 2:35PM. I entered the facility and met with Chuck Kennedy, plant manager. I explained to Mr. Kennedy the purpose of my visit. I asked Mr. Kennedy if there had been any changes to the facility since the last inspection and Mr. Kennedy replied that there had not been any changes. He mentioned that work was scattered and was dependent on demand. The facility was not operating everyday. Mr. Kennedy showed me both the furnaces and they were operating at the time of the inspection. Mr. Kennedy explained that there is no smoke related to the melting because the facility melts nearly pure (99.999%) zinc. The facility does not use flux because they are melting pure zinc. After observing the furnaces, I went into the part of the facility that housed the emergency generator. The model of the Generator was a Caterpillar 3300 with a rating of 250 KVA. I inspected the hour meter and it read 194 hours. After observing the generator, I went into Mr. Kennedy's office. I requested records which are required by the permit and he handed them to me. I looked at the records log for the generator and it read that the hours meter was at 193.7 hours in September 2015 which indicates the generator is not used often. After receiving the records from Mr. Kennedy, I left the facility at 3:00PM.

## APPLICABLE RULES/PERMIT CONDITIONS

Compliance with PTI 50-09 is described below:

The following conditions apply to: EU-3

**I. EMISSION LIMITS**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Compliance Determination.
1. NOx	9.5 pph	Test Method	EU-3	Compliance- Testing not required at this time.

**II. MATERIAL LIMIT(S)**

1. The permittee shall burn only diesel fuel in EU-3. (R 336.1224, R 336.1225)

Compliance- Generator can only be fired using diesel fuel.

2. The permittee shall burn only diesel fuel with a maximum sulfur content of 15 ppm in EU-3. (R 336.1205 (1) (a), R 336.1224, R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21 (c) and (d))

Compliance- MSDS of diesel indicates a sulfur limit of 15 ppm.

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The permittee shall operate EU-3 in accordance with its manufacturer's written instructions or by operating procedures developed by the permittee that are approved by the manufacturer. (R 336.1912)

Compliance- Facility is maintaining generator.

2. The permittee shall not operate EU-3 for more than 500 hours per engine per 12-month rolling time period as determined at the end of each calendar month. Of these 500 hours, the permittee shall not exceed 100 hours for maintenance checks and readiness testing. (R 336.1205(1)(a), R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21 (c) and (d))

Compliance- Usage is less than a hour in a two year period.

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

NA

## **V. TESTING/SAMPLING**

1. Verification of the NO<sub>x</sub> emission limit (9.5 pounds NO<sub>x</sub> per hour) from EU-3, by testing at owner's expense, in accordance with Department requirements may be required. If required, testing must be done at a load(s) as approved by the AQD. No less than 60 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of the emission factor includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. (R 336.2803, R 336.2804, 40 CFR 52.21 (c) and (d), R 336.2001, R 336.2003, R 336.2004)

Compliance- Testing is not required at this time. Usage of the generator does not warrant request for testing.

## **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years.

1. The permittee shall equip EU-3 with a non-resettable hour meter to track the number of operating hours. (R 336.1205(1)(a), R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21 (c) and (d))

Compliance- Hour Meter was observed and records are kept monthly.

2. The permittee shall monitor the hours of operation of EU-3 and the reason it was in operation during that time on a monthly basis in a manner that is acceptable to the District Supervisor, Air Quality Division. (R 336.1205(1)(a) and (3))

Compliance- Records of usage of the generator are kept monthly.

3. The permittee shall monitor in a satisfactory manner the fuel oil usage for EU-3 on a monthly basis in a manner that is acceptable to the District Supervisor, Air Quality Division. (R 336.1205(1)(a) and (3))

Compliance- Records of usage of the generator are kept monthly.

## **VII. REPORTING**

The permittee shall keep a complete copy of the diesel fuel/No. 2 fuel oil analysis including the sulfur content in percent, as supplied by the vendor, for each shipment of diesel fuel/No. 2 fuel oil received. All records shall be kept on file for a period of at least five years and made available to the Department upon request. (R 336.1205(3), R 336.1402, R 336.2803, R 336.2804, 40 CFR 52.21 (c) and (d))

Compliance- Records of shipments of fuel and MSDS are kept at the facility.

2. The permittee shall keep, in a satisfactory manner, records of the date, duration, and description of any malfunction, any maintenance performed and any testing results for EU-3. All records shall be kept on file for a period of at least five years and made available to the Department upon request. (R 336.1912)

Compliance- Records are kept regarding maintenance.

3. The permittee shall keep, in a satisfactory manner, monthly and 12-month rolling time period operating hour records for EU-3. The records must also include the total operating time in hours for EU-3. All records shall be kept on file for a period of at least five years and made available to the Department upon request. (R 336.1205(1)(a), R 336.1224, R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, 40 CFR 52.21(c) & (d))

Compliance- Records are kept monthly.

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

The following conditions apply to: FGFURNACES

DESCRIPTION: The zinc casting process equipped with two electric furnaces. Only pure zinc is used in the process and no flux material is charge to the furnaces.

Emission Units: EU-1 and EU-2

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

1. The permittee shall melt only pure zinc or clean charge, customer returns, or internal scrap. This condition is necessary to avoid requirements of 40 CFR Part 63 Subpart RRR, National Emission Standards for Secondary Nonferrous Metals Processing Industry. (R 336.1224 and R 336.1225, 40 CFR Part 63 Subpart TTTT)

Compliance- Facility uses only pure zinc.

III. PROCESS/OPERATIONAL RESTRICTIONS

The permittee shall not charge fluxing material into FGFURNACES. (R 336.1224, R 336.1225)

Compliance-- The facility does not use flux as only clean zinc is melted in the furnace.

**APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:**

Not applicable. Fugitive dust was not observed to be a problem during the inspection.

**MAERS REPORT REVIEW:**

Not applicable. The facility is not required to submit Michigan Air Emissions Reporting System (MAERS).

**FINAL COMPLIANCE DETERMINATION:**

At this time, this facility is operating in compliance with PTI 50-09 and other applicable requirements.

NAME



DATE

9-28-17

SUPERVISOR

W.M.