

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

N247330141

<b>FACILITY:</b> Gerdau Lansing Mt. Hope Facility	<b>SRN / ID:</b> N2473
<b>LOCATION:</b> 209-1 W MT HOPE RD, LANSING	<b>DISTRICT:</b> Lansing
<b>CITY:</b> LANSING	<b>COUNTY:</b> INGHAM
<b>CONTACT:</b> Dale Feldkamp , Corporate Maintenance Manager & Environmental Cont	<b>ACTIVITY DATE:</b> 07/09/2015
<b>STAFF:</b> Nathaniel Hude	<b>COMPLIANCE STATUS:</b> Compliance
<b>SOURCE CLASS:</b> SM OPT OUT	
<b>SUBJECT:</b> Unannounced / Initial Contact inspection. Permit 289-98A was issued March 26, 2015 due to the recession of rule 208A. Company had not completed permit App. A- Monthly VOC tallies. Gave until July 16 to submit. Appendix A data was received on 7/16/15	
<b>RESOLVED COMPLAINTS:</b>	

**Inspection Report**

N2473- Gerdau, MT Hope Facility  
209-1 W. Mt Hope Rd, Lansing, Michigan

**Inspection Date:**

7/9/15

**Facility Contacts:**

Dale Feldkamp- Corporate Maintenance Manager and Enviro Contact, 517-485-5090 ext. 1240,  
[dale.feldkamp@gerdau.com](mailto:dale.feldkamp@gerdau.com)

**MDEQ AQD Personnel:**

Nathan Hude – 517-284-6779, [HUDEN@michigan.gov](mailto:HUDEN@michigan.gov)

**Facility Description:**

Air use Permit to Install #489-98A was issue to Gerdau due to the recession of rule 208A within the last year. This is an opt-out permit with material restrictions to limit VOC and PM2.5. There is no control on the quenching furnaces or for VOCs. There is cartridge filter baghouse on all 4 shot blast machines.

The site is located in downtown Lansing near the corner of Mt Hope and Washington. On the south west corner of Mt Hope and Washington, the area is primarily industrious, yet on the north side of Mt Hope directly across from the facility, the area is residential.

Atmosphere Annealing was part of MacSteel, which has been purchased by Gerdau. The company offers their customers a variety of heat treating options for metal parts including hardening, annealing, and tempering. Several quenching options are available for the hardening treatments. Shot blasting may be required to remove scale from some parts after treatment. The majority of the parts treated are automotive components, yet some tank treads are hardened for military and commercial applications. Only about 10% of the parts are from other Gerdau sites; a majority of the parts are shipped to the site from other manufacturers for treatment.

Air emissions are primarily generated from the combustion of natural gas in the heat treat furnaces, from oil mist by quenching processes, or from carry out oil combusting in the furnaces, and from a rust preventative dip using Rust Veto 4242.

The site operates 24/7 or less depending on customer demand and has approx. 84 employees working at the Mt Hope facility. They process approx. 10 million lbs. of steel per month with parts weighing 0.5 lbs. to 150 lbs.

**Applicable Regulations:**

1. MI-PTI-289-98A
2. MI Rule Exemptions 282(a)(i) and 285(l)(VI)(B)

**Previous Inspections:**

10/24/2014- Brian Culham, no violations noted  
01/06/2012- Brian Culham, no violations noted  
03/16/2010- Michael McClellan, no violations noted  
6/03/2009- Michael McClellan, no violations noted

**This Inspection Key Concerns:**

1. Personnel change within the environmental department. Old contact, Clint Gilsdorf is no longer at the site. The new contact is Dale Feldkamp and he is taking the role in addition to his Corporate Maintenance Manager duties.
2. MAERS primary contact no longer with the company. New contact needs to be identified.
3. Monthly calculations per 289-98A Appendix A were not being tallied. Information was onsite and recorded, yet not being consolidated for report. Report should have been complete for April 2015, May 2015, and June 2015. This documentation was received on 7/16/15.

### Permit Unit Summary Tables

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Flexible Group ID
EUFURN9&10	Heat treatment line equipped with a natural gas-fired heating furnace (#9) with oil quench, a parts washer and a natural gas-fired temper furnace (#10).	FGFACILITY
Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grandfathered equipment and exempt equipment.	NA

### Unit Identification

No.	Emission Unit or Flexible Group	Description	Permit Number or Exemption	Comp. Status
1	EU1&2waterIn	Furnace #1 Heating w/ Water Quench and Furnace #2 Tempering	Exempt by Rule 282(a)(i)	C
2	EU3&4oilquench	Furnace #3 Heating w/Oil Quench. Furnace #4 Tempering w/Parts Washer	Grandfathered, yet reported under FG-FACILITY for VOC's	C
3	EU5&6polyquench	A Heating Furnace and a Temper Furnace in Series	Exempt by Rule 282(a)(i)	C
4	EU 7 normalize and EU 8 tempering	Two Furnaces and a Exothermic Generator.	Exempt by Rule 282(a)(i)	C
5	EU9&10 oilquenchIn	Heating w/Oil Quench and Tempering with Wash Station.	PTI 289-98A	C
6	EU11normalize	Normalized Heat Treat Furnace (no quench)	Removed from operation	C
7	EU12normalize	Normalized Heat Treat Furnace (no quench)	Exempt by Rule 282(a)(i)	C
8	EU13 anneal and EU14 anneal	Two Annealing Furnaces	Exempt by Rule 282(a)(i)	C
9	EUshotblast	3 batch airless shot blast machines w/pulse jet baghouses	Exempt by Rule 285(l)(vi)(B)	C
10	EUCBlast	continuous blast line w/inplant cartridge baghouse	Exempt by Rule 285(l)(vi)(B)	C
11	EURustPrevent	Rust Preventative dunk tank	PTI-289-98A under FG-FACILITY	C

### MAERS Reporting

Tons Pollutants Reported to MAERS				
Year	NO <sub>x</sub>	PM <sub>10</sub>	SO <sub>2</sub>	VOC
2014	9.38	14.38	0.04	4.83*
2013	9.17	13.28	0.04	0.19
2010	9.94	12.66	0.04	0.20
2009	24.99	13.42	0.10	0.49
2008	11.64	24.08	0.50	0.23

\*Increase due to Rust Preventative dunk using "Rust Veto 4242" with 6.98lbs/gallon VOC content.

### Inspection Summary

I arrived onsite at 0800 for an unscheduled and unannounced inspection. This was also an initial contact as the facilities new Air Inspector. I did not notice any odors or visual environmental concerns around or while entering the facility. Once in the lobby, I was told that Clint Gilsdorf was no longer with the company and that his replacement Dale Feldkamp was offsite for DEQ wastewater training. I informed the receptionist that I would come back sometime after lunch.

I stopped back at the site at approx. 1345. After speaking with the receptionist, Dale Feldkamp met me in the lobby and escorted me back to his office. I provided him with the inspection brochure and a copy of the boiler MACT brochure while explaining the purpose of my visit. While discussing the boiler card, Dale informed me that they do not have a boiler onsite. We discussed their permit and how I planned to perform the inspection by checking for compliance with the conditions listed. I also provide Dale with a copy of the MAERS User Guide. An email to the primary preparer was kicked back after the 2014 reporting season, so we had assumed the MAERS contact was no longer with the company. I informed Dale that they would need to identify a primary contact for the next reporting year. Dale provided me with a high visibility fire resistant jacket and we began the inspection.

During my inspection, I primarily focused on the permitted units and furnace 3/4. Some of the notes below are descriptions from previous inspections.

#### Exempt- #1 - Furnace #1 Heating w/ Water Quench and Furnace #2 Tempering

MAERS reported this unit as a water quench line; being used with a polymer quench. The polymer quench in use is still Paraquench 90. It contains Sodium Tetraborate-deca and Sodium Nitrite. Because the quench is aqueous and not considered oil, the process is exempt from air use permit requirements by APC Rule 282(a)(i). The two furnaces are in series and following the heat and quench process they enter the second furnace for tempering.

#### #2 - Furnace #3 Heating w/Oil Quench and Furnace #4 Tempering w/Parts Washer

This process was installed prior to August 15, 1967 and therefore the line is grandfathered due to installment prior to the regulation requiring an air use permit. Changes to the operation have been restricted to repairs; any major replacements will make the line subject. Furnace 3 and 4 is a continuous conveyor heat treating line with an oil quench and tempering furnace. The parts are heated by furnace 3 to about 1500°F and then placed into the oil quench. Following the quench, the parts slowly move by conveyer to a water wash and then to furnace 4 where the excess water and oil is burnt off.

In 1992 a permit application was submitted for adding an afterburner to control excessive smoke from the quench process and the #4 furnace. Permit #974-92 was issued, but voided 3 months later when the equipment was not installed.

The VOC's from this process is used to determine FG-FACILITY VOC emissions for the Opt-out permit 298-89A.

#### Exempt- #3 - A Heating Furnace w/Polymer Quench and Temper Furnace in Series

Furnaces #5 and #6 are operated in series using the same polymer quench as Furnace 1 and 2, Paraquench 90. The process is exempt from air use permit requirements by APC Rule 282(a)(i).

#### Exempt- #4 - Exothermic Heat Treat Furnace

A exothermic generator is used to change the environment in furnace #7. Unit #8 is used as a batch tempering furnace. Because there is no quench used, the process is exempt from air use permit requirements by APC Rule 282(a)(i).

#5 - Oil Quench Heat Treat Line with Wash Station

This is a continuous conveyor heat treating line with oil quench. The line is permitted by Permit to Install (PTI) #289-98A. Heated parts exit furnace #9 and are submerged in a quench pit below floor level. A "dumbwaiter" is used to elevate the quenched parts from the pit to the wash station. The pit area appeared to be enclosed except for the "dumbwaiter" opening. Furnace 9 also has protective atmosphere capability using N2 and natural gas as required by customer demand. The flames of this furnace are enclosed thus using radiant heat.

A wash station is used to remove oil carried out from the quench tank. If not washed, the cupped parts would carry quench oil to the second furnace. The residual oil would ignite, or smolder in the #10 furnace. Parts come out with some scaling. Dependent on customer demand, they may be placed into one of the three shot blast units 3, 4, or 5 for cleanup.

Prior to my arrival the wash water fill valve had stuck causing the tank to overflow onto the floor. The water and oil was in the end stages of being cleaned up and none had escaped the facility floor. A nearby overhead door was open and I could not see any evidence that wash had exited the building.

Exempt- #6 - Normalized Heat Treat Furnace (no quench)

Did not inspect. Furnace #11 has been removed from operation.

Exempt- #7 - Normalized Heat Treat Furnace (no quench)

Because there is no quench used on Furnace #12, the process is exempt from air use permit requirements by APC Rule 282(a)(i).

Exempt- #8 - Heat Treat Line without Quench

The furnaces #13-#14 can be used separately or in series. An Endothermic Generator can be used to create a high nitrogen atmosphere for these two furnaces. Exempt under 282(a)(i).

Exempt- #9 - EUshotblast

Blast Units 3, 4, and 5 are three batch machines which appeared similar in there type and installation. The blast media being used is steel shot. Each blaster had a control device that exhausted into the in-plant environment. Cartridge type filter media are used in the control devices and cleaned by pulsed air.

Maintenance schedules are based on operational demand. Low use blasters may go two years without maintenance, high use every 6 months. Maintenance staff indicated that a failed cartridge causes visible opacity in the in-plant environment. A failed cartridge receives immediate maintenance response, because it is not tolerated by employees.

The shot blasting units are exempt from the need to obtain an air use permit by APC Rule 285(l)(vi)(B).

Exempt- #10 - EUCBlast

This is the #7 blast process. It is a conveyORIZED continuous shot blast with a baghouse that vents into the plant. The unit is exempt from the need to obtain an air use permit by APC Rule 285(l)(vi)(B). This is associated with the RustPrevent line.

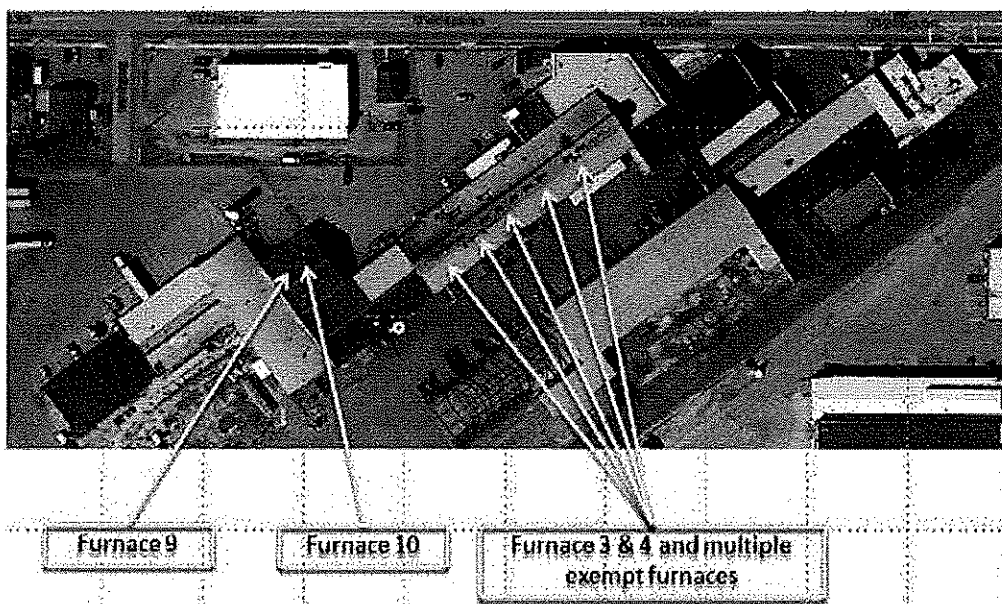
#11 – EURustPevent

This is a lone dunk tank which parts are submerged into a solution of "Rust Veto 4242". Rust veto has a VOC content of 6.98lbs/gal listed in MAERS and is part of the overall FG-FACILITY VOC limit. The emissions from this tank are to the ambient air. Dale stated that a stack is planned to be fabricated to exhaust directly above the tank and out the roof.

After touring the facility floor, I asked Dale for the documentation listed in Appendix A of the permit. Appendix A is the "Monthly Quench Oil Balance and VOC Emission Estimate" worksheet. It uses oil addition, reclaimed oil, disposed oil, and spilled oil to calculate VOC's emitted. We went to another individual's office to see if the information was available. I found that they were not using appendix A for computing monthly tallies, yet they do track all of the information required. Since the permit is new, Dale is new to his position, and the data required is on hand, I decided not to cite Gerdau with a violation notice for failure to complete Appendix A. I told Dale that I would like to have copies of the data no later than the following week. This should be reports for April 2015, May 2015, and June 2015. This inspection will be marked pending until the information is received.

I left the site around 1610.

I received the required reports from Dale on 7/16/15 and found the site to be in full compliance with their VOC limits using Appendix A calculations. They were also under their limit for tons of oil quenched metal parts. The site appears to be in compliance with their permit.



**Image 1(Facility stack layout) :** Facility stack layout

NAME *J. M.*

DATE 7/16/15

SUPERVISOR *J. M.*

