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

B187740918

FACILITY: GUARDIAN INDUSTRIES		**SRN / ID:** B1877
LOCATION: 14600 ROMINE RD, CARLETON		**DISTRICT:** Jackson
CITY: CARLETON		**COUNTY:** MONROE
CONTACT: Laura Rye , Compliance Engineer		**ACTIVITY DATE:** 07/12/2017
STAFF: Brian Carley	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Scheduled inspection to determine compliance with ROP		
RESOLVED COMPLAINTS:		

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Paul Gomez (EIS) and I arrived at the facility and met with Mike, Laura Rye, Compliance Engineer, and John Medvich, Engineering Technician, for the purpose of determining compliance with their ROP #MI-ROP-B1877-2014a and to observe the RATA that was taking place that day. Paul was accompanying me on this inspection as part of cross training to learn more about Air Quality Division and our interaction with the facilities and their permits.

Float Glass Process

Guardian Industries has two lines that manufacture glass using the float method. Float glass uses common glass-making raw materials, typically consisting of sand, soda ash (sodium carbonate), dolomite, limestone, and salt cake (sodium sulfate) etc. Other materials may be used as colorants, refining agents or to adjust the physical and chemical properties of the glass. The raw materials are mixed in a batch process, then fed together with suitable cullet (waste glass), in a controlled ratio, into a furnace where it is heated to approximately 1,500 °C (~2,700 °F) and mixed to create molten glass that has a uniform composition per the requirements of the type of glass that is to be made.

The molten glass is then fed into a "tin bath", a bath of molten tin, from a delivery canal and is poured into the tin bath. The glass flows onto the tin surface forming a floating ribbon with perfectly smooth surfaces on both sides and of even thickness. The glass ribbon is pulled through the tin bath by rollers at a controlled speed. Variation in the flow speed and roller speed enables glass sheets of varying thickness to be formed.

Once off the tin bath, the glass sheet passes through a lehr kiln, where it is cooled gradually so that it anneals without strain and does not crack from the temperature change. On exiting the "cold end" of the kiln, the glass is cut to size by machines with any waste glass sent to crushers to be recycled as cullet.

EU00079

This emission unit is also known as Line #1 of the two that manufacture glass at this facility by using the float method. They currently have a particulate matter (PM) limit for when they make clear glass (23.0 lbs/hour for raw glass production rates between 13.1 to 22.9 tons/hour) and for when they make tinted glass (29.2 lbs/hr for raw glass production rates between 18.7 to 22.9 tons/hr). I reviewed their records for the current year and saw that they were meeting their PM and were within production rates specified (see Attachment 1). These records also comply with special conditions (SC) VI.1 and VI.2 that require them to keep daily production rates and salt cake to sand ratios. It also shows that they have not substituted any fuel or raw material in their glass production which meets the requirements of SC III.1. If they did have a lower glass production rates than those specified above, they would have to meet the allowable rate of emission rate based on Table 32 found in Appendix 9 of their ROP. They are also limited to producing 550 tons of raw glass per day. The highest rate that occurred this year was June 29, 2017 where they produced 503 tons of glass pulled (see Attachment 1). There is also a limit on the salt cake to sand ratio for when they produce tinted glass (18 lbs salt cake/1,000 lbs of sand). The limit for the salt cake to sand ratio for clear glass production depends on the amount of tons of glass produced per day. The limit if their production is 450 tons or less is 12 lbs salt cake/1,000 lbs of sand and if their production is 550 tons, then it is 10 lbs salt cake/1,000 lbs of sand. If it is between 450 and 550 tons pulled, then the limit is based on a linear interpolation between 12.0 and 10.0 lbs/1,000 lbs of sand (see Attachment 2). I noticed that the limits in their records were not using the limit based on the amount of tons pulled. I asked them to review their records again and provide me the corrected data. Before I left the facility, I met with Mike, Laura, and Gerry Hool who is the Plant Manager and the Designated Representative for the facility. They handed me the

corrected data and told me that they were not in compliance with the salt cake to sand ratio for the period of June 15, 2017 through July 12, 2017. They then told me what they were going to do to rectify this violation. I told them that I will look at the data and that they would probably be getting a Violation Notice.

EU00080

This emission unit is also known as Line #2 of the two that manufacture glass at this facility by using the float method. The emissions from this line are controlled with a control device consisting of a dry scrubber, particulate filter, and a selective catalytic Reduction (SCR). They completed construction of the control device on April 13, 2015 and started using HAP metals in their glass manufacturing on June 24, 2015. They submitted notifications of these activities on April 15, 2015 and July 10, 2015, respectively (SC VII.4-6). This line is also subject to National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources, as specified in 40 CFR, Part 63, Subpart SSSSSS because they are now using selenium in their glass making process. During the week of this inspection, they were conducting their annual stack tests to determine compliance with the emission limits for PM and sulfuric acid mist per SC V.3. Tom Gasloli, AQD – Technical Programs Unit, was present for those stack tests. On the day of this inspection, they were conducting a RATA to recertify the NOx, SO2 and flow CEMS (SC IV.3, VI.3, and Appendix 11).

At the time of the inspection they told me that they have not had any abnormally low production rate days (as defined in the permit) or needed to do maintenance on the control device therefore they had not had to use the equations in SC I.11 through 14 or needed to bypass the control device per SC III.2 with the exception of the time period of the furnace start up that is discussed below. I have reviewed the spreadsheets for the time period of January 2017 through June 2016 and any data that they had up to the date of the inspection (SC VI.1 and VI.5). These spreadsheets show all the materials and the amounts that they used to make their glass. Since this is confidential material because the recipe for the glass they are producing could be determined from this spreadsheet, I asked for and received an abridged version of the spreadsheets for the periods of April through May 2017 (see Attachment 3). They are in compliance with their PM, H2SO4, and selenium limits in Section I of this table per their last stack done July 21, 2015 for PM and selenium and on February 17, 2016 for H2SO4. They showed an emission rate of 0.136 lbs PM/ton glass pulled (PM permitted limit is 0.45 lbs/tons of glass pulled), their selenium emission rate was below 0.35 lbs/hr (permitted limit: 2.03 lbs/hr), and a H2SO4 emission rate below 1.5 lbs/hr (permitted limit: 1.6 lbs/hr). The spreadsheet also showed that their raw glass production was well under their limit of 650 tons/day per SC II.1 and VI.1 (see Attachment 3). They can only burn natural gas in this emission unit and they are monitoring and recording natural gas usage rates (SC II.2 and VI.2). Their current malfunction abatement plan was reviewed and approved on October 6, 2015 (SC III.1). At the time of the inspection, the control device was in operation and the ancillary equipment was operating properly (SC IV.1, IV.2, IV.5, IV.6, and IV.7).

During the time period of August to October, 2016, they shut down this line to perform a cold tank repair (rebricking). This activity is not considered reconstruction per § 60.292(c) of 40 CFR Part 60, Subpart CC – Standards of Performance for Glass Manufacturing, so they still are not subject to this regulation. After the furnace was finished being rebricked and the furnace was started back up, their records showed that their emissions were under the NOx and SO2 permitted emission limits of 6,996 lbs/day and 3,224 lbs/day, respectively. The furnace startup lasted less than 30 days and while they were bypassing the control device as allowed in their permit until the exhaust until it was technically feasible to operate the control device, they burned less than 5,000,000 scf of natural gas/day during that time period (allowed by footnote D at the bottom of emissions unit table). They had kept the records that were required in SC VI.6 during startup, which includes the amount of salt cake added to the batch materials, natural gas usage, excess oxygen percentage measured at the crown of the regenerator, and if they used thermal blankets or not.

EUSEAMER

This table covers a seamer that utilizes a belt sander to remove sharp edges from the glass with the dust generated being collected by a baghouse. The seamer was not in operation at the time of the inspection so a Method 9 – Visible Emissions determination was not done. They are inspecting the dust collector on a daily basis and recording the pressure drop of the baghouse on the days that this emission unit is operating (see Attachment 4). The records show that they are in compliance with their CAM plan with the pressure drop staying between 0 to 8 inches of water and that they have not had monitor downtime. I determined that they are in compliance with this table.

EUDUSTL1

This table covers a pulse jet dust collection used to filter glass particles from Line #1 crushing operation. This glass crusher was in operation at the time of the inspection, however, due to time constraints, I was not able to observe the dust collector operating. They are inspecting the dust collector on a daily basis and recording the

pressure drop of the baghouse (see Attachment 4). The records show that they are in compliance with their CAM plan with the pressure drop staying between 0 to 8 inches of water and that they have not had monitor downtime. I determined that they are in compliance with this table.

EUDUSTL2
This table covers a pulse jet dust collection used to filter glass particles from Line #2 crushing operation. This glass crusher was in operation at the time of the inspection and I did not see any visible emissions coming from the exhaust of the dust collector when I drove in and when I left. A Method 9 was not done on this dust collector. They are inspecting the dust collector on a daily basis and recording the pressure drop of the baghouse (see Attachment 4). The records show that they are in compliance with their CAM plan with the pressure drop staying between 0 to 8 inches of water and that they have not had monitor downtime. I determined that they are in compliance with this table.

EUWASTESILO
This table covers an 800 ft3 air pollution control system waste silo equipped with a passive bin vent for the control device on Line #2. This silo is on the east side of the waste management building. It was in operation at the time of the inspection and I did not see any visible emissions from the bin vent filter that is located on top of the silo. I determined that they are in compliance with this table.

EUWMBUILDING
This table covers Line #2 air pollution control system waste loading occurring in the waste management building. This dust collector does not vent to the out of the building and all emissions are contained within the building. They are planning on requesting this table be removed from the ROP during the next modification or renewal of the ROP. I determined that they are in compliance with this table.

FG00097
This table covers two diesel oil fired emergency backup electrical generators with a maximum rated capacity of 2500 brake horsepower (BHP) each. I then reviewed the records for FG00097 (EUGENERATOR 1 and 2). They are using ultra low sulfur diesel fuel (15 ppm sulfur) for those generators, which is well below their limit of 0.04% sulfur by weight in the diesel fuel. They are keeping track of the operating hours and the amount of fuel consumed in the generators (see Attachment 5). They are below their limits of 51,000 gallons per 12 month rolling time period (~4,800 gallons consumed in 2016) and 700 generator-hours per 12 month rolling time period (37.2 hours of operation in 2016). They are maintaining the records required in Section VI of this table. I determined that they are in compliance with this table.

FG00098
This table covers any cold cleaners (aka parts cleaners) that are on site at this facility. The cold cleaners that they use at this facility use either isopropyl alcohol or citrus based solvents. They currently have three cold cleaners on site and only one uses isopropyl alcohol. I reviewed the MSDS for the isopropyl alcohol and found the information for the vapor pressure and they are keeping the information required by SC VI.2. Due to time constraints, I did not verify if the lids were down and the operating procedures were posted in an accessible, conspicuous location during my inspection. I determined that they are in compliance with this table.

FGFACILITY
This table covers all process equipment source-wide including equipment covered by other permits, grand-fathered equipment and exempt equipment. Based on the records provided during the inspection, they emitted 3.64 tons of HAPS total in 2016. This amount was based on emissions from the emergency generators, which is the only units that had emission factors for HAPs. They are also keeping track of the selenium and other HAP metals that are emitted from Line #2, which they emitted 0.95 tons of selenium and 0.97 tons total HAP metals in 2016 (see Attachment 6). Combined, this gives a total of 5.56 tons of HAPs emitted in 2016, which well under the individual HAPs limit of 8.9 tons/year and 22.4 tons/year aggregate HAPs. I asked that they combine these two data sets into one to better show compliance with this table. I determined that they are in compliance with this table.

Follow up
I called Mike and requested that they review their records for the past 5 years to see if there were any exceedances during that time period and send me the data. Laura emailed me the data from the last 5 years with the months from each year that exceeded 450 tons pulled and the salt cake to sand ratio for those time periods (see Attachment 7). The data showed that they only exceeded the salt cake to sand ratio during the time period of June 15, 2017 through July 12, 2017. A violation notice will be sent to the facility for these exceedances, which lasted for 27 straight days.

Compliance Determination

Based on the information that received during my inspection, I have determined that this facility is not in compliance with MI-ROP-B1877-2014a due to exceedances of the salt cake to sand ratio on Line #1 from June 15, 2017 through July 12, 2017. A violation notice was sent to the company on July 28, 2017 with a response due on August 17, 2017.

NAME Brian Lanly DATE 8/3/17 SUPERVISOR