

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

B577745859

FACILITY: HarbisonWalker International, Inc.		SRN / ID: B5777
LOCATION: 1301 E 8TH ST, WHITE CLOUD		DISTRICT: Grand Rapids
CITY: WHITE CLOUD		COUNTY: NEWAYGO
CONTACT: James Maile, Plant Manager		ACTIVITY DATE: 08/30/2018
STAFF: Adam Shaffer	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled unannounced inspection.		
RESOLVED COMPLAINTS:		

Air Quality Division (AQD) staff Adam Shaffer (AS) arrived at the HarbisonWalker International (HWI) facility located in White Cloud, MI at 10:29am on August 30, 2018 to complete a scheduled unannounced inspection. The site had in the past been identified as North American Refractories Company but has since then switched names to the current title.

Facility Description

Prior to entering the facility, off-site odor and visible emissions observations were completed. The weather conditions were high 60's F, partly cloudy and winds from the northeast at 5-10mph. Along the western exterior of the property, odors from onsite processes were noted. However, no recent odor complaints have been received regarding this facility. What appeared to potentially be emissions was observed coming from the chute and offloading building on site. These observations will be discussed further in this report.

Upon arrival AQD staff AS met with Mr. James Maile, Plant Manager, and Mr. Jerry Buffenbarger, Human Resource Representative and Safety Coordinator. Mr. Buffenbarger and several representatives of HWI provided a tour of the facility and answered site specific questions. Records following the inspection were provided by various HWI staff. Prior to completing a tour of the facility, a safety discussion was completed.

HWI is a refractories products and services manufacturing facility, with the White Cloud, MI facility specifically producing bricks. During operations magnesite is brought on site where it undergoes various operations including grinding and mixing with other materials before it is pressed into bricks. Following this, the bricks are heat treated before being shipped off to customers.

The site is in operation with permit to install (PTI) No. 184-07A, which is for a silo and associated equipment for bulk magnesite storage, and various other equipment including conveyors, hoppers, and diverters, all of which is controlled by two dust collectors. The second permit the site is in operation under is PTI No. 24-10A, which is for the storage bins associated with storage of powdered pitch containing benzo(a)pyrene, three brick component mechanical mixers, and three natural gas fired ovens used to cure refractory bricks with emissions controlled by a single catalytic oxidizer.

PTI No. 24-10A

Malfunction Abatement Plan

Per PTI No.24-10A, a Malfunction Abatement Plan (MAP) must be submitted, implemented and be maintained in order to operate EUSTORAGEBINS, EUMIXERS, and EUOVENS. A MAP was submitted to and received by AQD staff on January 27, 2017. Specific information for each associated unit in the MAP is discussed further in this report.

EUSTORAGEBINS

This emission unit is for the storage bins associated with the storage of powdered pitch containing benzo(a)pyrene.

Powdered pitch containing benzo(a)pyrene is received on site in pure form in bulk bags. Once received, the bags are loaded into an enclosed station and opened inside the enclosure to be transferred into one of three enclosed storage bins via an enclosed transport system. During the site inspection the storage bins containing the pitch with benzo(a)pyrene were observed in these self-contained areas. As needed, the pitch is then transferred from the storage bins to mixers to be mixed with other raw materials in specific amounts per customer specifications. Three HEPA filters were observed with no emissions noted. No portions of

EUSTORAGEBINS are vented to exterior portions of the property. Daily inspection reports are completed to check for leaks and if any emissions are observed. The MAP also stated that daily pressure drop readings are to be monitored; however, it was stated by HWI staff that flow rates are well below expected rates when this MAP was developed, and no pressure drops are observed. Additionally, HWI was looking into revising the MAP to reflect these observations. This was concluded to be acceptable and a revised MAP will be submitted to the AQD. Inspection report records were requested and provided from July 2017 through July 2018. Based on the daily inspection reports, EUSTORAGEBINS appears to be operating satisfactorily.

EUMIXERS

This emission unit is for the three brick component mechanical mixers. The mixed components are sent to the brick presses from the mixers. Particulate emissions from EUMIXERS are controlled by dust collector M71. Daily inspections are completed for EUMIXERS per the MAP that consist of any stack emissions observed and are the three mixers working. Records were requested from July 2017 through July 2018. After further review the records appeared to be acceptable. Additionally, HWI collects pressure drop and stack emission records in 15-min intervals for dust collector M71. Records were requested and reviewed from July 2017 through July 2018. Based on the records reviewed, dust collector M71 appears to be operating in a satisfactory manner. Per PTI No. 24-10A, one stack is listed in association with EUMIXERS. Though the exact dimensions were not measured, they appeared to be consistent with the measurements per PTI No. 24-10A. Additionally, during the inspection the stack was observed, and no emissions were seen coming from the stack.

EUBRICKOVENS

This emission unit is for the three natural gas-fired ovens used to cure refractory bricks. The ovens are referred to as Oven No. 1, Oven No. 2, and the Dryer. VOC emissions from the three ovens are controlled by a single catalytic oxidizer. This emission unit is subject to the following material limits.

Pollutant	Limit	Time Period / Operating Scenario
VOCs	0.87pph	Test Protocol*
VOCs	1.0 tpy	12-month rolling time period as determined at the end of each calendar month.
Formaldehyde	0.030 pph	Test Protocol*
Benzo(a)pyrene	0.00011pph	Test Protocol*
*Test Protocol shall specify averaging time.		

Testing of the catalytic oxidizer to determine compliance with the volatile organic compounds (VOCs) and benzo (a)pyrene emission limits was completed on June 1, 2017. Testing completed at the time verified that the destruction efficiency of the catalytic oxidizer is at least 90 percent with VOC and benzo(a)pyrene emissions well within the permitted limits. At the time of testing formaldehyde was decided to not be included in testing.

Per Special Condition (SC).IV.1, satisfactory operation of the catalytic oxidizer includes a minimum catalyst bed inlet temperature of 700°F and a VOC destruction efficiency of at least 90%. As stated above, testing on June 1, 2017 verified a destruction efficiency of at least 90%.

At the time of the inspection the catalytic oxidizer inlet temperature was operating above 700°F which is acceptable. The pressure drop reading across the catalyst was 6.65 inch of water column. This was discussed with HWI staff and concluded to be condensation in the line.

Daily inspection reports per the MAP are completed for the catalytic oxidizer which include verifying if all incinerator temperature and pressure readings were taken, alarms checked and were any emissions observed coming from the stack associated with EUBRICKOVENS. Daily inspection reports were reviewed from July 2017 through July 2018 and appeared to be acceptable at this time. HWI monitors and records the readings for catalytic oxidizer inlet temperatures; outlet temperatures and pressure drop across the catalyst in 15 minute intervals. Temperature and pressure drop readings were requested and provided from July 2017 through July 2018. Several dates were observed where the temperature readings were not operating in the satisfactory ranges. This was brought to the attention to HWI staff and concluded to be an issue with the electronic / communications wiring or connectors and not to be an emissions exceedance. After further review, this was concluded to be acceptable. While reviewing the pressure drop readings, it was noted for lengths of time where it exceeded the maximum stated value of 6 inch of water column and no corrective action appeared to have been completed to address the issue. Upon further review it was concluded that HWI shall update their MAP to include specific ranges of satisfactory operation, correction actions completed if values are not within that satisfactory

range and acceptable time frames any issues identified are to be addressed.

Per PTI No. 24-10A, HWI shall not cure more than 80,000 tons of refractory bricks per a 12-month rolling total. Monthly and 12-month rolling total tons of refractory bricks cured were requested and provided. For the month of July 2018, 5,413 tons of refractory bricks were cured and the 12-month rolling total was 59,373 tons of refractory bricks cured, which is well within the permitted limit. Previous 12-month rolling totals of total refractory bricks cured were also well within the permitted limits.

Per PTI No. 24-10A, HWI shall not cure more than 6,063 tons of refractory bricks that use the benzo(a)pyrene containing pitch per a 12-month rolling total. Monthly and 12-month rolling total tons of refractory bricks with the benzo(a)pyrene containing pitch cured were requested and provided. For the month of July 2018, 283 tons of refractory bricks containing the benzo(a)pyrene pitch were cured and the 12-month rolling total was 2,329 tons, which is well within the permitted limit. Previous 12-month rolling totals were also reviewed and concluded to be within the permitted limits.

Only natural gas is used for EUBRICKOVENS. Monthly records of total natural gas combusted were requested and reviewed. For the month of July 2018, 1.533 MMCF of natural gas was used. Previously monthly totals were reviewed and concluded to be acceptable.

HWI is subject to a VOC limit of 1.0 tons per year (tpy) per a 12-month rolling total. Monthly and 12-month rolling total VOC emissions were requested and reviewed. For the month of July 2018, 0.002 tons of VOCs were emitted and the 12-month rolling total was 0.03 tpy which is well within the permitted limit. Previous 12-month rolling totals were reviewed and well within the permitted limit.

The one stack associated with EUBRICKOVENS was observed during the site inspection. Though the dimensions were not measured they appear to be consistent with those associated in PTI No. 24-10A.

PTI No. 184-07A

EU-G43B

This emission unit is for the silo and associated equipment for bulk magnesite storage. Particulate emissions are controlled by a dust collector (ID G43B)

At the time of the inspection, dust collector G43B was not in operation. It was concluded that the dust collector was down until replacement bags could be installed. The emissions from dust collector G43B were being diverted to dust collector G40. Per SC.IV.1, HWI shall not operate EU-G43B unless the dust collector is installed, maintained and operated in a satisfactory manner. Since the dust collector is not operating, this is a violation of SC.IV.1.

EU-G43B is subject to a particulate matter (PM) limit of 0.018 lb / 1000 lbs of exhaust gases, calculated on a dry gas basis and a PM10 limit of 0.28 pounds per hour (pph). Both are based on testing, which was concluded to not be necessary at this time. Visible emissions for EU-G43B are limited to a 5% opacity limit per a six-minute average. Since this dust collector was not in operation, no observations could be made to verify if emissions were being emitted during operation.

At the time of the inspection the setpoint for EU-G43B is 8 inch of water column. To verify compliance, HWI keeps track of pressure drop readings and visible emissions by recording values in 15 minute intervals. Records were requested and reviewed from July 2017 through July 2018. Several instances were observed in the records reviewed where the readings exceeded the 8 inch of water column setpoint for lengths of time, however, no fugitive emissions were noted during those time periods for EU-G43B.

During the inspection the one stack associated with this emission unit was observed. Per. SC.VIII, the exhaust gases from this stack shall be discharged unobstructed vertically upwards to the ambient air. The stack in question was observed to be venting horizontally. This is a violation of SC.VIII.

EU-G40

This emission unit is for various equipment on site including but not limited to various feeders, hoppers, belts and conveyors.

EU-G40 is subject to a PM limit of 0.03 lb / 1000 lbs of exhaust gases, calculated on a dry gas basis and a PM10

limit of 3.2 pph. Both of these limits are based on testing, which was not concluded to be necessary at this time. To verify compliance, HWI keeps track of pressure drop readings and visible emissions by recording values in 15 minute intervals. The setpoint for dust collector G40 is 7.0. Records were requested and reviewed from July 2017 through July 2018. Several instances were observed in the records reviewed where the readings exceeded the 7.0 inch of water column setpoint, however, no fugitive emissions were noted during those time periods for EU-G40.

Visible emissions for EU-G40 are limited to a 5% opacity limit per a six-minute average. During the inspection, the stack associated with this emission unit was observed by HWI staff and AQD staff AS. Visible emissions were consistently observed coming from the stack. The magnehelic gauge reading at the time of the inspection was 6.9 inch of water column. During each pulse of the baghouse, the pressure drop was observed spiking to above 10 inch of water column. While observing the baghouse inside, the air quality was difficult to breath and it was suggested to move to a different location to speak further. Speaking with HWI staff, the magnehelic gauge reading had hit its limit a couple of weeks prior and a work order had been submitted to address the issue. As stated earlier in this report, emissions for EU-G43B were being collected by dust collector G40. Based on the observations made the dust collector G40 is not operating satisfactorily and this is a violation of SC.IV.1. One stack is listed in association with this emission unit. Though the exact dimensions were not measured during the inspection, they appeared to be consistent with those mentioned in PTI No. 184-07A.

Following the site inspection, HWI staff stated that slight visible emissions were noted on August 30 & 31, 2018 for what was likely G40; though this was not verified. Maintenance had completed troubleshooting procedures and was preparing to replace defective bags. An update received from HWI staff several days later stated that dust collector G40 was being re-bagged and was to be completed by 09/22/18.

Additional Observations

- Two parts washers were observed on site. The air/vapor interface of the two parts washers was less than 10 square feet. Operating procedure labels were provided to HWI staff. The two parts washers appear to be exempt per Rule 281(2)(h).
- In the fabrication area several pieces of equipment including a milling machine and a drill press were observed that appear to be exempt per Rule 285(2)(l)(vi)(B).
- Several dust collectors were observed for various grinding operations that are not permitted and, in the past, appeared to have utilized Rule 290(a)(iii). When this was discussed with the company, HWI believes that Rule 290(a)(iii) applies to the dust collectors and associated process equipment below. Additionally, pressure drop readings for each dust collector and the setpoint before requiring cleaning were collected and listed as follows.

Dust Collector	Pressure Drop (mm Hg)	Setpoint (mm/hg)
628A	8.9	8
G21	Not in use	5
L9	8	9
D31	4.5	8
M50	3.9	4
G41	4	8
G45	7	8
D32	4	6
G66	6.1	6

Several dust collectors were nearing or at the setpoint in which cleaning is to be completed. This was brought to the attention of HWI and an update was provided for several of the dust collectors noted above.

- o **G28A** – Replacement filters have been ordered and unit filters will be replaced when received.
- o **M50** – Current reading is at setpoint limit. HWI will be trying to pulse the dust collector and if not effective the unit will be re-bagged by 10/15/18.
- o **G66** – This unit will be re-bagged the week of 09/24/18.

The updates for the dust collectors mentioned above were concluded to be acceptable. Safety Data Sheets (SDS) were requested and provided for the four magnesite materials that are collected in the dust collectors above. After further review, the dust collectors noted above and associated process equipment appear to be exempt per Rule 290(a)(iii). One dust collector (G43) was identified during the inspection; however, a potentially applicable exemption was not fully verified.

- The rooftop was accessed during the course of the inspection. The catalytic oxidizer was observed and appeared to be operating in a satisfactory manner.
- While observing the conveyor belt from the unloading area to the main building, particulate emissions were observed escaping from what appeared to be a transfer spot (when material is dumped from the bucket onto the conveyor) and along the conveyor. Moving forward, HWI shall address these areas of concern to limit particulate emissions from escaping into ambient air.
- Five presses that are used for brick production were observed during the inspection. Bricks created from these presses range from 2-5 bricks at a time. Associated cyclones within the building were observed for three of the five presses.
- One boiler that is 985,000 btu/hr in size and was installed in 1998 was observed. The boiler appeared to only use natural gas and appears to be exempt per Rule 282(2)(b)(i). Based on the size of the boiler, it is not subject to federal new source performance standards.
- During the inspection, PM emissions not properly being contained were observed being vented externally through a window from the main building. This was pointed out to HWI staff during the inspection and is a violation of Rule 370(1).

Conclusion

A final discussion was held between AQD staff and HWI staff. Based on the facility walkthrough, observations made, and records received, HWI appears to not be in compliance with PTI No. 184-07A and applicable air pollution control rules. A violation notice (VN) will be sent for the following violations.

- Emissions from EU-G43B at the time of the inspection were not being captured by dust collector G43B, which was offline until bags for the unit could be replaced. The emissions were being diverted to dust collector G40. This is a violation of PTI No. 184-07A, EU-G43B, SC.IV.1.
- The stack associated with EU-G43B is not being vented unobstructed vertically as was permitted. The emissions are being emitted horizontally and this is a violation of PTI No. 184-07A, EU-G43B.VIII.
- Based on the observations at the time of the inspection of dust collector G40 it was concluded that the dust collector was not operating satisfactorily. Therefore, this is a violation of PTI No. 184-07A, EU-G40.SC.IV.1.
- PM emissions were observed being vented externally through a window from the main building. This is a violation of Rule 370(1) which requires the collection and disposal of air contaminants in a manner so as to minimize the introduction of contaminants to the outside air.

NAME

Alan F. Shaffner

DATE

09/28/18

SUPERVISOR

[Signature]