DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

P078173537

FACILITY: BACCO CONSTRUCTION CO PLANT PUC-10250		**SRN / ID:** P0781
LOCATION: N3676 US 2, IRON MOUNTAIN		**DISTRICT:** Marquette
CITY: IRON MOUNTAIN		**COUNTY:** DICKINSON
CONTACT: Kyle Albrecht , Foreman		**ACTIVITY DATE:** 08/15/2024
STAFF: Drew Yesmunt	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Targeted Inspection FY24		
RESOLVED COMPLAINTS:		

Facility: Bacco Construction Co Plant PUC-10250 (SRN: P0781)

Location: N3676 US-2, Iron Mountain, MI 49801

Contact(s): Kyle Albrecht, Foreman; Kyle Fortier, President

Regulatory Authority

Under the Authority of Section 5526 of Part 55 of NREPA, the Department of Environment, Great Lakes, and Energy may upon the presentation of their card, and stating the authority and purpose of the investigation, enter and inspect any property at reasonable times for the purpose of investigating either an actual or suspected source of air pollution or ascertaining compliance or noncompliance with NREPA, Rules promulgated thereunder, and the federal Clean Air Act.

Facility Description

Bacco Construction Company is a general contractor, asphalt material producer, and pavement contractor based out of Iron Mountain, MI.

Plant PUC-10250 is a portable continuous hot mix asphalt (HMA) plant that operates throughout the Upper Peninsula of Michigan. The HMA plant consists of a counter-flow drum dryer, fabric filter baghouse, aggregate and reclaimed asphalt pavement (RAP) storage piles, cold feed bins, conveyors, screens, asphalt cement storage tanks, silos, loaders, and haul trucks. The plant operates under Permit to Install (PTI) No. 4-17.

Process Description

HMA is produced by the drying and mixing of aggregate, RAP, and liquid asphalt cement. HMA plants can be categorized as either batch or continuous mix. Continuous mix plants are further subdivided based on the type of dryer, which can be either a parallel-flow drum or counterflow drum.

The HMA process begins with the transfer of aggregate, consisting of sand and crushed rock, from storage piles into cold aggregate feed bins. From the bins, material is dispensed onto conveyors that transport the material into screens and then into the drum dryer. The quantities of the type and size of aggregate are determined from the control room. The virgin aggregate is heated by an oil-fired burner to remove moisture. As the virgin aggregate moves through the dryer, RAP is dispensed from a separate bin and added to the dryer. The RAP and aggregate continue to be heated and are then mixed with asphalt cement prior to exiting the dryer. After exiting the dryer, HMA is conveyed to storage silos where it is loaded into trucks to be hauled off-site.

Emissions

The primary source of emissions from the plant is the drum dryer. The primary pollutants emitted include sulfur dioxide (SO2), nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOC) from the combustion of fuel oil in the burner, and particulate matter from drying aggregate in the drum. The quantities of these pollutants emitted varies based on the composition of the fuel being burned and operating parameters. A fabric filter collector is primarily used as PM control for the dryer. Other sources of emissions at HMA plants include fugitive emissions of PM and VOCs from storage silos, truck load-out operations, liquid asphalt cement storage tanks, aggregate storage and handling, and vehicle traffic. Dust suppressants, such as water or calcium chloride, can be used to control fugitive PM emissions.

Emissions Reporting

Bacco Construction Co Plant PUC-10250 is a synthetic minor source for CO and NOx. The facility is also subject to the New Source Performance Standards (NSPS), Subpart I – Standards of Performance for Hot Mix Asphalt Facilities as the source is a hot mix asphalt facility that commenced construction after June 11, 1973. This facility is therefore required to report its annual emissions to the MiEnviro. The following table lists the source total emissions for the reporting year 2023.

Pollutant	Emissions (TPY)
CO	8.67
NOx	3.67
PM10 PRI	6.87
PM10 FIL	6.80

PM2.5 PRI	**2.29**
PM2.5 FIL	**1.00**
SO2	**3.87**
VOC	**2.13**

Compliance History

The facility has not received any violation notices in the past five years. The facility was last inspected on September 20, 2023, and was found to be in compliance with all applicable air pollution control rules and federal regulations.

Inspection

On August 15, 2024, AQD Staff (Drew Yesmunt and Michael Conklin) conducted an unannounced inspection of Bacco Construction Co Plant PUC-10250. The plant was operating in a pit located at 1850 E Swede Rd, Cedarville, MI. Weather conditions at the time were fair with southeast winds at 8 mph and a temperature of 76 degrees Fahrenheit. The plant was operating at the time of inspection. AQD staff arrived onsite and met with Kyle Albrecht, the plant foreman. It was explained that the purpose of the inspection was to ensure compliance with PTI No. 4-17 and all other applicable air pollution control rules and federal regulations.

The facility operates a Dillman Unified counter-flow drum dryer with a maximum rated heat input capacity of 110 MMBtu/hr. Operations data was gathered from the facility while on-site. The virgin aggregate feed rate and RAP feed rate are monitored on a continuous basis. During the inspection, the plant was producing on average 180 ton/hr, the percent RAP in the mix was 10%, and the baghouse pressure drop was 9.2 in WC. The drum dryer burner was firing RUO at 42% capacity and the asphalt mix temperature was 305 degrees Fahrenheit. A walk-around inspection of the facility was then conducted to check for the installation and condition of all necessary air pollution control equipment.

AQD staff observed that the facility's baghouse was properly installed and connected to the drum dryer and was exhausting out the stack. No visible emissions were observed, only steam from aggregate drying. The baghouse was also equipped with a high temp alarm as required by the facility's preventative maintenance plan. While inspecting the baghouse, AQD staff observed two holes in the fines collection basin. The facility was notified and responded stating that the holes would be repaired as soon as possible. The main exhaust duct from the dryer to the baghouse

appeared to be in good condition with no gaps in the structure. No excess material was observed around transfer points of the collected material from the baghouse. Areas around the feed bins were inspected for excess spillage of aggregate material. A Rangefinder was used to verify that the stack of the baghouse met the minimum stack height requirement of 22 ft. The stack height measured during the inspection was approximately 26 ft.

AQD staff asked if spare replacement fabric filter bags for the baghouse were kept on-site. The facility responded stating that no bags were currently on-site as a large number of bags had been replaced earlier that month, but an order had been placed to get more bags on-site. AQD staff explained that this was an area of non-compliance, and that the facility is required to maintain a minimum of 15 spare bags onsite to ensure bags can be immediately replaced if needed and returned to operation as soon as possible.

During the walk-around, AQD staff observed that the facility's two asphalt cement storage tanks were not equipped with vapor condensation and recovery systems as required by PTI No. 4-17. The facility stated that the vapor systems were being fixed and replaced during the time of inspection, but they would be installed on the tanks during the following week. It was conveyed to the facility that this was another area of non-compliance, and the vapor condensation and recovery systems need to be installed on the asphalt cement tanks at all times during operation.

While the plant was operating, visible emission checks were performed. Fugitive dust from truck loadout operations were below 5 percent opacity, however the drop distance did not appear to be kept to a minimum. Fugitive dust from the front-end loader depositing cold aggregate into feed bins was kept below 5 percent opacity, and drop distances were kept to a minimum. In the plant yard and roadway, fugitive dust emissions over 5% opacity were observed as front-end loaders and trucks drove throughout the plant. AQD staff explained to the facility that excess fugitive dust was observed and that this was an area of non-compliance. The facility responded stating that water is applied to the yard and roadways three times or more as needed each operating day unless there's rain, but that the water truck was currently unavailable.

Following the on-site inspection, AQD staff sent a records request to Kyle Albrecht, Plant Foreman for Plant PUC-10250, and Kye Fortier, President of Bacco Construction Co.

The facility is restricted to not process more than 250,000 tons of asphalt per 12-month rolling time period. The facility is also restricted to not process more than 400 tons per hour based on a 24-hr rolling average time period, and the maximum RAP content cannot exceed 50% of the asphalt mixture on a monthly average. Records of the daily amount and composition of asphalt processed at the plant were provided for January 2024 through July 2024. For 2023, the plant reported to MiEnviro a production total of 133,354 tons of asphalt. For January 2024 through July 2024, a total of 47,369 tons was produced, and the facility did not exceed its 24-hour average nor

12-month rolling processing limits. The records also demonstrate that RAP content has not exceeded a monthly average of 50% in 2024.

The facility is required to track its CO emissions on a monthly and 12-month rolling basis, and conduct CO emissions monitoring upon each season startup, every 500 hours of operation, and after any malfunction of the drum dryer or burner. Records of monthly CO emissions were provided for January 2023 through July 2024 using AP-42 emission factors for drum mix hot mix asphalt plants. For the 2024 operating season, the 12-month rolling CO emissions remained under 10 tons, within the facility's emission limit of 16.3 tons per year.

Record of CO emissions monitoring was also provided for January 2023 through July 2024. The record indicates that testing was conducted during the initial startup and after every 500 hours of operation for both 2023 and 2024. All CO emissions readings reported were under 500 ppmv, indicating proper performance of EUHMAPLANT. No malfunctions of the drum dryer or burner were reported.

The facility is also required to maintain the efficiency of the drum burner to control CO emissions by performing burner tune ups each paving season. AQD staff requested the most recent burner tune-up report, but records were unavailable. This was noted by AQD staff as an area of non-compliance with SC III.5 and SC VI.3. Following the request, a burner tune-up was scheduled and conducted on 9/17/2024. The analyzer calibration date for this report was 4/4/2024. The table below outlines the burner tune up report reviewed.

Parameter	Before	After
NOx (ppm)	30	29
CO (ppm)	867	559
CO2 (%)	3.34	3.50
O2 (%)	15.0	14.7
Excess Air Range (%)	253-255	237-239
Production Rate (tph)	240	240

Moisture in Aggregate (%)	**4.8**	**4.8**
RAP in Mix (%)	**15**	**15**
Baghouse Pressure Drop (in WC)	**6.3**	**6.3**
Burner Firing Rate (%)	**47**	**47**
Ambient Temperature (deg F)	**80**	**80**
Mix Temperature (deg F)	**305**	**305**
Stack Temperature (deg F)	**240**	**240**

The CO concentration after the burner tune-up should be below 500 ppm as stated in SC VI.3. The final CO concentration after the tune-up on 9/17/24 was greater than 500 ppmv. This indicates the burner may not be firing at an optimum air to fuel ratio and causing excess CO emissions from incomplete combustion.

Baghouse maintenance records were provided for January 2024 through August 2024 that note each of the bags in the bays of the baghouse that were replaced during each calendar month and all significant maintenance activities. For January to August 2024, a total of 201 bags were replaced in the baghouse. The most recent blacklight inspection was conducted on May 10, 2024. General maintenance logs for EUHMAPLANT were also provided for January 2023 through August 2024, listing all significant maintenance and repair activities on the plant and baghouse. Daily baghouse pressure drop readings were also provided for January 2024 through July 2024. From the record reviewed, the differential pressure of the baghouse has stayed within the acceptable range of 2-10 inches WC during operation.

Bacco Construction Co Plant PUC-10250 is not permitted to remain at any geographical site for longer than 24 consecutive months. The facility has not remained in a geographical location longer than 24 consecutive months since the facility was permitted in 2017. The facility has been consistent in providing relocation notices as the plant moves throughout the Upper Peninsula of Michigan.

Plant PUC-10250 is permitted to use recycled used oil (RUO) as fuel in the drum dryer. The RUO specification is not allowed to exceed the maximum concentration of the contaminants listed in EUHMAPLANT SC II.2. The facility maintains records of delivery receipts and fuel oil analysis

certifications. An example record was provided that notes 6,800 gallons of used oil were delivered to the plant on May 24, 2024. A fuel oil analysis certification of the tank was supplied with the delivery. The samples of the tank were taken on December 21, 2023, and an independent laboratory analysis was conducted by Summit Environmental Technologies. The results of the analysis show the RUO composition to be within the material limits of EUHMAPLANT SC II.2.

It was noted by AQD staff that the required PM emissions testing under EUHMAPLANT SC V.1 was completed on June 23, 2017. Results from the testing showed that the facility's PM emission rate was 0.003 pounds per tons of HMA paving material produced, below the emission limit of 0.03 pounds per ton of HMA paving material produced. Record of the emissions testing is held on file by AQD. Under SC V.2, emissions testing may also be requested by the AQD District Supervisor to verify emissions rates of CO, NOx, SO2, lead, and all toxic air contaminants (TACs) listed in SC I.8-19 in order to continue operation. As of the date of this inspection, this emissions testing has not been requested.

Compliance

Based on the inspection performed and records reviewed, Bacco Construction does not appear to be in compliance with PTI No. 4-17. During the on-site inspection, AQD staff observed the following violations: The facility did not maintain a minimum of 15 spare fabric filter bags onsite (EUHMAPLANT, SC III.2 and Appendix B.7), the asphalt cement storage tanks were not equipped with vapor condensation and recovery systems (EUACTANKS, SC III.1), fugitive dust emissions from EUYARD were observed in excess of five percent opacity (EUYARD, SC III.1), record of burner fine tuning for the start of the 2024 paving season was not available upon request (EUHMAPLANT, SC III.5, SC VI.3, SC VI.10), and CO emissions reported before and after the burner fine tuning conducted on 9/17/2024 were over 500 ppmv, indicating poor burner performance (EUHMAPLANT, SC VI.3). A violation notice will be issued in response.

EUHMAPLANT with baghouse and stack installed. No visible emissions observed exiting the baghouse stack.

Fugitive dust from unpaved roadways observed at greater than 5 percent opacity.

EUACTANKS observed operating without the vapor condensation and recovery systems installed.

Damage observed to the baghouse fines collection basin.

NAME _____ DATE 10/1/2024 SUPERVISOR _____