

DEQ-AQD

DEC 02 2016

SAGINAW BAY

November 28, 2016

Ms. Gina McCann
Senior Environmental Quality Analyst
MDEQ, Air Quality Division
Bay City District
401 Ketchum Street, Suite B
Bay City, MI 48708

Re: Response to Violation Notice Dated October 21, 2016 for the Pyramid Paving & Contracting Company Asphalt Plant in Essexville, Michigan (SRN: B1485)

Dear Ms. McCann:

On October 21, 2016, the Michigan Department of Environmental Quality, Air Quality Division (AQD) issued a Violation Notice to Pyramid Paving & Contracting Co. (Pyramid Paving) alleging the following violations of Michigan's Administrative Rules for Air Pollution Control (PA 451 of 1994, as amended) at its asphalt plant located in Essexville:

| Process Description | Rule/Permit Condition Violated | Comments |
|-----------------------------------|--|---|
| Emissions from asphalt production | R 336.1901 Unreasonable interference with the comfortable enjoyment of life and property. | Emissions from stack down washing and impacting residence. |
| Emissions from asphalt production | R 336.1910 Air cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with these rules and existing law. | Emissions from stack down washing. Need engineering investigation into stack height, flow, velocity, etc. |

Pursuant to the Violation Notice, AQD staff detected odors downwind from the Essexville plant on October 13 and 20, 2016. AQD further observed emissions from the baghouse exhaust stack down washing to ground level. Pyramid Paving does not dispute that emissions from the baghouse exhaust stack were at times visibly down washing on the two dates cited in the Violation Notice. In response to this condition, Pyramid Paving has already initiated temporary corrective measures designed to reduce the potential for visible or odorous

emissions to impact residential properties south of the plant in 2016. Further, Pyramid Paving has retained an environmental engineering firm to provide assistance with developing a more permanent solution.

As requested in the Violation Notice, this submittal constitutes the written response to the cited alleged violations. Since Pyramid Paving does not dispute that emissions from the baghouse exhaust stack were visibly down washing on the two cited dates, the focus of this response is on corrective measures that have already been implemented, the results of preliminary analyses of conditions that may be contributing to periods of baghouse exhaust stack downwash, and a plan for implementing a longer-term corrective action.

Corrective Action Plan

Corrective Measures Already Implemented – With the approach of winter, the 2016 asphalt paving season is nearing completion. Pyramid Paving anticipates seasonal shutdown of the Essexville plant on or around December 3. Until shutdown occurs, Pyramid Paving will not load delivery trucks with finished product during periods when the wind is blowing from a generally northerly direction. This temporary step should reduce the potential for unreasonable odors in the residential neighborhood located south of the plant.

Pyramid Paving has also already implemented a second corrective action. After an investigation of the baghouse system, an oil leak in a portable air compressor serving the pulse-jet filter clearing device was identified. Though not confirmed, it's possible that oil leaking into the baghouse exhaust air stream was increasing the density and/or enhancing the odor quality of the exhaust. Accordingly, Pyramid Paving has replaced the portable air compressor.

Investigation into Contributing Factors – Pyramid Paving, in association with its environmental engineering consultant, have conducted an initial investigation into design criteria/operating conditions that may contribute to off-site odors, including the down washing effect of the baghouse exhaust stack. The initial investigation focused on the following potentially contributing factors:

- **Direct process emissions** – There have been no substantive changes in asphalt mix design, drum operating conditions, liquid asphalt supply, or fuel usage in 2016 that would be expected to cause an increase in visible or odorous emissions, or contribute to baghouse stack down washing effects. Therefore, process changes are no longer being considered as a potentially contributing factor.
- **Baghouse filters** – Pyramid Paving has inspected the baghouse system and has found no tears or other significant deterioration of the bags. Therefore, this is not believed to be a contributing factor.
- **Influence of tall structures or obstacles** – Buildings or other obstacles (natural or man-made) located in the vicinity of a stack could change the trajectory of the wind flow approaching the stack such that the obstacle creates turbulent eddies that cause emissions from the stack to bend downwards and subsequently transport near ground level. There is an east-west oriented line of trees located along the northern property boundary of the plant. The tree line varies in height. Initial estimates suggest the tallest trees may be 72 feet in height. Though the tree line is situated approximately 300 feet from the baghouse exhaust stack, the trees may have a down washing effect on the stack when winds are blowing from a northerly direction.¹
- **Change in stack exhaust characteristics** – A change in exhaust characteristics serves as another factor that can cause emissions from a stack to bend towards the ground rather than rise up and

¹ As determined using the U.S. EPA's Building Profile Input Program (BPIP-PRIME), which is the building downwash algorithm approved for use in industrial applications; 40 CFR Part 51, Appendix W.

disperse. For instance, over-saturation of the exhaust stream, as well as sudden decreases in exhaust temperature and/or flow rate may serve to reduce plume rise from the stack. A review of operating conditions reveals that the baghouse stack exhaust temperature decreases during periods when off-site trucks are being loaded. The existing silo load-out capture system directly transfers captured emissions associated with truck loading to the baghouse for particulate control. However, the temperature of the ambient air being drawn to the baghouse by the load-out capture system is much lower than the drum exhaust that also vents to the baghouse, thus lowering the temperature of the baghouse exhaust (and possibly flow rate). The ambient air and silo emissions being drawn in by the load-out capture system may also be more saturated than the hot, dry air venting from the drum, thereby increasing the density of the stack exhaust. These conditions may be contributing to the observed stack down washing and will be a focus of the investigation during the off-season.

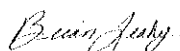
Plan for longer-term corrective action – As described above, initial corrective measures have already been implemented in order to reduce the potential for off-site odors during the final days of the 2016 operating season. Pyramid Paving will continue its investigation into the causes of the recent odors and additional potential corrective measures that can be implemented prior to start-up of asphalt operations in 2017. The following measures will be weighed for their effectiveness at reducing the potential for off-site odors/visible emissions:

- Increase the height of the baghouse exhaust stack to reduce the potential for emissions to drop to ground level.
- Increase fan speed to enhance plume rise (an acceptable corrective action under R 336.1901).
- Relocate the exhaust stream from the existing load-out capture system to the drum or otherwise pre-heat the load-out exhaust stream.
- Disconnect the load-out capture system from the baghouse and use a separate filter system to reduce particulate emissions associated with the truck loading operation.
- Implement design improvements to the silo load-out area to enhance the capture of emissions associated with truck loading.
- Other potential corrective measures identified as a result of the on-going investigation.

Pyramid Paving will keep the AQD apprised of additional corrective measures that may be implemented and will submit a timely Permit to Install application should any of the changes be subject to permitting under R 336.1201. Pyramid Paving has been operating in compliance with applicable air quality requirements at this location for many years and, as a good neighbor, is committed to identifying and implementing measures that will ensure continued compliant operation. We welcome your feedback and appreciate your patience as we work through this unanticipated situation.

Please do not hesitate to contact me at (616) 512-7018 or bleahy@barr.com if you have any questions or require additional information.

Sincerely,



Brian E. Leahy
Senior Meteorologist

cc: Bruce Weiss, Pyramid Paving