



April 18, 2024

Rachel Benaway
AQD, EGLE Kalamazoo District Office
7953 Adobe Road
Kalamazoo, MI 49009

RECEIVED
APR 24 2024
AQD - KALAMAZOO

Jenine Camilleri
AQD, Enforcement Unit EGLE
P.O. Box 30260
Lansing, MI 48909

RE: Knauf Insulation (B7205), 1000 East North Street, Albion, MI 49224 Response to
VN_20240401

Dear Ms. Benaway and Ms. Camilleri:

Knauf Insulation, Inc. (Knauf) received EGLE's April 2, 2024, Violation Notice regarding an inspection conducted at Knauf's Albion facility (located at 1000 East North Street, Albion, MI 49224) on March 20, 2024, and submits this response as requested.

For your reference, this letter repeats each of EGLE's findings and includes the requested follow-up regarding dates, explanation of causes and duration, status and actions taken or proposed to be taken in response. EGLE's Violation Notice is also included as Attachment A.

Rule 901 (R 336:1901): The facility caused the emission of an air contaminant or water vapor in quantities that cause injurious effects to human health or safety, animal life, plant life or property.

Comments by EGLE: *Vitreous liquid fallout was observed on vehicles in a parking lot adjacent to the facility. Multiple complaints of this nature have been received. Facility staff report they are aware that this is an ongoing issue.*

Knauf Response: Knauf's has determined that the escape of the binder/water mixture (a mixture of corn syrup and condensation) from SV-ML2ALB was caused when both specific temperature and pressure ranges in the atmosphere exist which cause condensation of the binder/water within the



stack. Therefore, it is a sporadic issue and not a continuous issue. The cause was not readily apparent to Knauf because it did not involve a mechanical/maintenance issue. Moreover, because this issue did not occur routinely or in any discernible pattern (as it does not always occur when similar weather patterns exist), Knauf had to conduct an investigation to determine when it occurred so as to determine the cause before it could commence engineering a solution that also maintained the control efficiency to meet the PM limits. Because this issue only occurs during precise weather conditions that are not predictable or controlled, and based on the evidence are not sustained for long periods of time, this became an arduous task. Based on Knauf's observations, records, and/or notification of fallout, Knauf is aware that this issue occurred on at least February 5, April 20, June 21, October 18, November 4, 2021, and October 18, 2022, and April 6, August 9, October 31, November 1, and December 18, 2023, and January 10, February 15, February 28, and March 20, 2024. While exact times were not always recorded it is known that Knauf did not track any of these incidents into the next day.

As stated above, Knauf conducted investigations that included contracting with third-party vendors, consultations with Knauf and third-party engineers, analysis of scrubber and stack configuration and conditions, collection of data, review of scrubber flows, and review of weather conditions to determine the cause of this issue and recommend response steps. Knauf and third-party vendors determined this was due to weather patterns causing condensation within the exhaust stack occurring after control. Knauf's vendors initially proposed the addition of another stack to separate the cooling and forming scrubber flows (cold and hot exhausts). So Knauf reached out to EGLE permitting to discuss this addition and the application process. Thereafter, other engineers disagreed that adding an additional stack to separate the exhaust streams would prevent the issue from occurring, so Knauf placed a hold on submitting a permit application. While Knauf has conflicting engineering opinions regarding separating the forming and curing scrubber flows, and extreme weather patterns may still be an issue, it is prepared to proceed with this separation, provided other engineering opinions do not provide other solutions. Knauf is prepared to include this in next year's budget, provided the modeling and EGLE's review of Knauf's forthcoming air application can adapt to this expedited schedule.

MI-ROP-B7205-2021a: FG-ML2ALB: Special Condition IV.1

Comments by EGLE: *Permittee shall not operate FG-ML2ALB unless the four wet scrubber control systems are installed, maintained and operated in a satisfactory manner.*

Knauf Response: Pursuant to MI-ROP-B7205-2021a: FG-ML2ALB: Special Condition IV.1, "[s]atisfactory operation of each high efficiency wet scrubber control systems is demonstrated by maintaining pressure drop, and scrubber liquid flow rate within 70 percent or more of the lowest value and 130 percent or less of the highest value of each monitored operating parameter recorded during the most recent acceptable stack test."



Forming Scrubbers 1 through 3 and Cooling Scrubber are installed, calibrated quarterly and operated pursuant to the manufacturer's recommendations. As provided to EGLE on March 27 and 28, 2024, Knauf's continuous process monitoring system data represents that these scrubbers were operating within the pressure drop and scrubber liquid flow rate limits established by the latest stack test and that no alarms occurred during the dates EGLE requested. As a part of this response, Knauf also reviewed ML2's records for all of the dates provided above. Knauf's found these scrubbers were operating in a satisfactory manner maintaining the pressure drop and scrubber liquid flow rate within the required parameters (note: Knauf's review includes all of ML2's scrubbers; other non-ML2 scrubbers had alarms during some of these times but are not a source of the issue). As stated above, the binder/water condensation is created by specific environmental conditions in the stack following the scrubbers not by unsatisfactory installation, maintenance or operation of these scrubbers.

Rule 910(sic) (R 336.1910): An air-cleaning device shall be installed, maintained and operated in a satisfactory manner and in accordance with these rules and existing law.

Comments by EGLE: *Facility reports that four scrubbers are operating at a velocity which prohibits the proper condensation of air contaminants and that an additional stack is required to separate cold and hot exhaust flows from the ML2ALB process.*

Knauf Response: See Knauf's response above regarding installing, maintaining and operating Forming Scrubbers 1 through 3 and Cooling Scrubber in a satisfactory manner. Knauf would like to clarify that its reference to scrubber velocity was referring to the velocity required to maintain the parametric monitoring pressure drop and liquid flow rate requirements. Thus, it was merely stating that despite meeting these scrubber pressure drop and liquid flow operating parameter requirements, condensation (caused by weather conditions) caused the issue to occur in the stack. Additionally, as discussed above, the proposal to add an additional stack to separate the cooling and forming scrubber flows (cold and hot exhausts) was a part of Knauf's engineering evaluation to create a solution which enables Knauf to maintain scrubber control efficiency to meet the PM limits while also preventing the condensation in the stack.

If you have any questions, please contact me at your convenience. I can be reached at 317-421-4702 or e-mail at adam.estes@knaufinsulation.com.

Sincerely,



Adam Estes, CHMM
Corporate HSE, Sr. Environmental Specialist
Knauf Insulation, Inc.

cc: Mr. Kevin Keen, Albion Plant Manager
Mr. Chris Mahin, HSE VP of HSE, Sustainability and Quality