



CERTIFIED MAIL – RETURN RECEIPT REQUESTED
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May 24, 2017

Todd Zynda, Environmental Engineer
Michigan DEQ - Air Quality Division
3058 West Grand Boulevard, Suite 2-300
Detroit, Michigan 48202-6058

Re: BASF Corporation, Wyandotte, MI - B4359 – Violation Notice Response

Dear Mr. Zynda:

In response to MDEQ-AQD's Violation Notice issued on May 5th, 2017, BASF Corp. has prepared the following response to the individual violations noted below (in the order presented in the Violation Notice).

Polyols Plant – FGPOLEMCON: As previously reported in the 1st half - 2016 semiannual B4359 Title V deviation report, most of the information you are requesting was submitted in that report (duration, cause, corrective actions, etc.). As reported then, the cause of the EO release was due to maintenance clearing of TK101B (EO storage tank) where process water with EO was sent to the Oxide scrubber (TK-403D) and interconnected neutralization tank (TK-155). The system experience over-pressurization due to the high loading of EO and heat generated from the conversion to glycol resulting in the lifting of the PSV on TK-155 which led to unauthorized release of EO vapor to atmosphere. The total amount release is estimated at 460 lbs., the PSV vented for approximately 89 seconds. Once the PSV reseated, process vents were restored to their normal control device path (to the Polyol Thermal Oxidizer - FGPOLENCON). In addition to the immediate corrective actions noted in the above referenced deviation report, the EO tank (TK101B) was modified to add a new low point sump so that the suction pipe from the pump can remove nearly all the tank contents leaving the tank with a minimal heel. This will reduce the need to send a large heel to the neutralization tank which is subsequently controlled by the Thermal Oxidizer.

As to the specific rule violation, we believe that upset/malfunction emissions are not "authorized emissions" per se under part 201 rules and therefore cannot count towards the hourly/daily emission limits in SC II.B.1.1. (6.4 lbs./hour; 153.6 lbs./day). Having said that, we do however acknowledge (as reported in the above deviation report), that we did not comply with table 2.3 FGPOLEMCON requirements, specifically to comply with 40 CFR



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63.1425 B(1) ii - to control process vents & maintenance emissions of epoxides from the scrubber with the thermal oxidizer – to maintain an outlet concentration of total epoxides or TOC after each combustion, recapture, or recovery device of 20 ppmv or less, which is outlined in SC VI (1) of Table 2.3 as an underlying requirement. No further action is required to operate and maintain compliance with these permit conditions.

Chemical Engineering – FGCHEORGACT: In September 2016 BASF initiated a change to the EUCHEORGACT process to manufacture a different product chemistry (X-5400) utilizing equipment covered under permit # 80-11. The primary change was the use of n-Hexane as the reaction/carrier solvent (instead of Chloroform). BASF performed a rule 285 (b) “non-meaningful increase” analysis using AQD’s prior hazard potential comparison guidance to determine if the change could be made under this exemption. The analysis passed with less than a 10% increase in hazard potential (2.5% actual increase in hazard potential). Because the processing steps are slightly different for the manufacture of X-5400, including using the condenser in a refluxing and decanting step (with no emissions), the primary condenser was changed to run on chilled water @ 39 F and is as effective in controlling hexane as two condensers are in controlling chloroform. We felt that the Rule 285 (b) exemption allowed the “condenser system” change given its equivalent control with chilled water and passing hazard potential analysis. When the change was made, the temperature probe was not moved to the new outlet of the primary condenser, therefore we do not have the required compliance data as required under SC VI-1. We do however have the chiller water temperature data as a surrogate for monitoring the outlet temperature of the condenser. Therefore, BASF does not agree that we failed to operate the control equipment properly as a violation of Rule 910. Further we assert that the Rule 285 (b) analysis supported the change in the operation of the condenser system which still complied with the underlying Rule 225 analysis in SC IV-1. In order to clarify the underlying applicable requirements we assumed allowed under the Rule 285(b) analysis, BASF will initiate a permit modification (via a PTI application) to address these operating condition issues with using n-Hexane as the reaction/carrier solvent with one condenser and/or whatever control equipment is required to pass rule 225. This PTI submittal will be submitted by 07/31/17. In the interim, BASF will install the temperature probe on the outlet of the primary condenser and begin monitoring the outlet temperature of the condenser when vented to atmosphere (when not refluxing) by 06/23/17.

Wyandotte Resins – FGPRODUCTS; FGDRUMMING: These stacks were installed when the facility was built in 2008/9 and were not installed at the heights reference in the permit. BASF will extend these stacks to their required heights or submit a PTI should the evaluation of the underlying rule (Rule 225) show that there isn’t a need for the required stack height. There is some question as to why the underlying rule (Rule 225 – toxic air contaminants) is required on the dust collector stack due to the lack of significant amounts of modelled constituents in its airstream (i.e. Ammonia, ethyl acrylate, etc.). If the stack height requirement is found to be required, it may take additional time to engineer a stack height extension of the dust collector stack to 58 ft. due to its current orientation and the



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issues of weight and support required to extend a stack to this height. In this case, we will need to the end of the year (12/31/17) to accomplish the engineering, procurement and installation of this new stack. As for the drumming line stack, removal of the rain cap and extending the stack another 8 feet should be completed by 8/30/17.

Wyandotte Resins – FGRAWMATLS; FGRT0: The stack test did fail to meet the required destruction efficiency (DE) of VOC of 98%, it did however pass the ethyl acrylate hourly emission limit of .14 lb/hr with a .09 lb/hr. result. According to Durr Systems, (the RTO manufacturer), the failure of the stack test is more likely an issue of leakage around the rotary valve causing some bypassing of the combustion chamber during heat train cycling than an absolute temperature issue (requiring more heat to achieve a higher DE). The exact cause won't be revealed until the internals of the unit are disassemble for inspection and replacement. As communicated to you on 03/24/17, Durr Systems will be onsite the week of June 5th, 2017 to complete repairs to the RTO. They will be replacing the rotary valve, seals and the thrust bearing on the main rotary shaft of the unit. They will also inspect the internals of the rest of the unit to ensure that it meets the original specifications. We are prepared to cover all contingencies during this shutdown to restore the operation of this unit to its original specification. Once repaired we will repeat the stack testing with ARI to confirm the VOC destruction efficiency. We will submit the 30-day stack testing notification to the AQD by 06/01/17.

Should you have any concerns or questions regarding the information contained in this submittal please contact me at 734-324-6102.

Sincerely,

A handwritten signature in black ink, appearing to read "Jordan Thompson".

Jordan Thompson
Sr. EHS Specialist

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