

B2155
MANILA

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

B215550255

FACILITY: SOLUTIA INC		SRN / ID: B2155
LOCATION: 5100 W JEFFERSON AVE, TRENTON		DISTRICT: Detroit
CITY: TRENTON		COUNTY: WAYNE
CONTACT: Charles Anderson , Environmental Specialist		ACTIVITY DATE: 07/17/2019
STAFF: Jill Zimmerman	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: Target Inspection		
RESOLVED COMPLAINTS: C-18-00795, C-18-00867, C-18-00868, C-18-01663, C-18-01665, C-19-01061, C-19-01062, C-19-01297, C-19-01413, C-19-01414, C-19-01415, C-19-01416, C-19-01454, C-19-01468, C-19-01469, C-19-01485, C-19-01499, C-19-01512, C-19-01513, C-19-01554, C-19-01627, C-19-01628, C-19-01687, C-19-01688, C-19-01844		

DATE OF INSPECTION : July 17, 2019
 TIME OF INSPECTION : 9:30 am
 NAICS CODE : 325211
 EPA POLLUTANT CLASS : VOC
 INSPECTED BY : Jill Zimmerman
 PERSONNEL PRESENT : Charles Anderson, Environmental Specialist
 Johan, Health and Safety
 FACILITY PHONE NUMBER : 734-672-7895
 FACILITY EMAIL : ceande1@eastman.com

FACILITY BACKGROUND

Solutia is an organic chemical company, manufacturing a variety of resins. In the past, Solutia maintained operations on both sides of Jefferson Avenue in Trenton. However, the inorganic operations on the eastern side of Jefferson Avenue are no longer produced, and the buildings associated with this process have been demolished. Located on the western side of Jefferson Avenue is the organic resin process. The Saflex process was located on the same side of Jefferson Avenue, though this process was shut down in March 2009 and all the equipment associated with this process has been removed from the facility. The facility employs approximately 140 people and operates twenty-four hours per day, seven days per week.

Solutia is a Title V / ROP source due to the potential to emit more than 100 tons of volatile organic compounds per year. Although the facility has an opt-out permit, limiting the emission of HAPS, the emission limit of 9 tons of an individual HAP per twelve month rolling time period was violated from February 2015 through January 2016 for the HAP vinyl acetate. The main HAPs of concern are vinyl acetate, ethyl acetate and acetaldehyde.

COMPLAINT/COMPLIANCE HISTORY

Twenty odor complaints have been received in the past year. On August 12, 2019 a violation notice (VN) was issued after odor complaints were verified. An additional VN was issued on September 12, 2019 after odor complaints called into the PEAS line were verified by field staff.

On November 23, 2015 I issued a VN after process emissions and unplanned releases caused by twelve month rolling time period emissions of vinyl acetate to exceed the permitted limit of nine tons per year. The facility regards the unplanned releases as malfunctions. Regardless, the relevant emission limit includes emissions from process operations and all other operating scenarios. The EPA has also issued a violation based on these emissions. However, no resolution to resolve the violations have been reached.

On December 19, 2018 the EPA decided to issue a new NOV/FOV to Solutia alleging that

Solutia failed to limit vinyl acetate emissions to less than the permit limit of 9 tons per year, limit VOC emissions to less than 221 pound per day, control HAPs by 85% from the sum of all batch process vents, conduct LDAR at over 1,200 components, valves, connectors, pumps, and a pressure relief valve, and operate and maintain its process equipment in a manner consistent with safety and good air pollution practices for minimizing emissions.

PROCESS EQUIPMENT AND CONTROLS

Vinyl acetate is added to one of three polykettle reactors (PK). The temperature and pressure are adjusted to allow the vinyl acetate to polymerize. After the reaction occurs, the poly vinyl acetate is mixed with water and alcohol and transported to the busvar building. Here the product goes through many stages where it is mixed with ethyl alcohol and water. Then the product settles out. Next, the product moves to the dryer building, where it is dried to a powder form and crushed so that the product particles are the desired size for the customer. From here, the final product is placed in bags or in barrels. Occasionally, the final product is placed in hopper trucks. A co-product is produced as a result of this process, ethyl acetate, which is commonly found in nail polish remover or a solvent for other solutions is also collected and sold to customers.

INSPECTION NARRATIVE

Prior to the onsite inspection, I performed odor surveillance in the area surrounding the facility. I smelled a distinctive chemical odor suspected to be coming from Solutia along Jefferson Avenue, just north of the facility. I was not able to detect the odor at the intersection of Jefferson Avenue and Van Horn Road. I also was unable to detect the odors south of the facility. There was a south wind based on the windsock at the facility. Therefore, I was detecting the odors while I was downwind of the facility. The odors were level 1 in intensity.

I arrived at the facility on July 17, 2019 at 9:30 am and met with Mr. Charlie Anderson. Together we discussed the process at the facility and the goals of the inspection. We discussed the recent odor complaints that have been received. I explained that I would let the facility know each time that I received odor complaints to help determine the cause of the odor. I explained that I would be performing odor surveillance frequently in the area.

Mr. Anderson explained that no changes had been made to the facility process since my last inspection. Mr. Anderson said that the facility and EPA had not yet reached a resolution to the EPA violation issued in 2015 but was aware of discussions to resolve this violation.

During 2015, the facility experienced at least four unplanned releases of vinyl acetate, which is considered a hazardous air pollutant (HAP). These releases were the result of a disc rupture event. In the largest release, which occurred in February 2015 more than 3 tons of vinyl acetate were released. This release occurred when the incorrect disc was placed in one of the PK vessels. The facility attempted to short stop the reaction, which involves injecting iodine into the reactor to stabilize the reaction. This did not work properly, and resulted in the release. This release occurred less than a week after a smaller release of more than 1 ton of vinyl acetate. The last release was on Tuesday August 18, 2015; there was a release when the disc rupture failed, resulting in slightly more than a ton of vinyl acetate being released. This release occurred when the facility lost all electric power including in the uninterrupted power supply line. The facility changed the rupture disc used in the process and the malfunctions seem to be better controlled.

The facility is required to perform a leak detection evaluation quarterly. The facility also performs weekly leak detection surveillance and repairs any leaks promptly. A copy of the

formal leak detection reports is sent to the EGLE office quarterly. The most recent report was received on July 24, 2019 and covered the time period between 4/1/2019 and 6/30/2019. Ten unsafe to monitor components were found. All leaks were repaired within fifteen days.

APPLICABLE RULES/PERMIT CONDITIONS

Solutia is currently operating as a Title V source under MI-ROP-B2155-2009a. During the onsite inspection, I had requested a copy of the monthly and 12-month rolling average emission records for the facility wide HAPs, which is attached to this report. Additional records were collected from the facility that contain information that the facility has deemed as confidential. While EGLE may not agree that this information is confidential, the records will be filed as confidential at this time.

The facility has a source wide condition which limits the emission of a single HAP to less than 9.0 tons per year and aggregate HAPs to less than 22.5 tons per year. The last accidental release of VA occurred on January 2, 2018 when 1.25 tons was released. Between June 2018 and May 2019, the highest reported emitted HAP was 6.6 tons of vinyl acetate during October 2018. The highest aggregates HAP during that time period was 9.1 tons in October 2018.

The FGBUTVARN is limited to 13 batches per day and 4745 batches per year. The facility reported in MAERS that 2,180 batches were made during 2018, which is in compliance with the limit. The highest reported emissions of VOC from the polykettles was 1.81 tons per year in October 2018, which is less than 3.3 ton per year limit. The facility appears to be operating in compliance with the conditions for this emission unit.

The FGSELVAVARN is limited to less than 3.08 tons VOC per year. The highest reported emissions of 1.13 tons per year occurred in September 2018, which is less than the permitted limit.

Solutia was issued permit 12-13C on April 10, 2018 to revise conditions for the polykettles. The permit limits the VOC emissions to 3.3 tons per year. Based on a review of MAERS for 2018, the polykettles emitted less than 1.7 tons. The flowrate of the scrubber and the temperature of the condensers are monitored and recorded electronically in the control room.

Between April 30, 2018 and May 4, 2018 Solutia performed stack testing on the polykettles as a condition of PTI 12-13A. The test was to verify the hazardous air pollutants (HAPs) control efficiency of the polykettle scrubber control devices. The scrubber efficiency was greater than 98% for all test runs.

MAERS REPORT REVIEW

On May 31, 2019, I performed an audit of MAERS submitted on March 13, 2019. The supporting documentation appears to verify that the emissions have been reported accurately.

FINAL COMPLIANCE DETERMINATION

Solutia is not operating in compliance with the current ROP. The facility was cited by both EGLE and EPA for exceeding the individual HAP of 10 tons per year. This violation occurred during 2015 when the facility experienced multiple releases that resulted in large amounts of vinyl acetate being emitted. The twelve-month rolling average for VA exceeded the permit limit of 9 TPY between July 2015 and January 2016, and the exceeded 10 TPY from April 2015 through January 2016. Therefore, the facility stands in violation of Special Conditions I.1 of the source wide conditions in MI-ROP-B2155-2009a. The EPA has decided to issue a new

violation in December 2018. The DEQ's Violation Notice of November 23, 2015 and both USEPA's Finding of Violation remain unresolved.

NAME Jill Zinner

DATE 9/30/19

SUPERVISOR JK