B2155
MAW124

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

B215531304

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:** 08/20/2015
STAFF: Jill Zimmerman	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Target Inspection		
RESOLVED COMPLAINTS:		

DATE OF INSPECTION	:	August 20, 2015
TIME OF INSPECTION	:	10:00 am
LEVEL OF INSPECTION	:	II
NAICS CODE	:	325211
EPA POLLUTANT CLASS	:	VOC
INSPECTED BY	:	Jill Zimmerman
PERSONNEL PRESENT	:	Charles Anderson, Environmental Specialist
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 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 of the equipment associated with this process has been removed from the facility. The facility employs approximately 140 people.

Solutia is a Title V / ROP source due to the potential to emit more than 100 tons of volatile organic compounds per year. The facility has an opt-out permit, limiting the emission of HAPS. The main HAPs of concern are vinyl acetate, ethyl acetate and acetaldehyde.

COMPLAINT/COMPLIANCE HISTORY

One odor complaint was received on April 23, 2014. While preforming odor surveillance in the area I did verify a level one chemical odor similar to acetone. No additional complaints were received.

OUTSTANDING VNs

No Violation Notices (VN) were issued to this facility since the last inspection in 2013.

PROCESS EQUIPMENT AND CONTROLS

Vinyl acetate is added to one of three polykettle reactors (PK). The temperature and pressure is 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 is allowed to settle out. Next, the product moves to the dryer building, where it is dried to a powder form. 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.

INSPECTION NARRATIVE

I arrived at the facility on August 20, 2015 at 10:00 am and met with Mr. Charlie Anderson. Together we discussed the process at the facility. We also discussed the recent vinyl acetate releases during the past few months. Mr. Anderson described the process using a diagram. I also asked Mr. Anderson to provide emission records that are required in the ROP.

During the past year, there have been at least four accidental releases of vinyl acetate, which is considered a hazardous air pollutant (HAP). These releases have been 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. Most recently, 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.

During the onsite inspection, PK3 was experiencing a hot cleaning cycle, PK2 had completed the reaction, and PK1 was in the process of reacting. While we were on the roof of the Gelvar building, no visible emissions were seen coming from any of the condensers or the scrubbers. A white substance, which was poly vinyl acetate, was present on the roof as a result of the accidental release which occurred on August 18, 2018. Poly vinyl acetate is not considered a HAP. Mr. Anderson removed the cap on the emission stack from PK3 so that we could see that the rupture disc was still in place and operating properly. There was a rigid disc in place. During the inspection, the roll dryer was not operating, and no product was being packaged. We walked through the dock area, where railcars are brought in and vinyl acetate is unloaded to be used in the process. During the onsite inspection, no rail cars were being unloaded. Near this area is one of the emergency fire buildings. There is a diesel engine in the building that is used should there be an emergency. The engine is tested monthly, and operates less than 50 hours per week. We walked pasted the biofilter. Earlier this summer, the biofilter was treated with roundup for weed control. The weeds have returned, and the facility is in the process of determining the treatment schedule for this weed control. Samples were taken from the biofilter since it was treated with roundup which demonstrated that the microbes are still working in the biofilter.

Currently the facility uses steam which is generated by DTE Trenton Channel plant located across the street from Solutia. Solutia has been told that DTE Trenton Channel will stop using coal at the plant, and will no longer be able to provide steam for Solutia. Solutia is planning to install a few boilers so that the facility can generate its own steam. Solutia is researching an option where DTE would install and operate the boilers or Solutia could rent the boilers.

Solutia used to operate a phosphate plant across the street from the current resin plant. This facility is no longer standing, though Solutia is removing and monitoring the groundwater at this location. Currently, the water is pumped into trucks and is disposed of off-site. Solutia is

planning to install a ground water remediation system to treat the groundwater. This process will be exempt from permitting based on Rule 285(m).

APPLICABLE RULES/PERMIT CONDITIONS

Solutia is currently operating as a Title V source under ROP MI-ROP-B2155-2009a. During the onsite inspection, I had requested a copy of the monthly and 12-month rolling average emission records for all emission units. I received a source wide total of the emissions. The records that I did receive did not appear to contain the emergency releases that were reported to DEQ during the last twelve months. This is evident because a monthly vinyl acetate emission rate of 0.578 tons is reported by the facility for February 2015, wherein two releases occurred totaling 4.3 tons.

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 emission records that I received show that the facility emitted 6.161 tons of vinyl acetate between August 2014 and July 2015. These records do not appear to contain the reported accidental emissions that have occurred during the past year. These accidental emissions would increase the vinyl acetate emissions by 4.61 tons, which brings the total amount released during the past 12 months to 10.771 tons. This emission value exceeds the source wide conditions which limits HAPs. Therefore the facility is not in compliance with this source wide condition. The facility is operating the LDAR equipment, with quarterly scans of the required equipment. These reports are submitted to the AQD as required.

The FGPOLYKETTLES have had multiple accidental releases during the past year. This emission unit is required to have a MAP. The facility should consider reviewing the MAP to address the accidental releases that have occurred. The scrubbers were working properly during the onsite inspection. The facility last stack tested the scrubbers in May 2013.

The FGBUTVARN is limited to 13 batches per day or 4745 batches per year. The facility reported in MAERS that 3083 batches were made during 2014, which is in compliance with the limit. The facility reported emitting about 1.9 tons of VOC during 2014 which is less than the limit of 9.02 tons per year. The facility appears to be operating in compliance with the conditions for this emission unit.

The FGGELVAVARN is limited to less than 3.08 tons VOC per year. Based on the emissions reported in MAERS, the facility emitted about 1.14 tons of VOC during 2014, which is less than the permitted limit. During 2014, the facility completed about 758 batches, which is less than the permit limit of 996.5 batches per year.

MAERS REPORT REVIEW

On May 31, 2015 I performed an audit of MAERS submitted on March 16, 2015. The company reported on 84 emission units. The facility reported emissions of 1.36 tons PM10, and 101.25 tons of VOC, including 5.89 tons of acetaldehyde, 0.28 tons methanol and 7.91 tons vinyl acetate in 2014. All emissions appear to have been reported accurately.

FINAL COMPLIANCE DETERMINATION

Solutia does not appear to be in compliance with the source wide condition of emitting less than 9.0 tons of an individual HAP per year. The facility reported emitting 6.16 tons vinyl acetate during a 12- month period ending in July 2015. When this value is added with the accidental releases that were reported, the facility emitted 10.771 tons vinyl acetate was

actually emitted during this time period. All other conditions of the ROP that were evaluated appear to be in compliance. Due to the multiple accidental releases, the facility may consider reevaluating the MAP for the polykettles to address what is being done to prevent the accidental releases in the future.

NAME Jill Zimmerman DATE 9/22/15 SUPERVISOR JK