

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: On-site Inspection

B21559084

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: 05/11/2021
STAFF: C. Nazaret Sandoval	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: FY 2021 Scheduled Inspection		
RESOLVED COMPLAINTS:		

SRN: B2155  
 SOURCE NAME: SOLUTIA INC.  
 ADDRESS: 5100 W JEFFERSON AVE, TRENTON  
 DATE OF INSPECTION: May 11, 2021  
 INSPECTOR: Nazaret Sandoval, Air Quality Division  
 SOLUTIA CONTACT: Charles Anderson, Environmental Specialist

## 1. FACILITY BACKGROUND

Solutia Inc. a manufacturer of materials and specialty chemicals was formed on September 1, 1997, and it was part of the Monsanto Company chemical business. In July 2012, the company was acquired by Eastman Chemical Company.

The Solutia site located in Wayne County, in the City of Trenton, on West Jefferson Avenue is bounded at the north by Van Horn Rd, at the east by the Detroit River, at the south by Toledo Avenue, and the west by Hoover Rd.

This manufacturing facility has gone through noticeable changes over the years. When first installed, there were operations on both sides of Jefferson Avenue. The inorganic operations (Phosphates manufacturing) were on the eastern side of Jefferson Avenue and the western side contained the organic chemical manufacturing divided into two portions. The northern portion was occupied by the Saflex (interlayer for laminated glass) manufacturing process, and the resin plant was to the south of the Saflex building. However, the process equipment associated with the Phosphates operations were demolished years ago. Likewise, the Saflex production at the Solutia Trenton plant was discontinued, and the process was shut down in March 2009. All the equipment associated with the Saflex process was removed from the facility in April of 2009. Therefore, after 2009, the remaining operations at the Trenton site are those involved with the manufacture of organic resins: polyvinyl butyral (PVB), branded as Butvar® used primarily in interlayers for automotive and architectural laminated glass, and Gelva® resins (polyvinyl acetate polymer) used as adhesives, binders, chewing gum bases, coatings, hot melt adhesives, paints, paper coatings, textile sizes and thickeners.

## 2. PROCESS DESCRIPTION AND EQUIPMENT

The plant operated twenty-four hours per day, seven days per week. The operation of the processes, referred as Gelva and Butvar, and the equipment involved in the resins production are described herein:

### Gelva Building:

The Gelva building contains three reactors or "polykettles" where vinyl acetate is polymerized into polyvinyl acetate slurry. The polykettles are cooled by river water. Ethanol is added to the slurry and is then collected as a varnish. Emissions from the

varnish storage tanks and polykettles are controlled by primary and secondary condensers and the polykettles are also controlled by three scrubbers, one for each polykettle.

#### Butvar Building

The varnish (polyvinyl acetate) is then transferred to the Butvar building where butyraldehyde and sulfuric acid are added to make a polyvinyl butyral resin (PVB). The resin is then washed and centrifuged. Emissions from this process are controlled by a condenser.

#### Recovery Structure

Some of the waste streams from the Butvar process are distilled and reused in the process or recovered. The Ethyl Acetate is recovered as a by-product and sold. The excess ethanol is refined and returned to the process.

#### Drier Building

After centrifuge, the recovered resin is then sent to the drier building. The resin is dried in a rotary drier and a crusher breaks up resin clumps before the product is bagged (PVB resin beads). Particulate emissions from the drier are controlled by two dust collectors prior to the exhaust stream entering the biofilter. Particulate emissions from the crusher are controlled by a dust collector.

#### Biofilter

VOC emissions from the drier are routed to a biofilter. The VOC-laden exhaust enters the bottom of the biofilter bed. Microbes in the bed digest the organics and the treated exhaust exits the top of the biofilter, not unlike a compost pile. The biofilter is open to the atmosphere.

#### Storage Tanks

A tank farm is located at the southern property line. Materials such as vinyl acetate, ethyl acetate, butyraldehyde, ethanol and sulfuric acid are stored in the tanks.

### **3. PERMITS BACKGROUND, ODOR COMPLAINTS AND COMPLIANCE HISTORY**

Solutia is considered a major source regulated under the Title V program due to the potential to emit more than 100 tons of volatile organic compounds (VOC) per year. The facility is regulated under ROP permit No. MI-ROP-B2155-2009a (herein the ROP), issued on December 18, 2012. In addition, PTI 93-19A, issued on October 16, 2019, not incorporated into the ROP, regulates the pre-extraction column (EUPREEXTCOLL).

The facility was considered a minor/area source of HAPs since it has enforceable emission limits for individual and aggregate HAPs that are less than the respective major source thresholds. However, the facility experienced a series of emission events in 2014 and 2015. Through these events, the facility's actual emissions of an individual HAP, vinyl acetate, exceeded both the emission limit for individual HAPs and 10 tons per year. Therefore, the Air Quality Division (AQD) issued the facility a Violation Notice on November 23, 2015, and the US Environmental Protection Agency (EPA) followed with a Finding of Violation (FOV) on August 24, 2016. On December 19, 2018, the EPA decided to issue a new NOV/FOV to Solutia alleging (among other things) that Solutia failed to limit vinyl acetate emissions to less than the permit limit of 9 tons per year.

This was a standing issue for various years and there was no closure of the negotiations between the EPA and Solutia to resolve the cited violations until recently.

#### EPA's Administrative Consent Order No. EPA-5-20-113(a)-MI-01

Both EPA's FOVs were resolved by EPA's Administrative Consent Order No. EPA-5-20-113 (a)-MI-01 with effective date of April 28, 2021. B. Travis Smith, President of Solutia Inc., signed the order on April 14, 2021, and agreed to the terms of the Order. The AQD considers the Order a resolution to the Violation Notice of November 23, 2015.

Appropriate compliance measures were not set forth in EPA's Order because the facility had planned to permanently shut down. Instead, the Order required Solutia:

- 1) To submit a certification to the EPA by May 7, 2021, that it has permanently shut down the facility at Trenton and that is no longer operating any processes, equipment, or units regulated under the CAA for manufacturing purposes.
- 2) To rescind its Clean Air Act permits and permit renewals or applications, not later than a year from the order's effective date.
- 3) To negotiate with EPA on appropriate compliance measures regarding the allegations in the Order if the facility does not shut down.

Solutia responded to the requests solicited in the Order. For details refer to the second item in the Section "POST-SHUTDOWN UPDATES", of this inspection report.

Note: Solutia's shut down plans are unrelated to EPA's Order enforcement actions.

#### Odor Complaints

This facility has had a history of odor complaints and AQD Detroit District has issued Violation Notices (VN) when a complaint investigation by AQD field staff has verified Solutia's responsibility for the odor. The last VN associated with odor complaints was issued by AQD on 9/12/2019. Despite the imminent closure of the plant operations, AQD Detroit District remained attentive and responsive to the odor complaints, making the facility aware of the citizen complaints. From January 1, 2020, to April 30, 2021, AQD Detroit District received fourteen (14) odor complaints attributed to Solutia's operations by the complainants. However, after staff field investigations, only some of them were associated with Solutia and none of them resulted in VN. Some of the odors reported in 2021 appeared to be associated with the plant shut down and cleaning operations.

#### **4. FACILITY UPDATE AND PERMANENT SHUTDOWN**

- In early August 2020, Charles Anderson, (Solutia's Environmental Specialist) notified the AQD Detroit District office via electronic mail (email) that the Solutia Trenton facility was scheduled to permanently cease operations.
- The original date for the permanent resin production shutdown was set to be at the end of year 2020. However, on October 19, 2020, Mr. Anderson sent another email indicating that the production shutdown date for the resins plant had been changed to January 20, 2021. This one-month change was necessary to provide for increased demand of a resin product.
- Later in the year, on December 21, 2020, I received another update from Mr. Anderson indicating that the plant closure date was moved to the end of April 2021. In addition, he said that Solutia intended to decommission and clean equipment no later than May 2021. They started the discussions/negotiations to determine the fate of the equipment to vacate the lot. The action plan was not clear at that time, but Solutia requested a one-year period to request a void and withdrawal of their air permits. Mr. Anderson wanted to assure that the ROP and PTIs were active until the shut-down was completed and all clean-up activities related to air permitted operations concluded.

- On April 26, 2021, Mr. Anderson sent a final notice indicating that the plant was running its last production week and it will permanently cease resin production on April 30, 2021.
- I scheduled a facility inspection for May 11, 2021, within the FY 2021 inspection calendar, to assess the status and the fate of the processes, equipment, or units regulated under the Clean Air Act after the shutdown (Refer to INSPECTION NARRATIVE).

## 5. INSPECTION NARRATIVE

I arrived at the facility on May 11, 2021, at 10:00 am and I discussed the purpose of the inspection with Mr. Charlie Anderson. The purpose of the inspection was to determine the facility's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Particularly, the goal of the site visit was to verify the cessation of the manufacturing operations at the Solutia Trenton facility and to confirm that it was no longer operating any processes, equipment, or units regulated under the CAA, permit MI-ROP-B2155-2009a, and Permit to Install No. 93-19A, for manufacturing purposes.

Here is a description of the walkthrough and my observations:

The plant was not operating at the time of the visit and Mr. Anderson confirmed that the official shutdown date was April 30, 2021. During the opening meeting with Mr. Anderson, I discussed the ROP semiannual, and annual reports for year 2020, as well as the 2020 MAERS submittals.

I asked Mr. Anderson to describe the current shutdown activities and the timeline for equipment decommissioning. He contacted the senior Process Engineer Specialist at the Provox Building, Mr. Ray McMurphy, who was at the control room and accompanied us during the plant walkthrough. Mr. McMurphy showed me various screens in the control room depicting sections of the process operations and I verified that the production areas were shutdown. However, there were a few unit operations that seemed active. Mr. McMurphy explained that the chillers, the collector tanks and the pumping system were still operating. The plant uses water/glycol solution to transfer the heat to and from the chillers to maintain a specific temperature that allows decanting from the collector tanks. Therefore, they have to keep the chillers operating until all product is decanted. As we walked by the various buildings and process areas described earlier in this report under "Process Description and Equipment", Mr. McMurphy indicated that no raw material has been processed since the cessation of the operations and since then they have been removing process materials, draining, and flushing all vessels and removing piping sections to and from each vessel and piece of equipment. Most storage tanks were drained and flushed except for the ethanol tanks. Additionally, the power supply was disconnected to all the main process equipment as well as the instrumentation. The wastewater pretreatment plant was in operation and it will remain operating to manage the site stormwater. However, this operation is not regulated by AQD and does not require a CAA-related permit. Since drainage and the clean-up was still taking place, Solutia will maintain the ROP active until all the process material-related cleanup activities are concluded.

We discussed the recent Administrative Order (Order), EPA-5-20-113(a)-MI-01, issued by the EPA, which is effective on April 28, 2021. The AQD considers the Order a final resolution to the Violation Notice issued to Solutia in 2015. I discussed the Compliance Program, which is cited in paragraphs 92 through 95, and contain language concerning the

plant shutdown. (Refer to Final Compliance Evaluation for details). A copy of the Order is saved in the Detroit District Solutia's files

Based on my observations, it appears as if the plant has permanently shut down all the processes regulated by AQD and there is no further manufacturing. I indicated that I would keep open communications with Mr. Anderson until we reach and agree on the appropriate time for voiding the ROP

## **6. POST-SHUTDOWN UPDATES**

- After the inspection of May 11, 2021, I maintained communication with Mr. Anderson to receive updates about the "post-shutdown" activities. Based on his information I discussed with him the appropriate timing and procedures for ROP void. On September 7, 2021, he provided the following information: "All of the plant equipment has been drained and cleaned with the exception of one last tank that holds ethanol – EUAALC21-41. Most of this tank's contents are currently planned to be shipped for use at another Eastman Chemical Company site. The remainder of the contents will be sent out for disposal by incineration. EUALC21-41 is expected to be emptied and cleaned by the end of September".
- An official letter from Solutia, dated December 1, 2021, was received by AQD Detroit District office, with copy to the EPA. The letter requested AQD to void MI-ROP-B2155-2009a and the Source-Wide Permit to Install MI-PTI-B2155-2009a, as well as any remaining CAA -related Wayne County permits and/or standing permits or permit applications issued to Solutia and/or Monsanto Chemical Company for the site. The letter explained that all manufacturing processes are no longer operable and considered permanently shut down. All process material-related cleanup activities are concluded.
- In a letter dated December 29, 2021, sent to Solutia's Site Manager Mr. Rick Turigliatto, AQD approved Solutia's request cited on the item above.
- On April 14, 2022, at about 4:30 PM I drove by Solutia and observed that the plant equipment was still standing at the site. I stopped and asked the guard if there was an operator who could give me information about the fate of the plant-site. At the plant entrance I talked to Mr. Jeff Brock, Plant Operator. He said that the negotiation date for the site-sale has been postponed several times. May 13, 2022 was the last date given to them for the closure of the deal.

## **7. COMPLIANCE EVALUATION**

For this inspection, the evaluation of Solutia's compliance with the requirements and special conditions contained in the ROP was limited to the assessment of Solutia's reporting and certification (i.e. semiannual deviation reports, Rule 912 reports, compliance certifications and report certifications), and the completeness of its submittals.

Under General Conditions 19 through 24 of Solutia's ROP, Solutia is required to annually certify its compliance with the ROP as detailed in the ROP's special conditions except for deviations that have been or are being reported to AQD Detroit District Office.

For the evaluated period, Solutia appears to be in compliance with the terms and conditions contained in the ROP the certification requirement; the certification reports included the following:

- a. The identification of each term or condition of the permit that is the basis of the certification.



- b. The compliance status of the stationary source with respect to each identified term or condition;
- c. Whether compliance was continuous or intermittent;
- d. The methods used for determining the compliance status of the stationary source, currently and over the reporting period consistent with subrule (3)(a), (b), and (c) of this Rule 213.

Solutia timely submitted to the AQD Detroit District Office the semiannual certified reports of the required monitoring, as detailed in the special conditions. All instances of deviations from ROP requirements during the reporting period were clearly identified in the reports.

When deviations occurred, they were promptly reported and recorded in the semiannual reports. All the report described the reasons for each deviation and the actions taken to minimize or to correct each deviation. The reported deviations did not exceed the emissions allowed under the ROP.

In conclusion, the semiannual deviation reports and annual certifications were timely submitted. For the list of reports, the specific details and received dates, please refer to the Full Compliance Evaluation (FCE) for FY 2021.

Michigan Air Emission Report System (MAERS) – General Condition 24

On 5/22/2021 Solutia timely submitted the emissions inventory for reporting year 2020. The ROP certification was received by AQD office on 2/25/2021. The report was audited by AQD. The supporting documentation appears to verify that the emissions have been reported accurately. For details about the AQD audit please refer to the comments included in the Compliance Activity Report saved in the MACES database under No. CA\_ B215557649.

EPA's Administrative Consent order No. EPA-5-20-113(a)-MI-01

The facility has been in violation of Special Conditions I.1 of the source wide conditions in MI-ROP-B2155-2009a, and AQD issued a VNs in 2015 and 2016. The EPA also issued violation notices, the last one in December 2018. The AQD's VN of November 23, 2015, and both USEPA's Finding of Violation were resolved by EPA's Administrative Consent order No. EPA-5-20-113(a)-MI-01 with effective date of April 28, 2021.

**8. CONCLUSION**

At the time of completion of the FCE, Solutia appears to be in compliance with all of its applicable requirements. AQD has verified the facility has ceased all manufacturing at this site and is only operating a wastewater pretreatment plant for the management of the site's stormwater.

NAME Handoval

DATE 5/13/2022

SUPERVISOR JK