

RCRA Inspection Report

1) Inspector and Author of Report

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2) Facility Information

Eastman Chemical Company
Eastman Road
Kingsport, Tennessee 37662
EPA ID No: TND 003 376 928
Sullivan County

3) Responsible Officials

Mr. Richard Bonner, Director
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4) Inspection Participants

Marsha Edwards	Eastman Chemical	John Webb	TDEC
Keith Harris	Eastman Chemical	Robert Nakamoto	TDEC
Kaiser Rich	Eastman Chemical	Beth Glynn	TDEC
Neal Whitten	Eastman Chemical	Alan Newman	EPA Region 4

5) Date of Inspection

Opening conference April 26, 2021 via phone. Onsite inspection conducted May 4-6, 2021, 7:30 am – 4:30 PM

Record Review May 4, 2021 through June 18, 2021.

6) Applicable Regulations

RCRA Sections 3005 and 3007; 40 Code of Federal Regulations (C.F.R.) Parts 260, 266, 268, 270, 273, and 279; Tennessee Hazardous Waste Management Act, Tennessee Code Annotated

(T.C.A.) 68-212 part 1 & 3 and the Used Oil Collection Act of 1993, T.C.A. 68-211, Part 10; and the Tennessee Hazardous Waste Management Regulations, Tennessee Rule Chapter 0400-12-01, in addition to the conditions of permits TNHW-155 (hazardous waste landfill/surface impoundments), TNHW-131 (combustion units) and TNHW-137 (storage units).

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(4)(e)2. [40 C.F.R. § 262.34(a)], a generator of 1,000 kilograms or greater of hazardous waste in a calendar month is a Large Quantity Generator (LQG) and may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status, as required by Section 68-212-108 of the THWMA, Tenn. Code Ann. § 68-212-108 [Section 3005 of RCRA, 42 U.S.C. § 6925], provided that the generator complies with the conditions listed in Tenn. Comp. R. & Regs. 0400-12-01-.03(4)(e)2.(i)-(v) [40 C.F.R. § 262.34(a)(1)-(4)] (hereinafter referred to as the “LQG Permit Exemption”).

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.12(1)(b) [40 C.F.R. § 273.9], a Large Quantity Handler of Universal Waste (LQHUW) is a universal waste handler who accumulates 5,000 kilograms or more total of universal waste (batteries, pesticides, mercury-containing equipment, or lamps, calculated collectively) at any time.

7) **Purpose of Inspection**

The purpose of this inspection was to conduct an unannounced compliance evaluation inspection to determine Eastman Chemical’s compliance with the applicable requirements of RCRA and the corresponding Tennessee regulations. This was an EPA lead inspection.

8) **Previous Inspection History**

The most recent inspection was conducted by TDEC on August 19, 2020. There were no violations noted during this inspection.

9) **Facility Description**

Eastman Chemical Company is incorporated under the laws of the State of Delaware. Eastman Chemical Company’s Tennessee Operations facility manufactures and sells its products worldwide. It is in Kingsport, TN and manufactures chemicals, plastics, and fibers utilizing more than 290 buildings on a site of approximately 800 acres. Eastman Chemical Company is divided into Divisions and Departments as described in the report. Eastman Chemical employs approximately 7,000 workers and access to the site is controlled through locked gates staffed by security.

The facility is a permitted TSDF facility, hazardous waste large quantity generator, used oil generator, and universal waste large quantity handling facility. The facility reported on over three hundred hazardous waste streams in the 2020 annual report. The NAICS number for the facility is 325199.

10) Opening Conference

On April 26, 2021, EPA and TDEC inspectors called Eastman Chemical's Marsha Edwards to announce a CEI on May 4-6, 2021. During the opening conference the inspection team described a list of requested records and explained the purpose of the visit. The inspection participants discussed health and safety protocols, required personal protective equipment, and access to the site. The inspectors described the anticipated use of equipment (digital camera) during the inspection. Eastman expressed their desire to take photos with an intrinsically safe camera provided by Eastman. The EPA and TDEC inspectors agreed to this arrangement. On May 4-6, 2021, EPA inspector Alan Newman, accompanied by TDEC inspectors Bethanie Glynn, Robert Nakamoto, and John Webb, arrived at Eastman Chemical Company (Eastman) at approximately 7:45 a.m. Marsha Edwards, Keith Harris, Kaiser Rich, and Neil Whitman, of Environmental Affairs, immediately received the inspectors. An in-person opening conference was held in the parking lot. The inspectors introduced themselves and showed their credentials to Marsh Edwards, Keith Harris, Kaiser Rich, and Neil Whitman. The inspectors discussed the company's ability, pursuant to 40 C.F.R. §2.203, to assert a business confidentiality claim for information submitted to the EPA. The company said they may assert a business confidentiality claim as needed.

Eastman representatives provided an overview of the facility's history and current operations during the opening conference. The company does not appear to meet the Small Business Regulatory Enforcement Fairness Act's classification of a "small business," which is generally set by the Small Business Administration using the business' SIC/NAICS code and annual receipts or number of employees. Therefore, the EPA inspector did not provide a copy of the agency's information sheet for small businesses, which can be found at <https://www.epa.gov/sites/production/files/2017-06/documents/smallbusinessinfo.pdf>.

11) Findings

- Chemicals Manufacturing Division (CMD)

Inspection Participants:

Kaiser Rich, Eastman
Marsha Edwards, Eastman

Alan Newman, EPA
Beth Glynn, DSWM

Division Description and Observations:

Chemicals Manufacturing Division (CMD), Tennessee Operations, includes five departments:

1. Acetyl & Oxo Derivatives
2. Specialty Organic Chemicals,
3. Manufacturing Services,
4. Gasification, and

5. Acetic Anhydride

Various alcohols and aldehydes, produced at Eastman's Texas Operations, are used to manufacture plasticizers, esters, acids, aldehydes, and ketones both for sale and internal use. Wastes generated include residues from processing, distillation heels and spent materials. Chemical raw materials from internal and external sources are used to manufacture photographic chemicals, hydroquinone, industrial chemicals, dyes, and antioxidants. Wastes generated include mixed process solvents, lab wastes, samples, and filter waste.

Many of CMD's manufacturing processes are subject to Maximum Achievable Control Technology (MACT) standards for hazardous air pollutants (HAPs) under the Clean Air Act, 40 CFR Part 63 standards Subpart FFFF – Miscellaneous Organic NESHAP (MON) and Hazardous Organic NESHAP (HON) for the Synthetic Organic Chemical Manufacturing Industry, 40 CFR Part 63 Subpart G.

1. Acetyl & Oxo Derivatives Department

The Acetyl & Oxo Derivatives Department consists of three sections: The Acetic Anhydride I Section, the Ketones Section, and the Acetic & Butyric Acid Section.

A. Acetic Anhydride Section - Section Representatives: Rebecca DeMarco Fourspring and Doug Jackson

The Acetic Anhydride I Section produces acetic anhydride via cracking for both internal applications and external sales. Air emission control equipment leak requirements for equipment in hazardous waste service in this Section are covered under the MON regulatory requirements.

Building 218 West Side: 90-day container accumulation area. D007 used filter bags/cloths contaminated with carbon are collected in containers. There was no hazardous waste present in this area on the day of the inspection.

B. Acetic & Butyric Acid Section - Section Representative: Andrew Samstag

The Acetic & Butyric Acid Section includes oxidation and purification facilities for organic acids used internally and sold externally. Aliphatic esters for sales are produced in multiple ester units located within the section, and a precursor for the Eastman TritanTM copolyester is manufactured in the section. Some air emission control equipment leak requirements for equipment in hazardous waste service in this section are covered under MON regulatory requirements.

1. Building 161A Tank 16: 5,872 gallons, 48,960 lb capacity: D001, D002, D007 low boiler esters and acid waste accumulate in this tank. Waste is burned either at B-83 or B-248. Tank 16 and associated valves and pumps are subject to MON LDAR and Rule 0400-12-01-.05(28) air emission standards. The tank was labeled "Hazardous Waste". The most

recent subpart BB air monitoring results for equipment associated with Tank 16 were reviewed. Air emissions monitoring results for tags T16L148BV70 (BB) and TK16L114V13 (MON) associated with tank 16 were reviewed. There were no violations noted with this tank.

2. Building 545 Tank TA-D 50: 8,864 gallons: Waste is fed from the Building 380 methanol process tanks ED57A and ED57B into Tank TA-D 50. Tanks ED57A and ED57B are intermediate flowed through tanks that feed the hazardous waste to tank TA-D 50. A seal-less pump is associated with Tank TA-D 50. The tank was labeled “Hazardous Waste”. The most recent air monitoring results for equipment associated with Building 545 tanks TA-D 50, ED57A and ED57B were reviewed.

a. Building 380 Tank ED57A: 846 gallons, 2,398 lb capacity: Designated for waste methanol, waste isobutyl isobutyrate, and waste cyclobutanediol. This tank feeds into Building 545 Tank TA-D 50. Tank ED57A air emission control equipment leak requirements are covered under Miscellaneous Organic Chemicals NESHAP (MON) regulatory requirements. The tank was labeled “Hazardous Waste”.

b. Building 380 Tank ED57B: 846 gallons, 2,398 lb capacity: Designated for waste methanol, waste isobutyl isobutyrate, and waste cyclobutanediol. This tank feeds into Building 545 Tank TA-D 50. Tank ED57B air emission control equipment leak requirements are covered under MON regulatory requirements. The tank was labeled “Hazardous Waste”. Air emissions monitoring records for tag ED1127V15 associated with tanks ED57A & ED57B were reviewed.

3. Building 380: 90-day container accumulation areas subject to MON LDAR:

a. ED70A dumpster (720 gallons): Designated for waste methanol, isobutyl isobutyrate, and cyclobutanediol. This dumpster was out of service on the day of the inspection and had been out of service for three years.

b. ED70B dumpster (720 gallons): Designated for waste methanol, isobutyl isobutyrate, and cyclobutanediol. This dumpster was out of service on the day of the inspection.

4. Building 545: 90-day container accumulation areas subject to 0400-12-01-.05(28) air emission standards.

a. FA85A dumpster (750 gallons): This dumpster was designated to store waste isobutyric anhydride. No pumps are associated with this dumpster. The dumpster was empty at the time of the inspection. The November 2, 2017 subpart CC monitoring result for the dumpster was reviewed. The facility representative stated that this dumpster was a spare and used when needed.

b. FA85B dumpster (750 gallons): This dumpster was designated to store waste

isobutyric anhydride. No pumps are associated with this dumpster. The dumpster was empty at the time of the inspection. The April 19, 2021 subpart CC monitoring result for the dumpster was reviewed.

c. FA85C dumpster (750 gallons): This dumpster was designated to store waste isobutyric anhydride. No pumps are associated with this dumpster. The dumpster was closed, labeled “Hazardous Waste”, and marked with a 5-2-2021 accumulation start date. The April 12, 2021 subpart CC monitoring result for the dumpster was reviewed.

5. Building 646: 90-day container accumulation area designated for isobutyric acid.

a. I-AC-60 dumpster (750 gallons): At the time of the inspection the dumpster was closed and marked with an accumulation start date of 5-4-2021. Building 646 dumpster I-AC-60 was not marked “Hazardous Waste” (Photo 1). April 19, 2021 subpart CC monitoring results for this dumpster were reviewed. Eastman provided a photograph of the corrected labeling for this container on May 19, 2021.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(4)(e)2(iii) [40 C.F.R. § 262.34(a)(3)], which is a condition of the LQG Permit Exemption, a generator is required to label or clearly mark each container and tank accumulating hazardous waste on-site with the words: “Hazardous Waste.”

b. I-AC-61 dumpster (750 gallons): This dumpster was empty at the time of the inspection. April 19, 2021 subpart CC monitoring results for this dumpster were reviewed.

C. Ketones Section - Section Representative: Jeremy Forren

The Ketones Section includes production facilities for various ester and acrylides. The diketene refining operation was discontinued in December 2021 and all equipment decommissioned in April 2021.

Building 244:

1. Tank 15: 1,771-gallon level 1 tank: Tank 15 has been decommissioned. The tank was previously designated for D003 diketene sludge from the reclamation of acetic acid. The sludge was pumped to dumpsters at Building 244 dumpster pads 1, 2, and 3 then managed at Building 248. Equipment associated with tank 15 has been decommissioned. The equipment (one pump and 46 valves) was previously subject to MON LDAR and 0400-12-01-.05(28) air emission standards. The most recent subpart BB air monitoring for equipment associated with Tank 15 was reviewed. The inspection team noted two 1-gallon, unlabeled, containers on the Tank 15 and Tank 14 catwalk. These containers were initially suspected of being used oil. Photos provided by Eastman on May 25, 2021, show that the 1-gallon containers had been removed from the catwalk and the contents were determined to be “New Oil” and not “Used Oil” (Photos 2-3).

2. Dumpster Pads 1, 2, and 3, 90-day container accumulation areas are closed. Dumpsters 154-160 and 162, 166, 167, and 168 that previously managed diketene sludge have been decommissioned.

3. Dumpster Pads 6-8: Dumpsters 163, 164, and 165 are used on dumpster pads 6-8 for accumulation of ester low boilers from the reclamation of acetic acid. At the time of the inspection, dumpster 165 was closed and marked with an accumulation start date of 4-14-2021. Dumpsters 163 and 164 were empty. The most recent subpart CC monitoring results for dumpsters 163/164/165 were reviewed. The most recent subpart BB air monitoring for equipment associated with the dumpsters was reviewed. The RCRA contingency/emergency plan posted at the Ketone accumulation area was not legible. Eastman should ensure that all contingency plan documents are legible.

4. Courtyard: 90-day container accumulation area: Containers awaiting transportation to Building 248 are stored in the courtyard on the north side of Building 244. At the time of the inspection, four (4) 55-gallon metal containers of triethylamine stored in the courtyard were closed and marked with an accumulation start date of 5-3-2021. None of these four containers were labeled with the words, "Hazardous Waste" (Photos 4-5). The waste ticket attached to the tie around the drums was marked as "Hazardous Waste".

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(4)(e)2(iii) [40 C.F.R. § 262.34(a)(3)], which is a condition of the LQG Permit Exemption, a generator is required to label or clearly mark each container and tank accumulating hazardous waste on-site with the words: "Hazardous Waste."

5. B-244 Trailer Station Pad used to store diketene derivatives. At the time of the inspection this pad was storing 11 empty dumpsters including 154, 155, 156, 157, 158, 159, 160, 162, 166, 167, and 168.

2. Specialty Organic Chemicals (SOC) Department

The Specialty Organic Chemicals Department consists of three sections: Hydroquinone/Antioxidants (Bldg. 369, 90, 57), Intermediates, (Bldg. 267, B195), and Plasticizers (manufacturing facilities in Bldg. 10, 12, 5R, 64).

A. Hydroquinone Section - Section Representative: Fred Adkins

The Hydroquinone/Antioxidants (HQ/AOX) Section produces Hydroquinone and derivatives, TBHQ and BHA. End users include cosmetics, food, and a variety of other industries.

Building 57B

1. Tank U52-32: 13,536-gallon capacity tank: D001/D002 hazardous waste is received from Building 90B Specialty Organic Chemicals TBHQ process. Eastman claims that tank is in hazardous waste service for less than 300 hours a year. Tank U52-32 was

labeled “Hazardous Waste”. Air emissions monitoring records for tag EESCS013T500 associated with tank U52-32 were reviewed.

2. Tank U52-34: D001/D002 hazardous waste is received from Building 90B Specialty Organic Chemicals TBHQ process. Eastman claims that tank is in hazardous waste service for less than 300 hours a year. Tank U52-34 was labeled “Hazardous Waste”.
3. South Loading Dock 90-day container accumulation area: Resin bed waste from Building 3 is accumulated in 55-gallon drums and 5-gallon containers. Hazardous waste was not present at the time of the inspection.
4. Building 57: 90-day container accumulation areas:
 - a. Trailer Pad 57-90 1A: Wastes from hydroquinone process tanks U5233, U5234, and AT 51 are pumped to a tank trailer for disposal at Building 83 or Building 248. Hazardous waste was not present at the time of the inspection. The most recent subpart BB air monitoring results for equipment associated with trailer pad 57-90 were reviewed.
 - b. Trailer Pad 57-90 1B: No hazardous wastes are routinely managed through this pad. This pad is used as a backup 90-day hazardous waste accumulation area. Hazardous waste was not present at the time of the inspection.

B. Intermediates Operations Section - Section Representative: Kenrick Venett

The Intermediates Section consists of general-purpose batch manufacturing equipment. Operations involve complex, multi-step organic syntheses to produce custom products. Production of a product typically runs in campaigns as short as a few days a year, or for several months, depending on the specific orders. All air emission control equipment leak requirements for equipment in hazardous waste service in this section are covered under the MON regulatory requirements. Wastes generated from the neutsches and centrifuges are incinerated at B-248 or manifested off-site for disposal.

1. Building 267
 - a. Warehouse: 90-day container accumulation area: Surplus, off quality and process wastes from the Specialty Organic Chemicals Section are collected in fiber and plastic drums. This area was not observed during the inspection.
 - b. Dumpster Pads 1A, 1B, & 1C 90-day accumulation areas: Designated for distillation bottoms. Hazardous waste was not present at the time of the inspection.
 - c. Tank 1829: 4,500-gallon tank designated for storage of mixed solvent hazardous waste. Waste is incinerated at B-248. The tank was labeled “Hazardous Waste”.

Vegetation was observed growing in the tank insulation on the top of Building 267 tank 1829 (Photos 6-7). Eastman should continue to monitor this tank to ensure the integrity is not compromised.

d. Waste Trailer Pad 5: 90-day container accumulation area: Located at Tank 1829: F003, F005, D001, and D002 hazardous wastes can be loaded at this pad. Hazardous waste is transported by trailer to Building 248 for incineration. Hazardous waste was not present at the time of the inspection. The most recent subpart BB air monitoring results for equipment associated with dumpster pads 1A, 1B, 1C, tank 1829, and waste trailer pad 5 were reviewed.

2. Building 195Y Trailer Pad: 90-day container accumulation area: Trailers containing hazardous waste from waste tank 1829 are parked on this trailer pad prior to incineration at Building 248. There were three tanker trucks located in this area on the day of the inspection. Only one was storing hazardous waste; this trailer was closed, in good condition, labeled with the words “Hazardous Waste”, and marked with a 4-28-21 accumulation start date.

C. Plasticizer Section - Section Representative: Matt Fourspring and Wade Larkin

The Plasticizer section employs both continuous and batch processes to produce approximately 15 different products that fall into the general categories of plasticizers, ester solvents, and glycol ether esters. Several of these products are sold externally for use in applications involving food, medical devices, and pharmaceuticals.

1. Building 5R: All tanks listed below use a common transfer pump – pump 23. There are 45 valves associated with Building 5R tanks. The pump and valves associated with the Building 5R tanks are subject to 0400-12-01-.05(28) air emission standards. The most recent Subpart BB air monitoring results for equipment associated with Tanks 23, 53, 54, 55, and 60 were reviewed.

a. Tank 23: 900-gallon tank designated for D001, D002, D003, and D007 mixed solvent heels. The tank was labeled “Hazardous Waste”.

b. Tank 53: 650-gallon tank designated for D001, D002, D003, and D007 mixed solvent heels. The tank was labeled “Hazardous Waste”.

c. Tank 54: 650-gallon tank designated for D001, D002, D003, and D007 mixed solvent heels. The tank was labeled “Hazardous Waste”.

d. Tank 55: 650-gallon tank designated for D001, D002, D003 and D007 mixed solvent heels. The tank was labeled “Hazardous Waste”.

e. Tank 60: 1,267-gallon tank designated for D001, D002, D003 and D007 mixed solvent heels. The tank was labeled “Hazardous Waste”.

2. Building 10

Tanks 33 and 530 are subject to MACT standards for HAPs under the CAA, and the MON. The most recent subpart BB air monitoring results for tanks 33 and 530 were reviewed.

- a. Tank 33: 5,725-gallon tank designated for D001, D002, D003 low boiler waste. The tank was labeled “Hazardous Waste”.
- b. Tank 530: 3,818-gallon tank used for storage of D001, D002, D003 low boiler waste. This tank is periodically used for product storage. One pump and 28 valves service this tank. The tank was labeled “Hazardous Waste”.

3. Building 12A Courtyard: 90-day container accumulation area: Scrubber phthalic anhydride waste is collected in a blue 55-gallon container. One 55-gallon container was present at the time of the inspection. The container was closed, labeled “Hazardous Waste”, and marked with a 4-16-2021 accumulation start date.

3. Acetic Anhydride Department - Department Representative: Larry Kendrick

The Acetic Anhydride Department consists of two sections. This department produces methanol, methyl acetate, acetic acid, and acetic anhydride with gases produced from coal. Equipment in the Acetic Anhydride Department that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight are subject to Rule 0400-12-01-.05(28) Air Emission Standards for Equipment Leaks regulations.

A. Methanol Section:

The Methanol Section uses the gasification syngas to produce methanol (internal use and external sales). The section also produces methyl acetate (sales/internal use) and operates facilities to produce a polymer modifier and 26 purification facilities to support acetic anhydride operations in the Anhydride Section.

1. Building 336 Tank 21D-20: 5,900-gallon tank designated for D001 hazardous waste methyl propionate. Waste from the tank is loaded at the Building 337 trailer station for incineration at Building 248. One pump and 27 valves service this tank. The pump is subject to Rule 0400-12- 01-.05(28) air emission standards. The tank was labeled “Hazardous Waste”. The most recent subpart BB air monitoring results for equipment associated with Building 336 Tank 21D-20 were reviewed.
2. Building 486 Drum Accumulation: 90-day container accumulation area: Spent catalyst from Plant 19 methanol production is accumulated in 55-gallon drums. Hazardous waste was not present at the time of the inspection.

B. Acetic Anhydride Section:

The Anhydride Section uses CO from gasification to produce acetic anhydride and acetic acid via carbonylation. These products are sold externally and used internally by other Eastman processes.

1. Building 337 Tank 22D-100: 4,800-gallon tank designated for D007 hazardous waste EDA. The VOC in ppmw of the hazardous waste in the tank exceeds 500 ppmw. Waste is loaded on a trailer at pad 337 then transported to Building 248 for incineration. Three valves are associated with this tank. Equipment associated with this tank is in heavy liquid service. The tank was labeled "Hazardous Waste". The most recent subpart BB air monitoring results for equipment associated with Building 337 Tank 22D-100 were reviewed.
2. B-352 Tank 32D-100: 6,000-gallon, 49,800 lb tank designated for D007 hazardous waste EDA. The VOC in ppmw of the hazardous waste in the tank exceeds 500 ppmw. Waste is loaded on a trailer at pad 337 then transported to Building 248 for incineration. Three valves are associated with this tank. Equipment associated with this tank is in heavy liquid service. The tank was labeled "Hazardous Waste".
3. Building 335 Used Oil collection area: Used oil and used oil filters are collected in an area located adjacent to Building 335. Filters are transported to Building 248 and the used oil is burned at B-83 and B- 325 for energy recovery. Seven containers of used oil were present at the time of the inspection. One container of used oil was not labeled "Used Oil". Facility personnel labeled the container during the inspection (Photos 8-9).

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.11(3)(c)3(i) [40 C.F.R. § 279.22(c)(1)], containers and aboveground tanks used to store used oil at generator facilities must be labeled or marked clearly with the words "Used Oil."

4. Gasification Department - Department Representative: Gerhard Marburger

Gasification Department includes operations from coal transfer/feed and slurry preparation through gasification, gas cleanup and purification, sulfur recovery, to the final product gases, CO and syngas. The product gases are sent as raw materials to downstream processes in the Acetic Anhydride Department. Using coal as a source material, carbon monoxide and hydrogen are generated and used as building blocks for other organic compounds. Coal-water slurry is combined with oxygen. The mixture under high pressure and temperature produces carbon monoxide, carbon dioxide, hydrogen sulfide and hydrogen. The hot gases pass through a water bath to a scrubber. The molten slag is quenched in the water bath, drops to the bottom of the gasifier, and is then removed through a solids removal system. Coal slag is disposed of as a non-hazardous waste at Eastman's Pactolus Landfill. Ash particles collected in the scrubber are filtered out and disposed of with the slag. The gas then enters a shift reactor where CO is combined with water to form hydrogen. Arsenic waste is periodically generated when the shift reactor is cleaned. The hydrogen-enriched gases are sent to acid gas removal where carbon

dioxide and hydrogen sulfide are removed. CO and H₂ are either sent through a cryogenic process (for separation) or reacted to form methyl alcohol. Methyl alcohol is reacted with acetic acid to form methyl acetate for acetic anhydride production. Cooler arsenic from the heat exchanger, mercury contaminated guard beds, shift reactor catalyst, and arsenic contaminated personal protection equipment (PPE) wastes generated in the Gasification Department are transported to the B-259 permitted storage area (HWSU 32) for storage before being manifested off-site. Some of the catalyst wastes are manifested off-site to BASF or Johnson Matthey for precious metals reclamation.

A. Building 332

1. South Wall: 90-day container accumulation area: D004 Arsenic and catalyst wastes from Building 332 satellite accumulation areas (SAAs) are accumulated in 55-gallon drums. Thirty-five (35) 55-gallon drums of contaminated items and cooler arsenic were present at the time of the inspection. All the containers were closed and labeled “Hazardous Waste”. Thirty-two (32) of the containers were marked with an accumulation start date. The oldest accumulation start date was 3-17- 21. Three (3) of the 55-gallon containers of hazardous waste cooler arsenic were not marked with accumulation start dates (Photo 10). When the inspection team pointed this out, Eastman marked each container with the accumulation start date. The inspection team noted one 55-gallon drum of outdated and unused Criterion 534 Co-Moly Catalyst product in the non-hazardous waste accumulation area located next to the Building 332 South Wall hazardous waste 90-day central accumulation area. The container had a hazardous waste label and was marked with two different dates in two different locations on the container. The year on the hazardous waste label was illegible. The other date noted on the container was 3-17-1983 (Photos 11-13). The product label indicated the catalyst was composed of 31 non-RCRA metals. The MSDS, provided after the inspection of the area, documented that the outdated catalyst was non-hazardous.

Pursuant to [Tenn. Comp. R. & Regs. 0400-12-01-.03(4)(e)2(ii) [40 C.F.R. § 262.34(a)(2)], which is a condition of the LQG Permit Exemption, a generator must mark or label its containers with the date upon which each period of accumulation begins clearly visible for inspection on each container.

Pursuant to [Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(b) [40 C.F.R. § 262.11], a person who generates a solid waste, as defined in Rule 0400-12-01-.02(1)(b), must determine if that waste is a hazardous waste.

2. Satellite accumulation areas: SAAs are located on floors 1-5 of Building 332 for the collection of spent catalyst, spent aerosol cans, and spent arsenic contaminated clothing. The SAAs were not observed during this inspection.

5. Manufacturing Services Department

Manufacturing Services Department includes CMD Materials Handling. Materials Handling operations include the loading and unloading of products and raw materials, as well as intra-plant transfers. These material transfers include pumping between tanks, to trailers and railcars, as well as, drumming operations; the latter of which is largely subcontracted. Materials Handling operations support all the CMD manufacturing processes, and in some cases, the unloading and transfer of raw materials to manufacturing processes in other Eastman TNO manufacturing divisions. Additionally, Materials Handling personnel load waste from CMD manufacturing processes to trailers in coordination with the manufacturing area.

The Bulk Materials Handling Section of Manufacturing Services is divided into two groups. The Railcar/Transfer group is responsible for loading and shipping bulk liquid chemicals to internal and external customers by railcar, unloading purchased bulk liquid chemicals from railcars for raw material use, handling bulk waste generated by manufacturing operations in trailers, and transfer and inventory of bulk liquid chemicals from tank to tank. The Trailer/Drum group is responsible for loading and shipping packaged products and bulk liquid chemicals in trailers to internal and external customers and storing drums and other containers of raw materials and products in warehouse areas.

A. Bulk Materials Handling Section - Section Representatives: Wendy Hall and Vicki Martin

1. Building 118: 90-day container accumulation areas:

- a. Tank Trailer Loading Station 1: This loading station is primarily used for product storage. Waste from the Acetic Butyric Department Tank 16 is pumped to a tank trailer at this location. Hazardous waste was not present at the time of the inspection.
- b. Trailer Station 2: Waste methyl acetate is received from Tank 720-09 if the material is to be disposed of instead of being sold as product. One trailer of hazardous waste N-butyl acetate was present at the time of the inspection. The container was closed, labeled as "Hazardous Waste", and marked with an accumulation start date of 5-4-21.

2. Building 18 Tank Truck Loading Station: 90-day container accumulation area: Waste from tanks 33 and 530 are pumped to a tank 35 trailer for disposal at Building 248 or Building 83. One trailer of hazardous waste hexanoic acid from tank 530 was present at the time of the inspection. The container was closed, labeled "Hazardous Waste", and marked with an accumulation start date of 5-3-21.

3. Building 337 East Side Trailer Pad: 90-day container accumulation area: Wastes from Tanks 22D-100, 32D-100, and 21D-20 are pumped to a tank trailer. There is one loading station and two parking stations. Equipment subject to 0400-12-01-.05(28) and .05(29) air emission standards and MON LDAR. Hazardous waste was not present at the time of the inspection.

4. Permitted Container Storage (SO1) Area Building 285 HWSU-30 (and 90-day accumulation area) Trailer Pad: HWSU-30 is permitted under Permit TNHW-137. Hazardous waste generated on-site and received from off-site may be managed in this unit. The trailer pad is also used for loading and unloading products and raw materials. Waste is pumped from 55-gallon drums into a tank trailer and transported to B-248 for disposal. Hazardous waste was not present at the time of the inspection. At the time of the inspection, a crack was observed in the wall of the trailer pad (Photo 14). The slab (base) of the unit appeared to be free of cracks. Repairs to the wall of the concrete pad were completed on May 14, 2021 (Photo 15).

Pursuant to Permit Condition III.F.1 of Permit number TNHW-137: The permittee shall ensure that the container storage areas have a containment system that is designed and operated in accordance with 12 Paragraph III.F.2 below and is constructed and maintained as specified in the plans and specification found in Attachment 8.

Pursuant to Attachment 8, Section 10 of Permit number TNHW-137, concerning HWSU-30: Building 285 Trailer Pad, the concrete base and walls are sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed.

B. Packaging and Services Section - Section Representatives: Wendy Hall and Vicki Martin

1. Building 376 Satellite Area: One SAA is located inside Building 376. Xylene samples are collected from rail cars for analysis. Paper towels contaminated with xylene and sample residue are managed at Building 248. This SAA was not observed during this inspection.

2. Building 201

a. Dumpsters DD-2 & DD-3 90-day container accumulation area: These dumpsters contain hazardous and non-hazardous wastes from heels from transport trailers, rail yard storage tanks, line flushing due to repairs, and raw material samples. This U-listed waste is disposed of at Building 83 Boiler. Hazardous waste containers were not present at the time of the inspection. The most recent subpart BB air monitoring results for equipment associated with Building 201 dumpster DD-2 and DD-3 were reviewed. The inspection team noted red liquid in the dumpster area secondary containment (Photo 16). Eastman later identified the red liquid as a non-hazardous KD3 and KD4.

b. Trailer Lot 90-day container accumulation area: Hazardous waste trailers are parked in one of twelve (12) designated parking spaces. Wastes that have been in storage or come from off-site cannot be placed in this unit. Wastes from this unit are transported to Building 248 for disposal. Five trailers containing hazardous waste were observed in the trailer lot. The trailers were closed, labeled "Hazardous Waste", and marked with accumulation start dates. The oldest accumulation start date was 4-4-21.

c. West Door 90-day container accumulation area: Reference samples and filter cobs are collected in fiber drums from various areas and disposed at Building 248. This accumulation area was not observed during this inspection.

d. East Door Drumming Station 90-day accumulation area: 55- gallon containers are used to collect line flushing waste. This waste is transported to the Building 201 dumpster. East Door Drumming Station Satellite accumulation area: Hazardous waste solvent generated from line flushing is collected in a 55-gallon container. This accumulation area and SAA were not observed during this inspection.

3. Building 212 Drumming Station:

a. 90-day container accumulation area: Mixed U-waste generated from line flushing is transferred to Building 201 dumpster. The accumulation area was not observed at the time of the inspection.

b. Satellite accumulation area: One SAA is located inside Building 212 at the drum station. Hazardous waste solvent generated from line flushing is transferred to the SAA adjacent to the drum station. The satellite accumulation area was not observed during this inspection.

4. Building 12A

a. Warehouse: 90-day container accumulation area: 5-gallon containers of U190 phthalic anhydride are accumulated in the warehouse. The accumulation area was not observed at the time of the inspection.

b. Drumming Station: 90-day container accumulation area: U or D listed hazardous wastes generated from line flushing at the drumming station are collected in 55-gallon drums. The accumulation area was not observed at the time of the inspection.

c. Drumming Station: Satellite accumulation area: Solvent line flushing waste is collected in a 55-gallon container at the drum station and transferred to the accumulation area adjacent to the drum station. The satellite accumulation area was not observed at the time of the inspection.

- Acetate Manufacturing Division

Inspection Participants:

Sandy Richardson, Eastman
Brenda Crawford, Eastman
Marsha Edwards, Eastman

Alan Newman, EPA
Beth Glynn, DSWM

Division Description and Observations:

Acetic anhydride, produced by the coal gasification process, acids, and cellulose are used to manufacture cellulose acetate, butyrates, and propanates. Hazardous waste generated includes scrap acid dope, isobutyric anhydride, and waste acetone.

Acetate Manufacturing Division (AMD) includes three departments:

1. Acetate Processing Department (Fiber Esters Area)
2. Acetate Concentration Department, and
3. Acetate Processing (Film Esters Area)
4. Acetate Spinning Department

1. Acetate Processing Department (Fiber Esters Area)

Cellulose flake is produced by activation/reaction of cellulose with acids. The resulting process mixture is precipitated to form a solid material. This solid is washed and dried then sent to silos for introduction to the dissolving process. The solid is dissolved in acetone and mixed with pigments to make a solution which is then filtered to remove large particles. The solution is then pumped to either tow or yarn departments to make filter tow or acetate yarn.

A. Building 136: North Side 90-day container accumulation area. Scrap acid dope, acetone lab waste and lab samples are accumulated in 5, 10, and 20-gallon containers. Sixty (60) 5-gallon and twenty-four (24) 10-gallon containers of hazardous waste were observed during the inspection. The containers were closed, labeled "Hazardous Waste", and marked with an accumulation start date. The oldest date observed was 4-16-21.

B. Building 81D Satellite accumulation area 8th floor: Eastman collects waste generated from hydrolysis from the fiber esters production and scrap acid dope generated from the continuous acetylators. This area was not inspected.

C. Building 71 satellite accumulation areas: Eastman accumulates scrap acid dope near the CA-1 and CA-2 pump rooms areas on second floor of Building 71. These areas were not inspected.

2. Acid Concentration Department (AC)

The AC Department recovers and refines acetic acid and refines butyric acid and propionic acid. AC receives acetic anhydride, produced by the coal gasification process as well as large recycle streams consisting of dilute aqueous acid solutions which were returned from various departments for recovery. AC supplies large volumes of acids back to the same department for their process.

A. Building 137

1. Satellite accumulation area: Laboratory waste is accumulated in 5-gallon SAA containers. Full containers are moved to Building 137 90-day accumulation area. This area was not observed at the time of the inspection.

2. The less-than-90-day hazardous waste container storage area: Full containers of hazardous waste generated in the laboratory SAA are moved to the storage area. Twelve (12) 5-gallon containers of broken glass with acidic liquid were observed at the time of the inspection. The containers were closed, labeled as “Hazardous Waste”, and marked with an accumulation start date of 5-3-21.

3. Tank 401: 10,600-gallon capacity tank: Waste acetone is accumulated in Tank 401. The contents of this tank are pumped every 30 days directly to Powerhouse 83 for treatment. Equipment associated with Tank 401 is subject to 0400-12-01-.05(28) air emission standards. The tank was labeled as “Hazardous Waste”. The most recent subpart BB air monitoring results for the air emissions monitoring point 401PL106V2 and other equipment associated with Building 137 tank 401 were reviewed.

At the time of the inspection the team noted three (3) rusted 1-gallon containers labeled MasticGrip 2500 parts A & B and Reducer #2 on the sidewalk outside of Building 137 (Photo 17). Eastman personnel were not aware of the status or origin of the containers. Eastman later determined that the contents of the containers were unused/obsolete product that met the definition of hazardous waste. Records provided by the facility documented that the containers were immediately moved to the B-371 paint shop, the contents placed into a 5-gallon waste bucket with absorbent, then treated at the incinerator on 5-16-21.

Pursuant to [Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(b) [40 C.F.R. § 262.11], a person who generates a solid waste, as defined in Rule 0400-12-01-.02(1)(b), must determine if that waste is a hazardous waste.

B. Building 55

1. Trailer Pad: 90-day hazardous waste container accumulation area: Waste isobutyric anhydride sludge is received from the distillation operation in B-55 and transported to B-248. Occasionally, this tanker may receive off specification waste from B-120 (Level 2). There was no hazardous waste present at the time of the inspection.

2. Trailer Pad Overflow: This overflow pad is utilized when Pad 1 is full. There was no hazardous waste present at the time of the inspection.

3. Dumpster Pad: 90-day hazardous waste container storage area: Dumpsters C-01 and C-02 are used to collect waste isobutyric anhydride sludge from line purging. These dumpsters are subject to 0400-12-01-.05(28) and .05(29) air emission standards. Hazardous waste was not present at the time of the inspection. The most recent Subpart CC monitoring results for Building 55 dumpster were reviewed.

4. Laboratory Satellite Area: Two SAAs are used to accumulate broken laboratory glass. These SAAs were not inspected on the day of the inspection.

C. Building 82 lab satellite accumulation area: This SAA was not inspected.

D. Building 312A, Tank RA-52: 24,000-gallon less than 90-day hazardous waste storage tank (Level two tank with a closed vent connected to an air pollution control device): Eastman stores partially reclaimed acetone from distillation unit #4 in Tank RA-52. Distillation unit #5 was locked out for decommissioning on 8-26-2018. The tank was placed into hazardous waste service on April 1, 2015. Waste from Tank RA-52 is pumped to a trailer at Building 80 loading station. Tank RA-52 and associated equipment is subject to 0400-12-01-.05(28) air emission standards. The tank was labeled as “Hazardous Waste”. The most recent air emissions monitoring result for monitoring point RA116V48 was reviewed. January 24, 2020 Subpart CC monitoring results for the closed vent system associated with Tank RA-52 were reviewed.

E. Building 80 Unloading Station: Waste from Tank RA-52 is loaded into trailers. No hazardous waste was present at the time of the inspection.

3. Acetate Processing Department (Film Esters Area)

This Department manufactures cellulose acetate, compounds plastics (cellulose acetate, propionate, and butyrate), and compounds, blends, and packages plastics (polyesters). In Film Esters Area, cellulose is reacted with organic acids to form dope. The dope is precipitated, washed, dried, and sent to packaging for external sales.

A. Building 67

1. First floor walkway 90-day hazardous waste storage container storage area: Scrap acid dope waste is accumulated in 5-gallon and 15-gallon containers. There was no hazardous waste present at the time of the inspection.

2. Satellite accumulation areas:

a. S-type waste: SAAs are located in different areas on the second floor for the collection of scrap acid dope generated in the film esters production. This area was not inspected.

b. Pelleter area: Scrap acid dope and samples are collected in this area located on the second floor. This area was not inspected.

4. Acetate Spinning Department (Yarn, Services, and Tow Areas)

Solution from the acetate processing department is extruded into fine filaments then dried. The filaments are gathered to form a band which is then packaged for shipment to customers. The final product is used to make cigarette filters. Solution from the acetate processing department is extruded into fine filaments and the filaments are spun onto a cardboard spool and shipped to customers. The final product is used to make various fabrics. The services group maintains the equipment used in the manufacture of acetate tow and yarn. In building 134, the inspection team noted one 55-gallon container of used oil that was labeled with the words, “Used Oil.”

- Human Resources, Communication, and Public Affairs Division

Division Description and Observations:

This Division consists of five (5) Departments: Personnel, Training, Industrial Engineering Wage and Salary Administration, and Medical. Hazardous waste is only generated in the Medical Department.

Medical: The Eastman Medical Department in Kingsport provides evaluation and treatment of both occupational and non-occupational illnesses and injuries, as well as surveillance exams. The medical department utilizes digital x-ray imaging capabilities and performs diagnostic tests such as influenza and streptococcal screens, pulmonary function testing, breath alcohol and urine drug testing, employee preparation for international travel, and case management of employees returning to work after short term disability.

All waste pharmaceuticals are shipped offsite for disposal as hazardous waste via Ecoflo. Vaccines, allergy medicines, over the counter and other types of prescription medicines are collected separately from P-listed hazardous wastes (waste epinephrine and nitroglycerine). Some medications utilized by the EMS personnel (such as cardiac medications in the ambulance) are exchanged with a local hospital prior to expiration. Medical waste is managed by Stericycle.

A. Building 215:

1. Clinic: One satellite accumulation area is in the clinic. The satellite area was not observed during this inspection.
2. Emergency: One satellite accumulation area is in the emergency area. The satellite area was not observed during this inspection.

- Polymers Division

Inspection Participants:

Bryn Dudley, Eastman

Alan Newman, EPA

Marsha Edwards, Eastman

Beth Glynn, DSWM

Division Description and Observations:

This Division manufactures polyethylene terephthalate (PET) resins in a polymerization process that reacts terephthalic acid (TPA) and dimethyl terephthalate (DMT) with ethylene glycol. Applications include containers for the pharmaceutical, automotive, and food and beverage industries. This Division also manufactures TritanTM copolyester.

This Division is composed of five (5) departments. The process units in this Division are subject to the Hazardous Organic NESHAAP for the Synthetic Organic Chemical Manufacturing Industry, 40 CFR Part 63 Subpart G (HON) air monitoring.

1. DMT/Glycol Department

Department Representative: Rachel McLendon and Gaven Smith

In the DMT/Glycol department, the terephthalic acid is reacted with methanol and then distilled to produce dimethyl terephthalate (DMT). The DMT is either sold to external customers, sent to Polymers Manufacturing Department (PMD) or Polymers Service Department (PSD), or reacted with hydrogen and distilled to produce cyclohexanedimethanol (CHDM). The CHDM is either sold to external customers or sent to PMD or PSD.

A. Building 221

1. TF Satellite accumulation area: Copper chromite contaminated PPE is collected in 15-gallon SAA containers in this area. There was no hazardous waste present at the time of the inspection.

2. North 90-day accumulation area: Spent copper chromite and contaminated PPE generated from reactor cleanout is accumulated in this area. Five (5) 15-gallon containers of hazardous waste were present at the time of the inspection. The containers were closed and labeled. The five (5) 15-gallon containers were not marked with accumulation start dates (Photos 18-20). Facility representatives dated the containers 4/22/2021 from attached paperwork at the time of the inspection.

Pursuant to [Tenn. Comp. R. & Regs. 0400-12-01-.03(4)(e)2(ii) [40 C.F.R. § 262.34(a)(2)], which is a condition of the LQG Permit Exemption, a generator must mark or label its containers with the date upon which each period of accumulation begins clearly visible for inspection on each container.

B. Building 237-238: 90-day container accumulation area: Waste diisopropyl ketone (DIPK) and xylene (D001) removed from the DMT process are accumulated in dumpsters prior to incineration at B-248. Hazardous waste was not present at the time of the inspection. Dumpster 105 was empty.

2. Polymers Manufacturing Department: Department Representative: Sam Wilson

In Polymers Manufacturing and Polymers Services departments, specialty polymers are produced from various combinations of the intermediates produced in the other departments. The Polymers Services department also maintains the storage tanks and packages the specialty polymers and intermediates that are sold to external customers. Buildings 265, 255, and 270: Crude methanol is normally pumped to the DMT Department for recovery. If contamination occurs, methanol is pumped to a trailer as a D001 waste and stored at B-430 holding lot prior to incineration at B-248.

A. Building 255: 4,000-gallon tank BY-D-40: Intermediate boiler and DIPK/methanol waste. The tank is equipped with a conservation vent that connects to a water scrubber. The

scrubber system discharges to the interceptor sewer. The tank was labeled “Hazardous Waste”.

- B. Building 255: Tanker trailer station: Hazardous waste was not present at the time of the inspection.
- C. Building 270 dumpster pads 1 & 2: 90-day container accumulation area: Waste intermediate boiler DIPK/methanol waste (D001) generated from the Tritan™ process is accumulated in Dumpster DM-41, DM-43, or DM-45. Building 270 dumpsters are subject to 0400-12-01-.05(29). Dumpster DM-41 contained hazardous waste at the time of the inspection. The dumpster was closed, labeled “Hazardous Waste”, and marked with a 5-5-21 accumulation start date. Dumpster 43 was marked as empty.

3. Polymers Services Department Representative: Katie Devin and Seth Willis

A. Building 265: Building 265 is a Pilot Plant for specialty production of commercial products and development activities. Waste methanol generated during this process is recycled on site. Waste generated during development activities is collected in dumpsters.

1. S-Line 90-day container accumulation area: A wastewater stream containing 1,4 dioxane (D001) along with a glycol condensate stream containing methanol (D001) are managed in Dumpsters 607 and 609. Building 265 dumpsters are subject to 0400-12-01-.05(29) air emission standards. One dumpster was present at the time of the inspection. The container was closed, labeled “Hazardous Waste”, and marked with a 5-5-21 accumulation start date. The most recent subpart CC air monitoring results for Dumpster 607 (tag # SM-C-73CC1) and the most recent subpart CC air monitoring results for Dumpster 609 (tag # SM-C-73AC1) were reviewed.

B. Building 430 Trailer Lot 90-day central accumulation area: Full and empty tractor trailers containing hazardous waste or product are parked in this area. At the time of the inspection, two (2) tractor trailers contained hazardous waste. The trailers were closed, labeled “Hazardous Waste”, and marked with accumulation start dates of 5-5-21 and 4-21-21. At the time of the inspection, a lined, open topped roll off was next to the Building 430 trailer lot. Empty bags, buckets, and drums were observed in the roll off. A milky liquid was leaking from the bottom of the roll off into a pan, which was overflowing onto the asphalt. After the inspection, Eastman identified the milky liquid as non-hazardous “water dispersible polymer”.

Permitted Container Storage (SO1) Area

C. Building 259 HWSU-32: Waste to be shipped offsite is stored in 55, 25, and 5-gallon containers in this area. Arsenic contaminated catalyst and carbon waste generated from coal gasification are stored here. Hazardous wastes from Polymers and Utilities Divisions are stored here for shipment offsite. At the time of the inspection, 200 containers of hazardous waste were present. The containers were closed, labeled “Hazardous Waste”, and marked with an accumulation start date. The oldest date was 7-21-20.

4. TPA Department:

Terephthalic acid (TPA) and isophthalic acid are produced in this department. Terephthalic acid is produced through oxidation of p-xylene in the presence of acetic acid and catalysts. The terephthalic acid is dried and sent to either the DMT/Glycol Department, the Polymers Manufacturing Department (PMD), or to the Polymers Services Department (PSD). Isophthalic acid is produced through oxidation of m-xylene in the presence of acetic acid and catalysts. The isophthalic acid is purified through crystallization, dried and either sold to external customers or sent to PMD. Building 234 Tank 30: Co-Product methyl acetate is received into Tank 720-09 and primarily sold for re-use. If the co-product is not sold, either because of contamination or lack of a market, the co-product is pumped to a tank trailer at B-118 Trailer Station #2 and stored at B-430 holding lot prior to disposal at B-248. Approximately one or two trailers of hazardous waste are generated yearly. Tank 30 is not a hazardous waste tank.

5. Coatings and Plastic Esters Department (CPE)

The CPE Department manufactures cellulose acetate, cellulose acetate propionate and cellulose acetate butyrate. Cellulose flake is produced by activation/reaction of cellulose with acids. The dope is precipitated to form a solid material. This solid is dried and sent to silos for introduction to the screening process. The product is then transferred to bins for external sales packaging or SPFES for blending, packaging, or compounding.

A. Building 65

1. 90-day container accumulation area: Located on the 1st floor. U-listed P2 waste plasticizer is accumulated in 55-gallon containers. This area was not inspected.
2. Satellite accumulation areas: Scrap acid dope accumulation areas: Two satellite accumulation areas for the collection of scrap acid dope generated in the film esters production. The areas were not inspected.
3. Used oil storage area: Used oil generated from maintenance activities is stored in B-65 on the 6th floor. This area was not inspected.

- Technology Division

Inspection Participants:

Libby Cradic, Eastman

Jeff Hillman, Eastman

Lisa Dillard, Eastman

Alan Newman, EPA

Marsha Edwards, Eastman

Beth Glynn, DSWM

Facility Description and Observations:

The Technology Organization is worldwide and includes Research, Development Groups, (formerly associated with manufacturing units), and the Technical Service Organization. It serves as laboratory and piloting operations for Research & Development, new business as well as improvement of present products and processes. It is not part of any manufacturing facility, but Technology units are mostly located on manufacturing sites and thus participate fully in site Health, Safety, and Environmental (HSE) compliance.

1. Eastman Technology

A. Building 66:

1. 90-day accumulation area: Dumpster pad. There was one dumpster storing hazardous waste at the time of the inspection. The dumpster was closed, labeled “Hazardous Waste”, and marked with an accumulation start date of 3-28-21. The most recent subpart CC monitoring results for the Building 66 dumpster were reviewed.

2. 90-day accumulation area - 1st Floor East Corner: Eastman accumulates hazardous waste in 15-gallon containers and transports them to B-248 for incineration. This area was not inspected.

B. Building 502: 90-day accumulation area: Eastman utilizes this area to accumulate hazardous waste in bottles, 55-gallon metal containers, boxes, and other containers of miscellaneous waste are accumulated. Ninety-five (95) 5-gallon containers of hazardous waste were present at the time of the inspection. The containers were closed, labeled “Hazardous Waste”, and marked with an accumulation start date. The oldest accumulation start date was 4-30-21.

C. Building 124: Satellite accumulation area: Eastman accumulates wastes in bottles or 5-gallon containers from research and development activities and from the Pilot Plant. This area was not inspected.

D. Building 159B - 90-day accumulation area: Waste is repackaged in this area. This area was not inspected.

E. Building 159E: Eastman operates one pump subject to Rule 0400-12-01-.05(28) monthly monitoring and weekly inspections associated with Building 159.

1. 90-day accumulation area: Dumpster pads (Numbers 801 and 802) manage mixed solvent waste. Eighteen (18) valves associated with these dumpsters are subject to Rule 0400-12-01-.05(28) air monitoring requirements. Dumpster 801 was empty. Dumpster 802 contained hazardous waste at the time of the inspection. The dumpster was closed, labeled “Hazardous Waste”, and marked with a 5-2-21 accumulation start date. The most recent Subpart CC monitoring results for Dumpster 802 were reviewed.

2. Satellite accumulation area: Bottles, 55-gallon metal containers and boxes, and other containers of miscellaneous waste are accumulated in this area. This SAA was not inspected during this inspection.

F. Building 159W: 90-day accumulation area: Dumpster pad (Dumpster 803) manages mixed solvent waste. Valves are subject to Rule 0400-12-01-.05(28) air monitoring requirements. Hazardous waste was not present at the time of the inspection. The most recent Subpart CC monitoring results for Dumpster 803 were reviewed.

G. Building 174W: 90-day accumulation area: Dumpster Pad (Dumpsters 805 and 806). Sixteen valves subject to Rule 0400-12-01-.05(28) air emission standards. Hazardous waste was not present at the time of the inspection. The most recent Subpart CC monitoring results for Dumpsters 805 and 806 were reviewed.

H. Building 264:

1. Eastman operates one 90-day accumulation area to accumulate mixed solvent waste (F002/F003/F004) in small bottles which is then consolidated into 5-gallon containers. The accumulated waste is transported to B-248 for incineration. Eleven (11) 5-gallon containers of hazardous waste were present at the time of the inspection. The containers were closed, labeled with the words "Hazardous Waste," and marked with an accumulation start date of 5-5-21.

2. SAAs: SAA containers are located at several stations located in the laboratories. The SAAs were not inspected.

I. Building 359: Eastman operates one 90-day accumulation area to accumulate laboratory sampling waste in small bottles, cardboard cartons, and 40-gallon fiber containers at individual lab stations which are consolidated and accumulated on the loading dock. The waste is removed from this area daily and incinerated. Hazardous waste was not present at the time of the inspection.

J. Building 653 houses the Methanolysis Pilot Plant where Eastman operates one 90-day central accumulation area. Recycled PET containers are reacted with methanol. Ethylene glycol and dimethyl terephthalate (DMT) are recovered from distillation of the feed stream for reuse. Hazardous waste generated from the distillation process is collected in 90-day central accumulation area Dumpster pads 1 & 2. Dumpster 590 was empty. Dumpster 580 contained hazardous waste at the time of the inspection. The container was closed, labeled with the words "Hazardous Waste", and marked with a 4-16-21 accumulation start date.

K. Eastman operates one 90-day hazardous waste container storage area in Building 230 to accumulate laboratory sampling waste. Forty-six (46) 5-gallon containers of hazardous waste were present at the time of the inspection. The containers were closed, labeled with

the words “Hazardous Waste”, and marked with an accumulation start date. The oldest accumulation start date was 3-22-21.

L. Research laboratories in Buildings 150A, 150B, and 150C generate hazardous waste. Laboratory waste is collected temporarily in 750 mL polyethylene bottles under vented individual workstations. When the temporary container is full, employees transport to 5-gallon buckets to a central SAA in each laboratory. Each laboratory operates one SAA. A contractor, Partner Industrial, collects full 5-gallon buckets from laboratories and transports them to a 90-day area in B-502. These SAAs were not inspected.

M. Building 152: Bottle, Box and Fiber Drum SAA. This SAA was not inspected.

N. Building 59 Denier laboratory and Color laboratory SAA. This SAA was not inspected.

- Centralized Maintenance & Services Division

Inspection Participants:

Mike Redd, Eastman

Alan Newman, EPA

Marsha Edwards, Eastman

Beth Glynn, DSWM

Division Description and Observations:

This Division is responsible for plant wide maintenance and shop operations and for maintenance operations for some other Divisions. The plant is divided into seven maintenance zones. During the May 2021 compliance evaluation inspection, Building 371 90-day area and Building 8 universal waste storage area were inspected. All parts washers use non-hazardous cleaner (primarily Zep Dyna 143).

1. Maintenance

A. Eastman operates one 90-day accumulation area at Building 371A. SAAs of hazardous waste generated from the maintenance areas are collected on a concrete pad located outside of Building 371. Two (2) 5-gallon buckets of paint waste, one (1) 15-gallon container of hazardous waste rags, and four (4) 55-gallon containers of grit blast were observed in the central hazardous waste accumulation area at the time of the inspection. The containers were closed, labeled with the words “Hazardous Waste”, and marked with an accumulation start date. The oldest accumulation start date was 4-7-21.

B. Eastman operates a universal waste central storage area in Building 8. Universal waste batteries and lamps generated from all areas of the plant are stored in Building 8. At the time of the inspection, six (6) pallets of boxed universal waste lamps stacked three to four boxes high, twelve (12) fiber containers of universal waste lamps, seven (7) 55-gallon metal containers of universal waste batteries, and one (1) 55-gallon container of mercury containing equipment were observed in Building 8. All the drums of universal waste batteries, bulbs, and equipment, and all of the palletized boxes of lamps were closed and labeled “Universal Waste”. Two boxes of universal waste lamps located on the floor were

open and not labeled (Photos 21-22). May 19, 2021 photographs provided by the facility show the two containers of universal waste bulbs were closed and labeled (Photo 23). The inspection team noted that some of the boxes at the bottom of the palletized container were beginning to collapse causing the stack of boxes to lean (Photo 24). The integrity of the boxes storing universal waste must be maintained in good condition and steps should be taken to improve this area.

Pursuant Tenn. Comp. R. & Regs. 0400-12-01-.12(3)(d)4. [40 C.F.R. § 273.33(d)], a LQHUW must manage universal waste lamps in a way that prevents releases of any universal waste or component of a universal waste to the environment.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.12(3)(e)5. [40 C.F.R. § 273.34(d)], a LQHUW must label or mark each lamp or container of lamps clearly with one of the following phrases: “Universal Waste-Lamp(s),” or “Waste Lamp(s),” or “Used Lamps.”

- Utilities Division

Inspection Participants:

Dwayne Greer, Eastman
Keith Harris, Eastman

John Webb, DSWM
Robert Nakamoto, DSWM

Observations of the inspection of the Utilities Division are documented in the 6/18/2021 TDEC inspection report. There were no violations noted during that portion of the inspection.

- Records Review:

The inspection team reviewed the daily tank inspections and operating records (documenting accumulation time) from August 2020 through March 2021 sitewide. The inspection team reviewed weekly inspection records from August 2020 through March 2021 sitewide. The inspection team reviewed the most recent Subpart BB and Subpart CC air monitoring results for equipment were reviewed sitewide. There were no issues noted with these records.

The inspection team also reviewed the 2020 hazardous waste annual report, hazardous waste manifests from September 2020 through February 2021 and associated land disposal restriction notifications, waste reduction plan updates, select personnel training records, the contingency plans, air monitoring records, records documenting compliance with permits TNHW-131, TNHW-137, and TNHW-155, and the Headworks Exemption documentation.

There were no violations noted while reviewing the records.

12) Closing Conference

The inspectors conducted the exit meeting at 2:00 pm with multiple facility personnel. During this meeting, the inspectors stated their preliminary conclusions of the inspection. Eastman Chemical

Company agreed to provide requested records. Between May 19 and June 14, 2021, Marsha Edwards provided assorted records requested by the inspection team by providing access to a cloud drive.

13) Inspection Findings

Based on the observations made during the inspection, Eastman was apparently deficient with the following RCRA requirements:

- Pursuant to [Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(b) [40 C.F.R. § 262.11], a person who generates a solid waste, as defined in Rule 0400-12-01-.02(1)(b), must determine if that waste is a hazardous waste.
- Pursuant to [Tenn. Comp. R. & Regs. 0400-12-01-.03(4)(e)2(ii) [40 C.F.R. § 262.34(a)(2)], which is a condition of the LQG Permit Exemption, a generator must mark or label its containers with the date upon which each period of accumulation begins clearly visible for inspection on each container.
- Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(4)(e)2(iii) [40 C.F.R. § 262.34(a)(3)], which is a condition of the LQG Permit Exemption, a generator is required to label or clearly mark each container and tank accumulating hazardous waste on-site with the words: “Hazardous Waste.”
- Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.11(3)(c)3(i) [40 C.F.R. § 279.22(c)(1)], containers and aboveground tanks used to store used oil at generator facilities must be labeled or marked clearly with the words “Used Oil.”
- Pursuant to Permit Condition III.F.1 of Permit number TNHW-137: The permittee shall ensure that the container storage areas have a containment system that is designed and operated in accordance with 12 Paragraph III.F.2 below and is constructed and maintained as specified in the plans and specification found in Attachment 8.
- Pursuant to Attachment 8, Section 10 of Permit number TNHW-137, concerning HWSU-30: Building 285 Trailer Pad, the concrete base and walls are sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed.

14) List of Appendices

Appendix 1 – Photo Log:

Photos taken on: May 4-6, 2021

Photos taken by: Eastman Chemical’s Marsha Edwards

Photos taken on May 4-6, 2021

Camera: IS530.1 i.safe Mobile

Model: M53A01

Serial Number: IMEI 358121101647206
IMEI = International Mobility
Equipment Identity

15) **Signed**

Alan Newman
Environmental Engineer

Date

Concurrence

Araceli B. Chavez
Chief
RCRA Enforcement Section

Date

Photographs
Photos taken by
Marsha Edwards, Eastman Chemical
Photos taken on May 4-6, 2021
Camera: IS530.1 i.safe Mobile
Model: M53A01
Serial Number: IMEI 358121101647206
IMEI = International Mobility
Equipment Identity



Photo 1: Building 646 I-AC-60 dumpster – was not labeled with words “Hazardous waste.”



Photo 2: Picture provided May 25, 2021. The two 1-gallon containers observed during the inspection had been removed from the Tank 14/15 catwalk.



Photo 3: Picture provided May 25, 2021. The two 1-gallon containers observed on the Tank 14/15 catwalk during the inspection labeled “New Oil”.



Photo 4: Building 244 Courtyard: Four drums of hazardous waste were not labeled “Hazardous Waste” at the time of the inspection.



Photo 5: Building 244 – four drums of waste triethylamine labeled as “Hazardous Waste”



Photo 6: Building 267 tank 1829.



Photo 7: Bldg. 267 tank 1829: Vegetation observed growing on top of the tank.



Photo 8: Building 335 Used oil storage area. One 55-gallon container of used oil was not labeled "Used Oil".



Photo 9: Building 335 Used oil storage area. Container marked used oil



Photo 10: Building 332 South wall 90-day accumulation area. Three (3) containers of hazardous waste cooler arsenic were not marked with an accumulation start date.

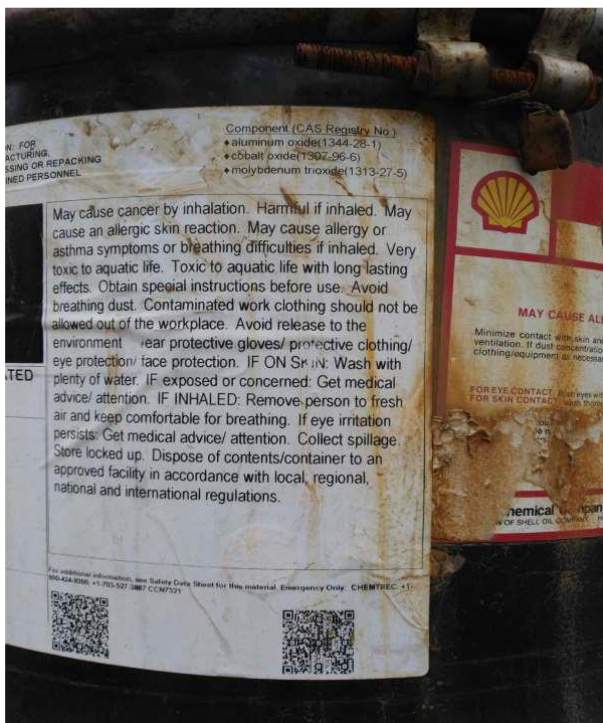


Photo 11: Building 332 South wall, container of Criterion 534 Co-Moly Catalyst.



Photo 12: Building 332 South wall container of Criterion 534 Co-Moly Catalyst dated 3-17-83.



Photo 13: Building 332 South wall, container of Criterion 534 Co-Moly Catalyst.



Photo 14: Building 285 HWDU-30. Crack in the wall of the secondary containment at the time of the inspection.



Photo 15: Bldg. 285 HWDU-30. Photograph provided by the facility on May 20, 2021. Repairs have been completed.



Photo 16: Bldg. 201 dumpster pad. Red tinted water in secondary containment.



Photo 17: Outside of Building 137. Three containers of hazardous waste coating.



Photo 18: Building. 221 North accumulation area: Five (5) containers of hazardous waste



Photo 19: Bldg. 221 North accumulation area: Five (5) containers of hazardous waste were not marked with the accumulation start date at the time of the inspection.



Photo 20: Building 221 North accumulation area: Facility personnel wrote the accumulation start date on the five (5) containers.



Photo 21: Building 8 universal waste accumulation area. One container of spent bulbs was not closed or labeled at the time of the inspection.



Photo 22: Building 8 universal waste accumulation area. A second container of spent bulbs was not closed or labeled at the time of the inspection.



Photo 23: May 19, 2021 photo of Building 8 universal waste bulbs closed and labeled. Violation adequately addressed.



Photo 24: Building 8 universal waste accumulation area. Pallets of boxes of universal waste lamps.