RCRA Inspection Report

1) Inspector and Author of Report

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Enforcement and Compliance Assurance Division
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2) Facility Information

Penn A Kem, LLC
3324 Chelsea Avenue
Memphis, Tennessee 38108

EPA ID#: TND120603170

NAICS #: 325199 – All Other Basic Organic Chemical Manufacturing

3) Responsible Officials

Mikelle Moore
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4) Inspection Participants

Wes Ballard, Penn A Kem, LLC
Barry Roberts, Penn A Kem, LLC
Shondra White, Penn A Kem, LLC

Jason Simpson, Tennessee Department of Environment and Conservation (TDEC)
Cliff Caudle, TDEC
Donya Sharafoddinzadeh, TDEC
Kayla Acosta, USEPA

5) Date of Inspection

April 09, 2024, at 9:45 A.M.

6) Applicable Regulations[1]

Resource Conservation and Recovery Act (RCRA) Sections 3002 (42 U.S. Code – Annotated U.S.C.A. 6925 and 6927), and 40 Code of Federal Regulation (C.F.R.) Parts 260 – 270, 273, 278, & 279; Tennessee Hazardous Waste Management Act of 1977, Tennessee Code Annotated (Tenn. Code Ann.) § 68-212-101 *et seq.*, and Chapter 0400-12-01 of the Rules and Regulations of the State of Tennessee (Tenn. Comp. R. & Regs.).

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.01(2)(a) [40 C.F.R. § 260.10], a large quantity generator of hazardous waste (LQG) is a generator who generates greater than or equal to 1,000 kilograms (2,200 pounds) of non-acute hazardous waste in a calendar month.

1 As the State's authorized hazardous waste program operates in lieu of the federal RCRA program, the citations of those authorized provisions will be to the authorized State program. However, for ease of reference, the federal citations will follow in brackets.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(f)1. [40 C.F.R. § 262.15(a)], a generator may accumulate as much as 55 gallons of non-acute hazardous waste in containers at or near any point of generation where wastes initially accumulate, which is under the control of the operator of the process generating the waste, without a permit or without having interim status, as required by Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(f)1. [Section 3005 of RCRA, 42 U.S.C. § 6925], and without complying with Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(g)2. or 0400-12-01-.03(1)(h)1. [40 C.F.R. § 262.16(b) or § 262.17(a)], except as required in Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(f)1.(vii and viii) [40 C.F.R. § 262.15(a)(7) and (8)], provided that the generator complies with the satellite accumulation area conditions listed in Ten Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(f)1. [40 C.F.R. § 262.15(a)] (hereinafter referred to as the "SAA Permit Exemption").

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(h) [40 C.F.R. § 262.17], an LQG 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(1)(h) [40 C.F.R. § 262.17] (hereinafter referred to as the "LQG Permit Exemption").

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.12(1)(i) [40 C.F.R. § 273.9], a small quantity handler of universal waste (SQHUW) is a universal waste handler who does not accumulate 5,000 kilograms or more of universal waste (batteries, pesticides, mercury-containing equipment, fluorescent lamps, or aerosol cans, calculated collectively) at any time.

7) Purpose of Inspection

The purpose of this inspection was to conduct an unannounced compliance evaluation inspection to determine Penn A Kem, LLC's compliance with the applicable requirements of RCRA and the corresponding Tennessee regulations. This was an EPA lead inspection.

8) Facility Description

Penn A Kem, LLC (known hereinafter as "Penn A Kem" or "Facility") was originally built in 1943 by the U.S. Government and was operated by Quaker Oats. Corn cobs and other biomass materials were collected from the surrounding farms and used as the feedstock to prepare furfural. The Facility later expanded their product line to other furfural-derived products such as furan, furfuryl alcohol, and tetrahydrofurfuryl alcohol. In 1985 the Facility was sold to Great Lakes Chemical. Great Lakes Chemical continued to develop the furfural-based product line and built dedicated facilities to produce Polytetramethylene Glycol, a polymer of tetrahydrofuran. In 1999, Great Lakes sold the facility assets to a private equity group which named the new company Penn Specialty Chemicals, Inc. During this period, the company began to focus on high-value intermediates used in agri, pharma, and other industrial applications. In 2008, the facility assets were sold to its present owner, the Minafin Group.

The Minafin Group, which is a Belgium-based company that established Penn A Kem, LLC in 2008, operates five brands industrially present in North America and Europe. The brands include Minakem (specializing in the pharma market), Minasolve (manufactures cosmetic

ingredients), Minascent (handles highly hazardous chemicals and specialized chemical reactions under a variety of quality assurance programs), Pressure Chemical (high-pressure chemistry, niche polymers and scale-up services), and Penn A Kem.

Penn A Kem operates full-service manufacturing of high-volume solvents and chemical intermediates, renewable chemistry, pilot facilities, R&D, and sales and marketing for green chemistry while developing new products and processes for customers. The Facility is divided into operating sections which consist of the Hydro Complex (solvents section), Aquatic Herbicides and Cosmetic Ingredients Operations, two specialty units for batch processes, a Pilot Plant, and Research and Development (R&D). The Facility operates two hazardous waste tanks (D-50 and D-60) for blow-down from production and specialty polymers campaigns. Penn A Kem operates 24 hours a day, seven days a week, and is on approximately 20 acres of land. Approximately 160 employees work at the facility. The Facility has 24-hour security with a security gate for entry and a perimeter fence.

Penn A Kem is a LQG of hazardous waste and most recently notified of its regulated waste activities on March 15, 2023. The Facility generates the following hazardous wastes with associated EPA waste codes: ignitable waste (D001), corrosive waste (D002), reactive waste (D003), characteristically toxic wastes (D007, D009, D011, D018, D021), spent halogenated solvents (F002), spent non-halogenated solvents (F003), acutely toxic discarded commercial chemical products (P029, P088, P098), and toxic discarded commercial chemical products (U125, U147, U151, U154, U223). The Facility also generates universal waste fluorescent lamps, universal waste batteries, universal waste aerosol cans, and used oil.

9) Previous Inspection History

TDEC has conducted two RCRA CEIs at the subject Facility between 2019 and 2024.

On April 16, 2019, TDEC conducted a RCRA CEI at the subject Facility and found fourteen violations of RCRA. These fourteen violations included: hazardous waste determinations, hazardous waste container management (labeling containers, condition of containers, and open containers), RCRA organic air emissions standards for Subparts BB and CC, hazardous waste tank requirements, preparedness and prevention, elements of the contingency plan, missing weekly inspections of central accumulation areas (CAAs), closing containers of universal waste fluorescent lamps, labeling of containers of used oil and labeling containers of universal waste batteries. As a result, TDEC issued a consent order to Penn A Kem, LLC on February 14, 2020, TND120603170 and verified that the Facility had returned to compliance (during a follow-up focused compliance inspection) on July 12, 2019.

10) Opening Conference

On April 09, 2024, EPA inspector Kayla Acosta, accompanied by TDEC inspectors Jason Simpson, Cliff Caudle, and Donya Sharafoddinzadeh, arrived at Penn A Kem at approximately 9:45 A.M. Barry Roberts, Plant Manager, immediately received the inspectors. Mr. Roberts and the inspectors were joined by Wes Ballard, EHS Specialist, for the opening conference. The inspectors introduced themselves, showed their credentials, and explained the purpose of the visit.

The inspectors described the anticipated use of equipment (digital camera) during the inspection and provided a request for records. Due to the nature of the hazardous materials and hazardous waste onsite, the inspectors' digital cameras were not allowed to be used because they were not intrinsically safe. The Facility representatives were able to take photos during the inspection with an intrinsically safe digital camera and provided those photos to the inspectors via email after the inspection. The EPA inspector explained that the Small Business Regulatory Enforcement Fairness Act's classification of a "small business" is generally set by the Small Business Administration using the business' SIC/NAICS code and annual receipts or number of employees. A copy of the EPA's information sheet for small businesses can be found at https://www.epa.gov/sites/production/files/2017-06/documents/smallbusinessinfo.pdf. The EPA inspector also discussed the company's ability, pursuant to 40 C.F.R. § 2.203, to assert a business confidentiality claim for information submitted to EPA. The company did not assert a business confidentiality claim.

Mr. Roberts and Mr. Ballard provided an overview of the Facility's history and current operations during the opening conference. The inspection participants also discussed health and safety protocols and required personal protective equipment before the Facility representatives led the inspectors on a tour of the Facility operations.

11) <u>Inspection Observations</u>

PILOT PLANT:

The Pilot Plant is mainly used for R&D operations that are scaled up in size. If successful, the operation goes to full production. Usually, the only waste generated in this area is spent aerosol cans. Next to the Pilot Plant is a storage area for bulk products that are transported by railcar. No hazardous waste or universal waste was observed in this area.

R&D LABORATORY CAA:

This CAA is located outside by the entrance of the R&D laboratory and is used for R&D laboratory wastes. Spill control equipment and fire control equipment are located near the CAA. Facility representatives use two-way radios for communication and an alarm system for emergencies. The entire Facility is smoke-free except for two designated smoking areas on the southwest side of the Facility. The inspectors observed four 55-gallon containers of non-hazardous waste and one 55-gallon container of acetone and methanol waste situated on a concrete pad (Photos 1 &2). The container was closed, labeled "Hazardous Waste", marked with an indication of the hazard of the contents (flammable liquid), and dated 03/25/2024.

R&D LABORATORY:

Inside the R&D Laboratory in the Northwest Lab Station the inspectors observed a satellite accumulation area (SAA) for a liquid chromatography mass spectrometry (LCMS) machine which contained an 1800-mL glass container of laboratory waste inside a secondary containment gallon-sized bucket. The 1800-mL container was closed and labeled "Hazardous Waste" but was not marked with an indication of the hazard of the contents (Photo 3).

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(f)1.(v) [40 C.F.R. § 262.15(a)(5)(ii)], A generator must mark or label its container with the following: (ii) An indication of the hazards of the contents (examples include, but are not limited to, the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic); hazard communication consistent with the Department of Transportation requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the National Fire Protection Association code 704).

During the inspection, Facility representatives labeled the SAA container with an indication of the hazard of the contents (flammable).

In the East Lab Station of the R&D Laboratory, the inspectors observed three two-gallon red containers for flammable hazardous waste in SAAs. Each container was closed, labeled "Hazardous Waste," and marked with an indication of the hazard of the contents (flammable). In the South Lab Station, the inspectors observed two 2-gallon red containers for flammable hazardous waste in SAAs. Each container was closed, labeled "Hazardous Waste," and marked with an indication of the hazard of the contents (flammable) (Photos 4-6).

At this point of the inspection the inspectors were joined by Shondra White, Environmental Engineer for Penn A Kem.

QC LABORATORY:

The QC Laboratory is used to take samples of products for quality control. The inspectors observed one 2.5-gallon red container for flammable hazardous waste. The container was closed, labeled "Hazardous Waste," and marked with an indication of the hazard of the contents (flammable). The inspectors also observed one high performance liquid chromatography (HPLC) machine which was connected to a 1000-mL container in a SAA for laboratory waste. The container was closed and marked with an indication of the hazard of the contents, but the container was not labeled with the words "Hazardous Waste" (Photo 7).

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(f)1.(v) [40 C.F.R. § 262.15(a)(5)(i)], a generator must mark or label its container with the following: (i) The words "Hazardous Waste".

During the inspection, Facility representatives labeled the container with the words "Hazardous Waste."

QC LABORATORY CAA:

Outside located several feet away behind the QC Laboratory is a CAA for QC Laboratory waste on a concrete pad. The inspectors did not observe spill control equipment and fire control equipment (such as a fire extinguisher or fire hydrant) near to this CAA.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(h)1.(vi) [**40 C.F.R. § 262.17(a)(6)], which incorporates Tenn. Comp. R. & Regs. 0400-12-01-.03(12)(c)3. [40 C.F.R. § 262.252(c)], and is a condition of the LQG permit exemption, all areas deemed applicable by § 262.250**

must be equipped with the items in paragraphs (a) through (d) of this section (unless none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below or the actual hazardous waste generation or accumulation area does not lend itself for safety reasons to have a particular kind of equipment specified below). A large quantity generator may determine the most appropriate locations within its facility to locate equipment necessary to prepare for and respond to emergencies: (c) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment.

The inspectors observed one 55-gallon hazardous waste container of laboratory waste labeled "Hazardous Waste," in the CAA. The container was closed, dated 02/23/2024, and marked with an indication of the hazard of the contents (Photo 8).

OUTSIDE OF MAINTENANCE BUILDING:

The inspectors observed one 55-gallon container of waste aerosol cans. The container was closed, labeled "Universal Waste—Aerosol Cans", and dated 09/02/2023.

MAINTNENACE BUILDING:

The maintenance building is used conduct maintenance activities at the Facility and is used to store maintenance parts. The inspector observed one 30-gallon container of used batteries. The container was closed, labeled "Universal Waste—Batteries", and dated 01/24/2024. The inspectors also observed two 55-gallon containers of used oil. The containers were closed and labeled "Used Oil".

DIGESTER BUILDING:

This building is used to store universal waste fluorescent lamps. The inspectors observed the following universal wastes:

- One 2-ft cardboard box of universal waste fluorescent lamps. The container was closed, labeled "Universal Waste Lamps", and dated 01/20/2024.
- One 3-ft cardboard box of universal waste fluorescent lamps. The container was closed, labeled "Universal Waste Lamps", and dated 11/20/2023.
- One 4-ft cardboard box of universal waste fluorescent lamps. The container was open, labeled "Universal Waste Lamps", and dated 11/04/2023.
- One 8-ft cardboard box of universal waste fluorescent lamps. The container was open, not labeled with the words "Universal Waste—Lamps" or "Used Lamps" or Waste Lamps", and not dated.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.12(2)(d)4.(i)(I). [40 C.F.R. § 273.13(d)(1)], a small quantity handler of universal waste must contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers and packages must remain closed and must lack evidence of leakage, spillage or damage that could cause leakage under reasonably foreseeable conditions.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.12(2)(e)5. [40 C.F.R. § 273.14(e)], each lamp or a container or package in which such lamps are contained must be labeled or marked clearly with one of the following phrases: "Universal Waste—Lamp(s)," or "Waste Lamp(s)," or "Used Lamp(s)".

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.12(2)(f)3. [40 C.F.R. § 273.15(c)], a small quantity handler of universal waste who accumulates universal waste must be able to demonstrate the length of time that the universal waste has been accumulated from the date it becomes a waste or is received. The handler may make this demonstration by any of options listed in 40 C.F.R. § 273.15(c)(1-6).

During the inspection, Facility representatives closed the two containers of universal waste lamps that were open, labeled the 8-ft container of universal waste lamps, and dated the container (11/04/23).

TANK FARM:

The Facility operates two hazardous waste tanks. Tank D-50 is a 10,000-gallon above ground storage tank and Tank D-60 is a 3,500-gallon above ground storage tank. Both tanks are equipped with a high-level alarm for overfill prevention and are situated inside a concrete secondary containment pad which appeared in good condition and free of cracks. According to the Facility's hazardous waste tank inventory tracking logs, Tank D-50 was last emptied on 03/19/2024 and contained 3,000 gallons of hazardous waste at the time of the inspection. Tank D-60 is currently out of service and was emptied on 03/10/2024. Both tanks were labeled with the words "Hazardous Waste" and marked with an indication of the hazard of the contents (NFPA Placards). Hazardous waste tank ancillary equipment was observed to be tagged with barcodes and serial numbers as a part of leak detection and repair (LDAR) standards for organic air emissions. No issues were noted for tank D-50's pumps, flanges, valves, endcaps, screws, and bolts. Since it was raining during the inspection, the inspectors did not climb up the ladder to inspect the top of the tanks but did review hazardous waste tank inspection records during the records review (Photos 9-11).

FINE CHEMICALS BUILDING:

Outside of the Fine Chemicals Building, the inspectors observed one 55-gallon container of used aerosol cans (Photo 12). The container was closed, labeled "Universal Waste—Spent Aerosol Cans", and dated 01/13/2022 (accumulating over one year).

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.12(2)(f)1. [40 C.F.R. § 273.15(a)], a small quantity handler of universal waste may accumulate universal waste for no longer than one year from the date the universal waste is generated, or received from another handler, unless the requirements of paragraph (b) of this section are met.

CONCRETE PAD NORTH OF BUILDING 85:

Facility representatives stated that this area is used to store products and/or off spec material that the facility is trying to re-work back into production processes. The inspectors observed hundreds of containers varying in size between 55-gallons to 250-gallons. Some 55-gallon

containers were observed stored in groups of four double-stacked on pallets, others were just placed on the concrete pad. 250-gallon totes were also double-stacked on wooden pallets. There did not appear to be adequate aisle space to inspect all of the containers in this area. Photos were limited in this area. Facility personnel stated that digital cameras and cell phones could not be used in this area and around the facility because they are not intrinsically safe, and the area could potentially have combustible gasses present and/or an explosive atmosphere. Photos were taken with an intrinsically safe camera owned by the facility and were limited to designated waste areas or containers that were labeled "Waste". The inspectors expressed concern that many of these containers of material appeared to be in poor condition and appeared to be bulging and showing signs of corrosion (some heavily corroded). Additional information was requested and as of the drafting of this report has not been received.

The inspectors observed one undated 55-gallon container labeled "BIS-Mannich Waste Bags" that was open and appeared to be leaking a black substance onto the concrete floor (Photo 13). The Facility had not made a determination if the material was hazardous waste or not. There was also one 55-gallon closed containers labeled "Waste Clean-Up" that was dated 09/13/2021 (Photo 14). The Facility had not determined if the container was a hazardous waste when asked by the inspectors. The inspectors requested a waste profile for these two containers. As of the drafting of this report, the requested waste profiles had not been received.

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 40 CFR 261.2, must make an accurate determination as to whether that waste is a hazardous waste in order to ensure wastes are properly managed according to applicable RCRA regulations. A hazardous waste determination is made using the steps listed in 40 C.F.R. § 262.11(a-g).

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(h)1.(vi) [40 C.F.R. § 262.17(a)(6)], which incorporates Tenn. Comp. R. & Regs. 0400-12-01-.03(12). [40 C.F.R. § 262.251], and is a condition of the LQG permit exemption, a large quantity generator must maintain and operate its facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

MAIN CAA:

The Facility's main CAA is located Northeast of Building 85 next to the Concrete Pad North of Building 85. The CAA is enclosed with a secured perimeter fence and stores both hazardous and non-hazardous waste. The hazardous waste is seperated from the non-hazardous waste within the CAA in a sloped area. The inspectors observed one 55-gallon container of acetone/ methanol waste (Photo 15 & 16). The container was closed, labeled "Hazardous Waste— Acetone/ Methanol Waste Flammable Liquid," marked with an indication of the hazard of the contents, and dated 02/26/2024. The CAA containment appeared to be filled with rainwater. It was raining during the morning of the inspection. The facility does pump rainwater out from the containment area and analyzes it to determine how to manage the rainwater before disposal.

The inspectors also observed two 55-gallon closed containers labeled “Used Oil” and two 55-gallon closed containers labeled “Used Anti-freeze.” The inspectors requested two waste profiles for two 55-gallon non-hazardous waste containers that were labeled “DFP B#3 Bottoms” (dated 04/20/2020) and “DFP Bottoms from D-50, B’s #7, 8, 9” (dated 05/10/2021). The profiles were later provided to the inspectors via email and demonstrated that the wastes were non-hazardous. It was unclear why these containers had not yet been shipped offsite and appear to be accumulated speculatively.

It was noted that the CAA was equipped with a spill kit but did not have fire control equipment nearby.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(h)1.(vi) [40 C.F.R. § 262.17(a)(6)], which incorporates Tenn. Comp. R. & Regs. 0400-12-01-.03(12)(c)3. [40 C.F.R. § 262.252(c)], and is a condition of the LQG permit exemption, all areas deemed applicable by § 262.250 must be equipped with the items in paragraphs (a) through (d) of this section (unless none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below or the actual hazardous waste generation or accumulation area does not lend itself for safety reasons to have a particular kind of equipment specified below). A large quantity generator may determine the most appropriate locations within its facility to locate equipment necessary to prepare for and respond to emergencies: (c) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment.

RAIL CAR CAA:

Located on the eastside of the Facility is a 20,737-gallon railcar used as a less than 90-day hazardous waste container (Photos 17-20). The railcar is used to store wash water collected from production campaigns. It has been in operation since April 2019. The wash water is transferred to the railcar via hose. The railcar was labeled “Hazardous Waste” and was marked with an indication of the hazard of the contents (flammability). The D.O.T. placards shown in Photos 17-20, which appeared to be heavily faded, were the only indication of hazards on the railcar. It is recommended that the facility place new placards on the railcar. The Facility uses a tracking inventory to track when the railcar is emptied (every 45-days). The railcar was last emptied on 03/23/2024 and was empty at the time of the inspection. The Facility representatives indicated that the railcar will be used for wash water until a new hazardous waste tank (currently being installed) is certified by a P.E. and placed into service.

It was noted by the inspectors that the railcar appears to exhibit signs of corrosion. Since the container was empty at the time of the inspection, it is recommended that the facility either conduct maintenance on the railcar to repair the corrosion issue before storing hazardous waste in the railcar again; or place hazardous waste in a different container that is in good condition pursuant to *Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(h)1.(i)(II) [40 C.F.R. § 262.17(a)(1)(ii)], which states that if a container holding hazardous waste is not in good condition, or if it begins to leak, the large quantity generator must immediately transfer the hazardous waste from this container to a container that is in good condition, or immediately*

manage the waste in some other way that complies with the conditions for exemption of this section.

The facility representatives did state that a new hazardous waste tank was in the process of being installed to store this waste stream. Once complete, the railcar would no longer be used to store hazardous waste.

In addition to the railcar, the inspectors observed one 55-gallon container with no lid that had no label on it and appeared to have black liquid inside (Photo 21 & 22). The Facility representatives did not know the contents of the container when asked by the inspectors. There were also two additional 55-gallon drums next to the Railcar CAA which were closed but did not have any labels on them (Photo 23). These containers did not appear empty when the inspectors tried to tap and move the containers. The Facility representatives did not know if the containers were product or waste.

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 40 CFR 261.2, must make an accurate determination as to whether that waste is a hazardous waste in order to ensure wastes are properly managed according to applicable RCRA regulations. A hazardous waste determination is made using the steps listed in 40 C.F.R. § 262.11(a-g).

12) <u>Records Review</u>

<u>Contingency Plan and Quick Reference Guide (QRG):</u>

The actions that Facility personnel should take in response to an emergency are described in the Facility's contingency plan which was last updated in January 2024. The plan describes actions Facility personnel must take in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the Facility. The plan describes arrangements agreed to with the local police department, fire department, other emergency response teams, emergency response contractors, equipment suppliers, local hospitals or the Local Emergency Planning Committee. The plan lists the names and emergency telephone numbers for persons identified as emergency coordinators. Primary emergency coordinators are the shift supervisors while alternates are listed as area supervisors on duty.

The plan includes a complete list of all required emergency equipment at the Facility such as fire extinguishing systems, spill control equipment, communications and alarm systems, and decontamination equipment. The list does not appear to be up to date with the location of required equipment for the Main CAA and the QC Laboratory CAA which was missing fire control equipment. The plan does not include the location and a physical description of each item on the list, and a brief outline of its capabilities.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(h)1.(vi) [40 C.F.R. § 262.17(a)(6)], which incorporates Tenn. Comp. R. & Regs. 0400-12-01-.03(12)(i)(5) [40 C.F.R. § 262.261(e)], and is a condition of the LQG permit exemption, the plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment,

communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

The plan includes an evacuation plan for personnel. This plan describes signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes. The quick reference guide includes the types/names of hazardous waste in layman's terms and the associated hazard associated with each hazardous waste present at any one time; the estimated maximum amount of each hazardous waste that may be present at any one time; the identification of any hazardous wastes where exposure would require unique or special treatment by medical or hospital staff; a map of the Facility showing where hazardous wastes are generated, accumulated and treated and routes for accessing these wastes; a street map of the Facility in relation to surrounding businesses, schools and residential areas; the locations of water supply; the identification of on-site notification systems; and the name of the emergency coordinator(s) and emergency telephone number(s).

Records indicated that a copy of the contingency plan (and its quick reference guide) was most recently submitted to the Memphis Police Department, Memphis Fire Department, and Shelby County Emergency Management on March 29, 2022. There were no records available for review showing the amended January 2024 contingency plan and QRG were submitted to the local emergency responders.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(h)1.(vi) [40 C.F.R. § 262.17(a)(6)], which incorporates Tenn. Comp. R. & Regs. 0400-12-01-.03(12)(j)1. [40 C.F.R. § 262.262(a)], and is a condition of the LQG permit exemption, a copy of the contingency plan and all revisions to the plan must be maintained at the large quantity generator and (a) the large quantity generator must submit a copy of the contingency plan and all revisions to all local emergency responders (i.e., police departments, fire departments, hospitals and State and local emergency response teams that may be called upon to provide emergency services). This document may also be submitted to the Local Emergency Planning Committee, as appropriate.

On April 26, 2024, Shondra White of Penn A Kem provided an update via email stating that the amended contingency plan would be mailed within a week. No further update or records demonstrating the amended contingency plan was submitted to local emergency responders was provided.

Training Records:

The inspectors reviewed records of employee hazardous waste training completed in 2022-2024 with no issues noted. The Facility did not provide a list of position descriptions with required skill sets associated employees handling hazardous waste.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(h)1.(vii)(IV) [40 C.F.R. § 262.17(a)(7)(iv)], the large quantity generator must maintain the following documents and records at the facility:

(A) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;

(B) A written job description for each position listed under paragraph (a)(7)(iv)(A) of this section. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of facility personnel assigned to each position;

(C) A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under paragraph (a)(7)(iv)(A) of this section; and

(D) Records that document that the training or job experience, required under paragraphs (a)(7)(i), (ii), and (iii) of this section, has been given to, and completed by, facility personnel.

On April 26, 2024, Shondra White of Penn A Kem provided a spreadsheet with required training based on different positions; however, there were no position descriptions provided for employees handling hazardous waste.

Waste Manifest and Land Disposal Restriction (LDR) Records:

The inspectors reviewed available hazardous waste manifest records and land disposal restriction forms for shipments of hazardous waste sent since 2021. Hazardous waste manifest records show that waste flammable liquids Furan and 2-Furaldehyde (D001, D008) are routinely shipped to Lone Star Industries, Inc. (EPA ID MOD981127319) in Cape Girardeau, Missouri while most of the other hazardous waste streams are routinely shipped to Excel TSD of TN, LLC (EPA ID TND980847024). The most recent shipment was made on April 02, 2024.

Weekly Inspection Records:

The inspectors reviewed Penn A Kem's available records of inspections of the hazardous waste central accumulation area (CAA) since the week of April 03, 2021. The inspection log includes a checklist to record observations about leaking containers and for deterioration of containers caused by corrosion or other factors. There were no weekly inspection logs available for review for the Railcar CAA which had been in use collecting wash water since April 2019. Weekly inspection logs were missing the week of May 01, 2021, for both the R&D laboratory CAA and the QC Laboratory CAA. Weekly inspection logs were missing for all CAAs during the weeks of 07/31/2021, 08/07/2021, all of August 2021, the week of 09/04/2021, all weeks in October 2021, all weeks in November 2021, first two weeks of November 2022, and last week of December 2022.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(h)1.(i)(V) [40 C.F.R. § 262.17(a)(1)(v)], at least weekly, the large quantity generator must inspect central accumulation areas. The large quantity generator must look for leaking containers and for deterioration of containers caused by corrosion or other factors. See paragraph (a)(1)(ii) of this section for remedial action required if deterioration or leaks are detected.

Daily Tank Inspections:

Daily visual tank inspections were available for review for tanks D-50 and D-60 since 2021. No issues were noted for the daily tank inspections.

Organic Air Emissions Monitoring (Subparts BB and CC) LDAR Records:

LDAR monitoring records were provided via email. LDAR monitoring is conducted on tank components and ancillary equipment by Brand Safway on a monthly basis. Records were available for review since 2021. The facility uses a TVA2020 toxic vapor analyzer to monitor for leaks and conducts calibrations on a monthly basis. Calibration records were also provided since 2021. No issues were noted.

P.E. Certifications:

P.E. certifications for tanks D-50 and D-60 were provided. Both tanks were certified by an engineer upon installation. Tank D-50 was certified by William P. Paul of Aquaterra Environmental and Geotechnical Consultants (P.E. Reg. No. 25714) on 01/20/1999 while D-60 was certified by the same engineer on 01/13/1990.

Hazardous Waste Reduction Plan:

The facility last updated their hazardous waste reduction plan in 2022 and had not completed an annual progress report for the plan as required by Tenn. Comp. R. & Regs. 0400-12-01-.03(6)(c)1.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(6)(c)1. All generators shall annually review their waste reduction plan and complete a hazardous waste reduction progress report which shall:

- **(i) Analyze and quantify progress made, if any, in hazardous waste reduction, relative to each performance goal established under subparagraph (b) of this paragraph; and**
- **(ii) Set forth amendments, if needed, to the hazardous waste reduction plan and explain the need for the amendments.**

Annual Reports:

TDEC requires the submission of annual reports in lieu of biennial reports. Annual reports were reviewed for the years 2021-2023. Deficiencies were noted on the 2023 report related to the following waste streams (WS): WS#41 (Mercury-EPA Waste Codes D001, D018), WS#70 (Maleic Anhydride-EPA Waste Code U147), and WS#93 (Specialties Metal Catalyst with Ignitable Liquids-EPA Waste Codes D001, D007, and F003). For WS#41 and WS#70, Penn A Kem did not use a state code describing the final disposition of the waste in item 4b of the waste stream report (WSR) form. Only a storage code (S01) was listed, which is not sufficient for the WSR form. For WS#93, the waste codes (D001, D007, and F003) in item 1h of the WSR form do not match the hazard criteria checked in item 1f of the form.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(5)(b)1., a generator who is a large or small quantity generator for at least one month of the calendar year who ships any hazardous

waste off-site to a treatment, storage, or disposal facility within the United States must complete and submit an annual report to the Commissioner by March 1 for the preceding calendar year. Such report must be submitted on forms provided by the Commissioner, and the form must be completed according to the instructions accompanying it. The report must include, but shall not necessarily be limited to, the information listed in Tenn. Comp. R. & Regs. 0400-12-01-.03(5)(b)1.(i-vi).

13) Closing Conference

The inspectors conducted the exit meeting with Facility personnel including Wes Ballard and Shondra White. During this meeting, the inspectors stated their preliminary observations. The Facility representatives agreed to provide the requested records, as soon as possible.

On 04/26/2024, Shondra White provided the following records requested during the closing conference via email: Subparts BB and CC LDAR monitoring records, a waste profile for DFP Bottoms waste managed as non-hazardous waste, the P.E. certification for Tank D-50, calibration logs for LDAR monitoring equipment, and a training matrix for required hazardous waste training based on the type of position at the facility.

At the time of the drafting of this Report, the following records have not been received:

1. Records of hazardous waste determinations have not been provided for the two 55-gallon containers labeled “BIS-Mannich Waste Bags,” “Waste Clean-Up,” one 55-gallon container with no lid that had no label on it and appeared to have black liquid inside the container in the Railcar CAA, or two additional 55-gallon drums next to the Railcar CAA which were closed but did not have any labels on them;

2. The amended contingency plan and QRG with revised emergency equipment list and locations need to be submitted for review along with records of the amended plan and QRG being submitted to the local emergency responders; and

3. An updated hazardous waste reduction plan and revised 2023 annual report must still be submitted to TDEC for review.

14) Summary of Observations

During the inspection, observations were made concerning 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 40 CFR 261.2, must make an accurate determination as to whether that waste is a hazardous waste in order to ensure wastes are properly managed according to applicable RCRA regulations. A hazardous waste determination is made using the steps listed in 40 C.F.R. § 262.11(a-g).

At the time of the CEI, the inspectors observed the following containers that the Facility did not appear to have made a hazardous waste determination on:

1. Two 55-gallon containers labeled “BIS-Mannich Waste Bags” and “Waste Clean-Up” respectively were stored on the Concrete Pad North of Building 85;

2. One open unlabeled 55-gallon container in the Railcar CAA, with black liquid inside the container; and
3. Two additional closed unlabeled 55-gallon containers next to the Railcar CAA.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(f)1.(v) [40 C.F.R. § 262.15(a)(5)(i)], a generator must mark or label its container with the following: (i) The words "Hazardous Waste".

At the time of the CEI, the inspectors observed one 1,000-mL container of laboratory waste from an HPLC machine in the QC Laboratory that was closed, marked with an indication of the hazard of the contents (flammable) but was not labeled "Hazardous Waste."

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(f)1.(v) [40 C.F.R. § 262.15(a)(5)(ii)], A generator must mark or label its container with the following: (ii) An indication of the hazards of the contents (examples include, but are not limited to, the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic); hazard communication consistent with the Department of Transportation requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the National Fire Protection Association code 704).

At the time of the CEI, the inspectors observed a closed 1800-mL container in the R&D Laboratory, labeled "Hazardous Waste" but it was not marked with an indication of the hazard of the contents.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(h)1.(i)(V) [40 C.F.R. § 262.17(a)(1)(v)], at least weekly, the large quantity generator must inspect central accumulation areas. The large quantity generator must look for leaking containers and for deterioration of containers caused by corrosion or other factors. See paragraph (a)(1)(ii) of this section for remedial action required if deterioration or leaks are detected.

At the time of the CEI, the inspectors observed the following apparent concerns related to the Facility's weekly inspections of CAAs:

1. No weekly inspection logs available for review for the Railcar CAA.;
2. Weekly inspection logs were missing the week of May 01, 2021, for both the R&D laboratory CAA and the QC Laboratory CAA; and
3. Weekly inspection logs were missing for all CAAs during the weeks of 07/31/2021, 08/07/2021, all of August 2021, the week of 09/04/2021, all weeks in October 2021, and all weeks in November 2021.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(h)1.(vi) [40 C.F.R. § 262.17(a)(6)], which incorporates Tenn. Comp. R. & Regs. 0400-12-01-.03(12). [40 C.F.R. § 262.251], and is a condition of the LQG permit exemption, a large quantity generator must maintain and operate its facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

At the time of the CEI, the inspectors observed a one undated 55-gallon container labeled "BIS-Mannich Waste Bags" that was open and appeared to be leaking a black substance onto the concrete floor (Photo 13).

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(h)1.(vi) [40 C.F.R. § 262.17(a)(6)], which incorporates Tenn. Comp. R. & Regs. 0400-12-01-.03(12)(c)3. [40 C.F.R. § 262.252(c)], and is a condition of the LQG permit exemption, all areas deemed applicable by § 262.250 must be equipped with the items in paragraphs (a) through (d) of this section (unless none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below or the actual hazardous waste generation or accumulation area does not lend itself for safety reasons to have a particular kind of equipment specified below). A large quantity generator may determine the most appropriate locations within its facility to locate equipment necessary to prepare for and respond to emergencies: (c) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment.

At the time of the CEI, the inspectors did not observe fire control and spill control equipment to be near the QC Laboratory CAA, or the Main CAA.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(h)1.(vi) [40 C.F.R. § 262.17(a)(6)], which incorporates Tenn. Comp. R. & Regs. 0400-12-01-.03(12)(i)(5) [40 C.F.R. § 262.261(e)], and is a condition of the LQG permit exemption, the plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

At the time of the CEI, the inspectors observed that the contingency plan did not include a complete list of all required emergency equipment at the Facility such as fire extinguishing systems, spill control equipment, communications and alarm systems, and decontamination equipment. The list does not appear to be up to date. The plan did not include the location and a physical description of each item on the list, and a brief outline of its capabilities.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(1)(h)1.(vi) [40 C.F.R. § 262.17(a)(6)], which incorporates Tenn. Comp. R. & Regs. 0400-12-01-.03(12)(j)1. [40 C.F.R. § 262.262(a)], and is a condition of the LQG permit exemption, a copy of the contingency plan and all revisions to the plan must be maintained at the large quantity generator and (a) the large quantity generator must submit a copy of the contingency plan and all revisions to all local emergency responders (i.e., police departments, fire departments, hospitals and State and local emergency response teams that may be called upon to provide emergency services). This document may also be submitted to the Local Emergency Planning Committee, as appropriate.

At the time of the CEI, the inspectors observed records that indicated that a copy of the contingency plan (and its quick reference guide) was most recently submitted to the Memphis

Police Department, Memphis Fire Department, and Shelby County Emergency Management on March 29, 2022. There were no records available for review showing the amended January 2024 contingency plan and QRG were submitted to the local emergency responders.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.12(2)(d)4.(i)(I). [40 C.F.R. § 273.13(d)(1)], a small quantity handler of universal waste must contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers and packages must remain closed and must lack evidence of leakage, spillage or damage that could cause leakage under reasonably foreseeable conditions.

At the time of the CEI, the inspectors observed two cardboard boxes (4-ft and 8ft) of universal waste lamps that were not closed in the Digester Building.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.12(2)(e)5. [40 C.F.R. § 273.14(e)], each lamp or a container or package in which such lamps are contained must be labeled or marked clearly with one of the following phrases: "Universal Waste—Lamp(s)," or "Waste Lamp(s)," or "Used Lamp(s)".

At the time of the CEI, the inspectors observed one 8-ft container of universal waste lamps that were not labeled with the words "Universal Waste—Lamps", or "Waste Lamps", or "Used Lamps" in the Digester Building.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.12(2)(f)1. [40 C.F.R. § 273.15(a)], a small quantity handler of universal waste may accumulate universal waste for no longer than one year from the date the universal waste is generated, or received from another handler, unless the requirements of paragraph (b) of this section are met.

At the time of the CEI, the inspectors observed one 55-gallon container of universal waste aerosol cans that had an accumulation start date of 01/13/2022 Outside of the Fine Chemicals Building.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.12(2)(f)3. [40 C.F.R. § 273.15(c)], a small quantity handler of universal waste who accumulates universal waste must be able to demonstrate the length of time that the universal waste has been accumulated from the date it becomes a waste or is received. The handler may make this demonstration by any of options listed in 40 C.F.R. § 273.15(c)(1-6).

At the time of the CEI, the inspectors observed one 8-ft cardboard box of universal waste lamps that did not have an accumulation start date, in the Digester Building.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(5)(b)1., a generator who is a large or small quantity generator for at least one month of the calendar year who ships any hazardous waste off-site to a treatment, storage, or disposal facility within the United States must complete and submit an annual report to the Commissioner by March 1 for the preceding calendar year. Such report must be submitted on forms provided by the Commissioner, and the form must be completed according to the instructions accompanying it. The report must

include, but shall not necessarily be limited to, the information listed in Tenn. Comp. R. & Regs. 0400-12-01-.03(5)(b)1.(i-vi).

At the time of the CEI, the inspectors reviewed annual reports for the years 2021-2023. Deficiencies were noted on the 2023 report related to the following waste streams: WS#41 (Mercury-EPA Waste Codes D001, D018), WS#70 (Maleic Anhydride-EPA Waste Code U147), and WS#93 (Specialties Metal Catalyst with Ignitable Liquids-EPA Waste Codes D001, D007, and F003). For WS#41 and WS#70, Penn A Kem did not use a state code describing the final disposition of the waste in item 4b of the waste stream report (WSR) form. Only a storage code (S01) was listed, which is not sufficient for the WSR form. For WS#93, the waste codes (D001, D007, and F003) in item 1h of the WSR form do not match the hazard criteria checked In item 1f of the form.

Pursuant to Tenn. Comp. R. & Regs. 0400-12-01-.03(6)(c)1. All generators shall annually review their waste reduction plan and complete a hazardous waste reduction progress report which shall:

(i) Analyze and quantify progress made, if any, in hazardous waste reduction, relative to each performance goal established under subparagraph (b) of this paragraph; and

(ii) Set forth amendments, if needed, to the hazardous waste reduction plan and explain the need for the amendments.

At the time of the CEI, the inspectors observed that the facility last updated their hazardous waste reduction plan in 2022 and had not completed an annual progress report for the plan as required by Tenn. Comp. R. & Regs. 0400-12-01-.03(6)(c)1.

15) List of Attachments

Attachment 1 – Photo Log:

16) Signed

KAYLA ACOSTA Digitally signed by KAYLA ACOSTA
Date: 2024.06.25 14:21:24 -04'00'

Kayla Acosta
Physical Scientist

17) Concurrence

BROOKE YORK Digitally signed by BROOKE YORK
Date: 2024.06.25 14:41:34 -04'00'

for Alan R. Newman
RCRA Enforcement Section

Attachment 1 – Photo Log

23 Photos taken on: April 09, 2024
Photos taken by: Penn A Kem Facility Personnel
Photos taken with: Intrinsically Safe Penn A Kem Digital Camera

Photo 1: R&D Laboratory CAA: 55-gallon container of laboratory waste.

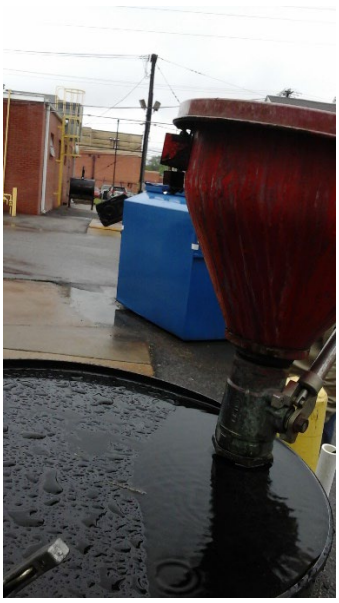

Photo 2: R&D Laboratory CAA: Top of 55-gallon container of laboratory waste.

Photo 3: SAA 1800-mL container in R&D laboratory, missing an indication of the hazard of the contents.

Photo 4: SAA in R&D laboratory for flammable waste.

Photo 5: SAA in R&D laboratory for flammable waste.

Photo 6: SAA in R&D laboratory for flammable waste.

Photo 7: 1000-mL SAA container in QC Laboratory missing a hazardous waste label.

Photo 8: QC Laboratory CAA.

Photo 9: Tank Farm

Photo 10: Tank Farm

Photo 11: Tank Farm

Photo12: Outside of Fine Chemicals Building: 55-gallon universal waste spent aerosol cans container dated 01/13/2022.

Photo 13: Open leaking container labeled “BIS-Mannich Waste Bags” in product storage area on concrete floor North of Building 85.

Photo 14: Container labeled “Waste Clean Up” and dated 09/13/2021 in product storage area on concrete floor North of Building 85.

Photo 15: Main CAA.

Photo 16: Main CAA.

Photo 17: Railcar CAA.

Photo 18: Railcar CAA.

Photo 19: Railcar CAA.

Photo 20: Railcar CAA.

Photo 21: Open 55-gallon container with black liquid in Railcar CAA.

Photo 22: Open 55-gallon container with black liquid in Railcar CAA.

Photo 23: Two 55-gallon unlabeled containers in Railcar CAA.