

RCRA Inspection Report

1) Inspector and Author of Report

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2) Facility Information

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EPA ID# ALD079474037

3) Responsible Officials

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4) Inspection Participants

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Lee Gunter, ADEM
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Cody Lease, ADEM
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5) Date of Inspection

March 29, 2023

6) Applicable Regulations¹

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; the Alabama Hazardous Waste Management and Minimization Act of 1978, Ala. Code § 22-30-1 *et seq.*, and rules 335-14-1 to 335-14-17 (2016 and 2018) of the Alabama Department of Environmental Management (ADEM) Administrative Code (ADEM Admin. Code); and Hazardous Waste Facility Permit ALD079474037.

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 ADEM Admin. Code r. 335-14-1-.02-(1)(a)111. [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.

Pursuant to ADEM Admin. Code r. 335-14-1-.02(1)(a)157. [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 of universal waste (batteries, pesticides, mercury-containing equipment, lamps, or aerosol cans, calculated collectively) at any time.

Pursuant to ADEM Admin. Code r. 335-14-3-.01(5)(a) [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 Section 22-30-12(b) of the Alabama Hazardous Wastes Management and Minimization Act (AHWMMA), Ala. Code § 22-30-12(b) [Section 3005 of RCRA, 42 U.S.C. § 6925], and without complying with ADEM Admin. Code r. 335-14-3-.01(6)(b) or 335-14-3-.01(7)(a) [40 C.F.R. § 262.16(b) or § 262.17(a)], except as required in ADEM Admin. Code r. 335-14-3-.01(5)(a)7. and 8. [40 C.F.R. § 262.15(a)(7) and (8)], provided that the generator complies with the satellite accumulation area conditions listed in ADEM Admin. Code r. 335-14-3-.01(5)(a) [40 C.F.R. § 262.15(a)] (hereinafter referred to as the “SAA Permit Exemption”).

Pursuant to ADEM Admin. Code r. 335-14-3-.01(7) [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 22-30-12(b) of the AHWMMA, Ala. Code § 22-30-12(b) [Section 3005 of RCRA, 42 U.S.C. § 6925], provided that the generator complies with the conditions listed in ADEM Admin. Code r. 335-14-3-.01(7) [40 C.F.R. § 262.17] (hereinafter referred to as the “LQG Permit Exemption”).

7) Purpose of Inspection

The purpose of this inspection was to conduct an unannounced compliance evaluation inspection to determine the University of South Alabama’s compliance with the conditions of its RCRA Hazardous Waste Facility Permit (ALD079474037), the applicable requirements of RCRA and the corresponding Alabama regulations. This was an EPA lead inspection.

8) Facility Description

The University:

The University of South Alabama (USA or University) is a public, doctoral-level university operating under the NAICS Code 611310 for Colleges, Universities, and Professional Schools. The University was founded in 1963, and the main campus covers approximately 1,224 acres in Mobile, Alabama. The USA consists of ten colleges and includes one of Alabama’s two state-supported medical schools. It has an enrollment of about 14,000 students and a workforce of approximately 5,500 members of faculty and staff.

The Alabama Department of Environmental Management (ADEM) issued a hazardous waste operating permit to the USA for hazardous waste container storage and treatment at the University Treatment, Storage, and Disposal Building (TSD Building). The TSD Building consists of a single-story structure on the University campus in which the USA is permitted to store up to 12,000 gallons of liquid and solid wastes. The USA is also permitted to treat up to 300 gallons of waste per day in a neutralization tank at the TSD Building. The current hazardous waste operating permit became effective on January 24, 2020, and shall remain in effect until January 23, 2030, unless it is revoked and reissued, or it is terminated.

In addition to the hazardous waste management activities in the TSD Building, the USA is also a large quantity generator (LQG) and a transporter of hazardous waste. In the 2021 biennial report, dated February 21, 2022, the USA also notified as a large quantity handler of universal waste (LQHUW) (batteries and lamps), as a used oil transporter, and as a recycler of hazardous waste that stores prior to recycling. The biennial report also indicated that the USA is operating under 40 CFR 266 Subpart P for the management of hazardous waste pharmaceuticals.

Hazardous Waste Generation and Transport:

The University's research laboratories, teaching laboratories, healthcare operations, maintenance activities, and facility operations all generate hazardous wastes which may be transported from on-campus and off-campus areas to the University's permitted storage area. The USA operates teaching and research laboratories distributed through approximately 112 buildings and ten colleges, including all areas of engineering, biomedical, genetic, medical, and agricultural and natural science research studies. Each laboratory is a potential point of generation for hazardous waste. In addition, the USA provides all areas of liberal and performing arts studies, and some of those areas may also perform activities that generate hazardous waste. Finally, the USA's support services such as maintenance, grounds, motor pool and athletics also have the potential to house one or more points of generation for hazardous waste.

The types of waste generated onsite include ignitable, corrosive, reactive and/or toxic waste generated in the teaching and research laboratories and waste oils, antifreeze, oil contaminated debris, outdated fertilizer, pesticides, herbicides, etc. from generated during normal maintenance and landscaping activities. Laboratory generated wastes include expired chemicals as well as wastes generated from non-clinical laboratory tests, which are based on the type of individual research or classroom work and vary depending on the classes being offered during a given semester. Waste containers can be as small as a 50 ml glass bottle or as large as a 55-gallon metal drum. Wastes in most teaching and research laboratories are managed using a collection of bottles, with multiple sizes ranging up to a 5-gallon poly carboy.

The USA does not have a centralized campus wide procurement office to coordinate or control chemical purchases ordered by and received at the USA campuses. Instead, each department is responsible for its own ordering process. In the event that an investigator/staff member determines that the use, contamination, or expiration of a given chemical has caused it to no longer be usable in their area, that person is responsible for contacting the Safety and Environmental Compliance (SEC) Department for a waste chemical pick-up. The SEC Department receives information on the type and quantity of waste that is ready to be picked up and three SEC Department employees transport all university generated wastes to the TSD

Building. Hazardous waste is picked up from the USA's hospital once every week, and from all other SAAs upon request.

Based on information provided by the person responsible for generating a container of waste, SEC Department personnel determine and assess the chemical and physical properties of the waste to determine the proper treatment, storage, and disposal methods. The USA's in-house manifest system generates a computerized records for each waste container and this record is used to create an in-house laminated manifest card (with individual tracking number), which is affixed to the container for on-site identification and tracking of the material. Wastes that are generated at non-contiguous USA locations are transported to the TSD Building using a DOT Uniform Hazardous Waste Manifest, and an in-house laminated manifest card from the same USA in-house manifest system is affixed to each container when it arrives at the TSD Building. The computerized log provides information such as the specifically assigned manifest number; the name or general description, volume, EPA number, source location, DOT designation for the waste; the date the waste is picked up; and other information deemed necessary for proper management. The USA also enters a process code to indicate the desired treatment method on these records.

Hazardous Waste Storage:

The TSD Building is the only area on the USA main campus where hazardous wastes are stored outside of an SAA. The building, a single-story structure that was built in 1986, is enclosed within a chain-link fence that is eight-feet tall and topped with barbed wire. Only SEC Department personnel have access into the fenced area and inside the building. The floor of the TSD Building is constructed of poured concrete and it slopes down to several floor drains that connect to an underfloor storage tank through a locked-off piping system. In addition, the concrete flooring system is sealed with a chemical resistant, two-part epoxy paint coating that is applied approximately 18-36 inches up the walls.

Most containers in the TSD Building are stored in one of five individual storage bays: (1) caustic storage; (2) flammable liquid barrel storage; (3) high hazard storage; (4) chlorinated solvent storage; and (5) acid storage, but containers of highly toxic material, oxidizers, and stable organic peroxides are stored on a dedicated wooden shelving unit located next to the bays. The storage bays are separated by concrete walls and each bay is equipped with a shelving system above an obstructed pit used to capture any spilled or leaked material. Spilled or leaked material can either be recovered directly from the pit or it can be drained into the underfloor storage tank.

The TSD Building receives and manages numerous different hazardous waste profiles, and most waste arrives in containers that hold less than or equal to 5-gallons or 25-pounds of material. When vehicles transporting containers of waste arrive at the TSD Building, they are parked in the delivery area in front of the roll-up door. From there, SEC Department personnel off-load the containers directly into the building. Containers greater than 5-gallons are stored in the flammable liquid barrel storage area, and containers less than 5-gallons are staged on a set of wooden shelves according to waste classification. An in-house laminated manifest card is affixed to each container within the TSD Building, and containers less than 5-gallons are then transferred from the wooden shelves to the designated storage bay. Containers greater than 5-gallons are stored in the barrel storage area near the roll-up door.

Wastes that have been accepted at the TSD Building may continue to be stored in their incoming containers, such as the original manufacturer's container (glass, plastic, and metal) or a high-density polyethylene carboy (two-and-a-half or five-gallon capacity), until it is ready for shipment off-site. Other wastes or waste containers may be consolidated into a thirty-gallon high density polyethylene drum (both open and closed head), into a DOT-approved 55-gallon metal drum (both open and closed head), or into a fiberboard, lined drum (various sizes). For example, compatible ignitable solvents are bulked together into 55-gallon drums for off-site vendor fuel blending.

Under standard practices, barrels are stored single file in the designated bulking portion of the barrel storage area with enough aisle space for routine inspection of the containers. Once a barrel is filled, it is moved to the designated holding portion of the barrel storage area until it is shipped offsite for disposal. The bulking portion of the barrel storage area has been specifically designed to capture both spills and fumes that may be generated by the bulking process. Spilled or leaked material is captured in one of two 10-inch deep retaining pits beneath a fiberglass-coated grating used to support the 55-gallon drums. Material that is captured in the pits can either be pumped directly into another drum or it can be released into the underfloor holding tank before it is pumped into another drum. Fumes that may occur during the bulking process are controlled by a single pass exhaust vent, which runs along the entire length of the bulking portion of the barrel storage area.

Hazardous Waste Neutralization and Disposition:

Neutralization of non-hazardous, non-EPA listed materials (salts, sugars, amino acids) and EPA hazardous (D002) listed materials (acids, bases, non-silver-containing photochemical solutions) is performed within the 250-gallon neutralization vessel in the TSD Building. The USA only uses this procedure to neutralize outdated or unwanted laboratory chemicals that do not contain any contaminants. The process may not be used to neutralize any waste that is a combination of corrosive material and other chemicals. Once materials have been neutralized, personnel check the pH before opening the release valve to discharge the effluent to the USA Sanitary Sewer System which then ultimately discharges to the City of Mobile Sanitary Sewer System.

The USA SEC Department also handles the arrangements for ultimate disposal of all other hazardous and nonhazardous chemical waste materials. Disposal methods are selected based on the waste characteristics, and barrel wastes are shipped off-site once every quarter. The USA prepares lab pack shipments twice a year and evaluates the quoted price, available disposal options and company reputation/referrals before selecting the desired vendor for managing the lab pack shipment. Stericycle disposes of all USA pharmaceutical waste.

Hazardous Waste Identification:

According to the 2021 Biennial Report, which was dated February 21, 2022, the USA generated the following hazardous wastes on the Main Campus during 2021:

Waste Description & Number	Volume (pounds)	Waste Description & Number	Volume (pounds)
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Spent non-halogenated solvents from research and teaching laboratories	F003	24,479	Chloroform waste from research and teaching laboratories	D022	13
Ignitable waste from research and teaching laboratories	D001	5,026	Mercury waste from research and teaching laboratories	D009	10
Corrosive waste from research and teaching labs	D002	3,250	Barium waste from research and teaching laboratories	D005	5
Lead-acid batteries from normal university operations	D002 D008	2,210	Formic acid from research and teaching laboratories	U123	1.7
Alkaline batteries from normal university operations	D002	2,040	Resorcinol from research and teaching laboratories	U201	1.4
Spent halogenated solvents from research and teaching laboratories	F002	1,439	Spent non-halogenated solvents from research and teaching laboratories	F005	1.1
Spent halogenated solvents from research and teaching laboratories	F001	942	Potassium cyanide from research and teaching laboratories	P098	1.1
Ignitable waste from normal maintenance activities	D001	750	Sodium cyanide from research and teaching laboratories	P106	1.1
Lithium batteries from normal university operations	D002	434	Reactive waste from research laboratories	D003	0.3
Nickel metal hydride batteries from normal university operations	D002	350	Sodium azide from research and teaching laboratories	P105	0.3
Silver waste from research and teaching laboratories	D011	125	1,2-dichloroethane from research and teaching laboratories	D028	0.2
Arsenic waste from research and teaching laboratories	D004	113	Hydrazine from research and teaching laboratories	U133	0.2
Ni-cad batteries from normal university operations	D002 D006	75	Selenium waste from research and teaching laboratories	D010	0.1
Cadmium waste from research and teaching laboratories	D006	55	Benzene waste from research and teaching laboratories	D018	0.1
Lead waste from research and teaching laboratories	D008	29	Cyanides (soluble cyanide salts) NOS from research and teaching laboratories	P030	0.1

Chromium waste from research and teaching laboratories	D007	21	Ethylene glycol monomethyl ether from research and teaching laboratories	U359	0.1
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According to the 2021 Biennial Report, the following hazardous wastes were accepted at the USA's TSD Building from non-contiguous USA property during 2021:

Waste Description & Number		Volume (pounds)	Waste Description & Number		Volume (pounds)
Waste non-halogenated solvents from USA – University Hospital	F003	21,050	Spent halogenated solvents from USA – Mitchell Cancer Institute	F002	50
Waste spent non-halogenated solvents from USA – Mitchell Cancer Institute	F003	4,484	Ignitable waste from USA – Springhill Annex Campus	D001	41.3
Lead acid batteries from USA – University Hospital	D002 D008	1,820	Lead waste from USA – University Hospital	D008	29
Alkaline batteries from USA – University Hospital	D002	1,513	Corrosive waste from USA – Children & Women Hospital	D002	26
Corrosive waste from USA – University Hospital	D002	1,497	Spent non-halogenated solvents from USA – Children & Women Hospital	F003	10
Ignitable waste from USA – Mitchell Cancer Institute	D001	461	Mercury waste from USA – Children & Women Hospital	D009	4
Lithium batteries from USA – University Hospital	D002	364	Resorcinol waste from USA – University Hospital	U201	1.1
Spent halogenated solvents from USA - Mitchell Cancer Institute	F001	274	Chromium waste from USA – University Hospital	D007	0.9
Alkaline batteries from USA – Springhill Annex Campus	D002	164	Ignitable waste received from USA Children & Women Hospital	D001	0.3
Corrosive waste from USA – Mitchell Cancer Institute	D002	102	Arsenic waste from USA – University Hospital	D004	0.3
Alkaline batteries from USA – Mitchell Cancer Institute	D002	97	Reactive waste from USA – Mitchell Cancer Institute	D003	0.2
Nickel-cadmium batteries from USA – University Hospital	D002 D006	97	Silver waste from USA – University Hospital	D011	0.2
Ignitable waste from USA – University Hospital	D001	97	1,2-dichloroethane from USA – University Hospital	D028	0.2

9) **Previous Inspection History**

ADEM and the EPA typically conduct a RCRA CEI at the subject facility every fiscal year. The most recent ADEM CEI was conducted on August 11, 2022, and the most recent EPA CEI was conducted on June 17, 2021. Violations of universal waste management and hazardous waste container management were noted during the 2021 RCRA CEI and resolved within 90 days.

10) **Opening Conference**

On March 29, 2023, EPA inspector Laurie Benton DiGaetano, accompanied by ADEM inspectors Lee Gunter, Rahne Hicks, and Jazz Greathouse, and by ADEM permit writer Cody Lease, arrived at the USA at approximately 11:25 a.m. Cedric Crawley, Safety and Environmental Compliance Specialist, initially received the inspectors, and they were later joined by William Guess, Director of Safety and Environmental Compliance, and Anne Foster, Assistant Director of Safety and Environmental Compliance. The inspectors introduced themselves and explained the purpose of the visit. The EPA inspector later showed credentials to William Guess and Anne Foster.

The inspectors described the anticipated use of equipment (digital camera) during the inspection and provided a request for records. Note 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 discussed the University's ability, pursuant to 40 C.F.R. §2.203, to assert a business confidentiality claim for information submitted to EPA, but the University did not assert a business confidentiality claim.

The inspection participants discussed health and safety protocols and required personal protective equipment before they began a tour of the University operations.

11) **Inspection Observations**

The TSD Building:

The tour of the University began at the TSD Building, which is permitted to store hazardous waste that is generated on the University's main campus and that is generated by the University on non-contiguous properties and to neutralize corrosive hazardous waste that does not contain any contaminants. The TSD Building is a single-story cinderblock structure inside a chain-linked fence. University personnel stated that the building is equipped with a security system that is monitored by the USA Police Department. The system includes four security cameras outside of the building and an audible security alarm. The building is also equipped with portable fire extinguishers and fire hoses, and warning signs are posted on all four sides of the fence. The inspectors observed "no smoking" and "danger, chemical storage" signs in this area, a safety shower and eyewash station on the outside of the building, and an emergency telephone at the workstation in the building's office.

The USA's semi-annual lab-pack pickup occurred the day before the inspection, so the inspectors observed few waste containers in the TSD Building. The containers observed on the wooden shelves at the incoming waste processing area included three 1-liter glass jars of mixed solvent waste and one box of lead-lined radiological dross. Each container was labeled with waste identification information provided by the person(s) generating the waste, but the box of lead-lined radiological dross was not marked with an indication that its contents are toxic.

Pursuant to RCRA Hazardous Waste Facility Permit ALD079474037, which incorporates ADEM Admin. Code r.335-14-9-.05(1) [40 C.F.R. § 268.50(a)(2)(i)(C)], an owner/operator of a hazardous waste treatment, storage, or disposal facility that stores hazardous waste restricted from land disposal under subpart C of RCRA section 3004 in containers must clearly mark each container to identify its contents with an indication of the hazards of the contents.

The inspectors also observed one 55-gallon drum labeled used oil; one 20-gallon container labeled universal waste NiCad batteries; one 30-gallon container labeled universal waste alkaline batteries; one 30-gallon container labeled universal waste nickel metal batteries; one 30-gallon container labeled universal waste lithium batteries; one 5-gallon container labeled universal waste odd group of dead batteries; and one 1-gallon container labeled universal waste zinc batteries near the roll-up door and the flammable liquid barrel storage area (Photo 1).

The inspectors observed a total of six 55-gallon drums of waste flammable liquid (xylene, toluene) in the flammable liquid bulking and barrel storage area (Photo 2 and 3). Each of these containers was labeled D001, F003, F005 hazardous waste and identified with a DOT flammable liquid hazard placard, but none were identified with an indication that the contents are also toxic. Each container was also marked with one of the following accumulation start dates: February 2, 2023, February 8, 2023, February 16, 2023, March 2, 2023, March 16, 2023, and March 29, 2023. Anne Foster stated that only organic solvents are consolidated in these 55-gallon drums, and that all chlorinated solvents remain in the original lab containers, which are eventually shipped off-site in lab packs.

Pursuant to RCRA Hazardous Waste Facility Permit ALD079474037, which incorporates ADEM Admin. Code r.335-14-9-.05(1) [40 C.F.R. § 268.50(a)(2)(i)(C)], an owner/operator of a hazardous waste treatment, storage, or disposal facility that stores hazardous waste restricted from land disposal under subpart C of RCRA section 3004 in containers must clearly mark each container to identify its contents with an indication of the hazards of the contents.

The inspectors also observed one 55-gallon drum labeled nonhazardous waste, one 55-gallon drum labeled nonregulated waste, one 30-gallon drum labeled hazardous waste flammable liquid (formaldehyde, methanol), one 55-gallon drum labeled hazardous waste AEL, and two orange bags of ethidium bromide solution in the flammable liquid barrel storage and bulking area (Photo 3).

- The drum of waste flammable liquid (formaldehyde, methanol) was labeled D001, F003 hazardous waste, identified with a DOT corrosive hazard placard, and dated August 15, 2022. Personnel explained that the contents of the drum meet DOT's definition of a corrosive

material, but do not meet the EPA definition of a hazardous waste exhibiting the characteristic of corrosivity.

- The drum of hazardous waste AEL was identified with the DOT toxic, corrosive, and flammable hazard placards and dated September 19, 2022, but it was not marked with the EPA Hazardous Waste Code.
- Anne Foster explained that the two orange bags contain ethidium bromide solution, and the bags have been set in this area to dry out before they are added to the 55-gallon drum of nonhazardous waste.

Finally, the inspectors observed the 250-gallon neutralization tank, which was empty at the time of the inspection (Photo 4). Personnel explained that the tank is used approximately once every one or two months. According to the neutralization records, the tank was not used between July 21, 2022, and January 17, 2023. Since then, the tank has been used a total of four times, with the most recent use on March 7, 2023.

Landscaping / Grounds Maintenance Area SAAs:

The USA manages one SAA in the Landscaping / Grounds Maintenance Area for managing used aerosol cans and another for managing the contents of punctured aerosol cans. The inspectors observed one 55-gallon drum in each SAA (Photo 5). Each drum was labeled as hazardous waste and marked with an indication that its contents are flammable.

The USA also accumulates used oil and oil contaminated materials in the Landscaping / Grounds Maintenance Area. The inspectors observed a secondary containment pallet holding one 55-gallon drum of used oil, one 5-gallon bucket containing an oil filter and absorbent material, one 10-gallon bucket containing oil contaminated rags and one 3-gallon container of sharpening compound (Photo 6). Next to the containment pallet, the inspectors also observed a trash can containing oil contaminated rags. The 55-gallon drum, 5-gallon bucket, 10-gallon bucket, and trash can were each labeled with the words “used oil”.

Maintenance Division UW Storage:

The USA manages universal waste in a caged area within the Maintenance Division (Photo 7). The inspectors observed two 4-foot cylinders; three 2-foot square boxes; three 4-foot boxes; three 8-foot boxes, and three pallets, each containing approximately eighteen 4-foot boxes in this area. Each box was labeled universal waste lamps and marked with an accumulation start date. Facility personnel stated that the USA ships universal waste off-site three or four times each year, and the oldest date observed on any container was April 22, 2022.

Transportation Department SAA:

The USA manages one SAA at the Transportation Department for managing hazardous waste paint related material that is generated by puncturing used aerosol cans. The inspectors observed one 55-gallon drum in this SAA. The drum was located along the wall, and it was equipped with a can puncture device. The drum was labeled as D001 hazardous waste paint related material, but it was not marked with an indication of the hazards of its contents.

Pursuant to ADEM Admin. Code r.335-14-3-.01(5)(a)5. [40 C.F.R. § 262.15(a)(5)], which is a condition of the SAA Permit Exemption, a generator is required to mark or label its containers with an indication of the hazards of the contents.

The USA also accumulates used oil and oil contaminated materials at the Transportation Department. The inspectors observed one 200-gallon tank containing used oil, one 55-gallon drum containing used oil filters, and one 55-gallon drum containing oil contaminated rags in this area (Photo 8). The tank was labeled with the words “used oil”.

Science Laboratory Building SAAs:

The USA manages one SAA in the Science Laboratory Building for managing hazardous waste that may be generated in the 201 Chemistry Stockroom, the 202 Solvent Room, and the 220 Chemistry Laboratory. Hazardous wastes are routinely collected in hazardous waste containers as they are generated at individual workstations in the teaching laboratories. The contents of the workstation containers are then consolidated into a 2½-liter bottle, which is kept in the laboratory for daily use. At the end of every week, the contents of the 2½-liter bottle are transferred into a carboy for management in the Solvent Room. At the end of each semester, personnel perform a waste cleanout event to ensure all hazardous waste has been removed from the chemistry laboratories. Hazardous wastes are also generated whenever chemicals in the stockroom become expired or unwanted.

The inspectors observed shelves of chemical products and empty containers inside the Chemistry Stockroom.

The inspectors observed Chemistry Laboratory Room 220, which was unoccupied. The Laboratory was set up for the next lesson, and each workstation was equipped with the equipment necessary to perform the lesson activities, including a small empty container for accumulating hazardous waste. The laboratory was also equipped with a 2½-liter waste container for consolidating hazardous waste. Each waste container was labeled with the words “hazardous waste.” When they are in use, each of these containers should be marked with an indication of the hazards associated with waste inside that container.

The inspectors also observed the Solvent Room, which contained two flammable cabinets and a mobile cart for holding carboys of hazardous waste (Photo 9). The inspectors observed two one-liter bags of alkaline batteries inside the flammable cabinet, and nine five-gallon carboys on the mobile cart. Each carboy was labeled with the words “hazardous waste” and marked with an indication of the hazards associated with that waste.

Shelby Engineering SAAs:

The USA manages one SAA in the Shelby Engineering Building for managing hazardous waste that is generated in the 4310 Green Chemistry Laboratory. The inspectors observed four 5-gallon pails, twelve 2-liter jugs, and about six <½-liter containers in this SAA (Photo 10). The contents of the containers, which were located inside a laboratory hood, included both product and waste materials. Laboratory personnel maintain an active list of the contents under the laboratory hood on an inventory sheet, which was taped to the side of the hood. It appeared that hazardous waste was contained in only three of the smaller containers. Two of the waste containers were

identified with a hazardous waste tag, but the word “hazardous” waste covered by duct tape on one of the waste tags. The third container was not identified with a hazardous waste tag. None of the containers were marked with an indication of the hazards of its contents, and personnel immediately added this information to the hazardous waste tags.

Pursuant to ADEM Admin. Code r.335-14-3-.01(5)(a)5. [40 C.F.R. § 262.15(a)(5)], which is a condition of the SAA Permit Exemption, a generator is required to mark or label its containers with the words “Hazardous Waste” and with an indication of the hazards of the contents.

The USA manages another SAA in the Shelby Engineering Building for managing hazardous waste that is generated in the 4311 Environmental Engineering Lab. The inspectors observed two ½-gallon containers of hazardous waste corrosives under a laboratory hood in this area (Photo 11). Each container was closed, labeled with the words “hazardous waste”, and marked with an indication of the hazards of its contents.

Contingency Plan:

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 February 2023. The plan describes actions facility personnel must take to prevent or respond 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; it describes arrangements agreed to with the local police department, fire department, and local hospital; and it includes the name and telephone number of the individual identified as the emergency coordinator, and of the individuals identified as alternate emergency coordinators. The plan includes a list of emergency equipment and the location of that equipment at the facility, and that list includes fire extinguishing systems, spill control equipment, communications and alarm systems, and decontamination equipment. Finally, the plan includes a brief evacuation plan, which describes signal(s) to be used to begin evacuation and potential evacuation routes for personnel.

The USA also has a quick reference guide, which identifies the potential SAAs and they type and volume of hazardous waste in each area; a diagram of the TSD Building showing where hazardous wastes are treated and stored 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; and the name of the emergency coordinator(s) and emergency telephone number(s).

Training Records:

The inspectors reviewed facility job descriptions and employee names that were provided for the Assistant Director of Safety and Environmental Compliance, the Director of Safety and Environmental Compliance, an Industrial Hygiene Specialist, a Safety and Environmental Specialist, a Safety Specialist/Fire Marshal, and a Safety and Environmental Compliance Training Specialist. Each description described the requisite skill, education, or other qualifications, and duties of facility personnel assigned to that position. The inspectors also reviewed records of employee hazardous waste training completed since the most recent inspection.

Waste Manifest Records:

The inspectors reviewed available hazardous waste manifest records and land disposal restriction forms for inbound and outbound shipments of hazardous waste sent since the most recent inspection. Hazardous waste manifest records show that lab pack shipments are sent to several different designated facilities twice each year, and barrel shipments are sent to Tradebe (TND000772186) every quarter. The most recent lab pack shipment was sent on March 28, 2023, and the most recent barrel shipment was sent on February 2, 2023.

Inspection Records:

The inspectors reviewed the USA's available records of weekly inspections of the hazardous waste permitted storage area since the date of the last CEI. The inspection log includes the date and time of the inspection, the name of the person conducting the inspection, and comments related to the observations. Hazardous waste treated in the neutralization tank is released immediately following treatment, and the tank is not used to store hazardous waste. Therefore, no daily inspections of the tank are recorded.

12) Closing Conference

The inspectors conducted the exit meeting at 3:00 p.m. with William Guess, Anne Foster, and Savannah Wallace. During this meeting, the inspectors stated their preliminary conclusions of the inspection.

13) List of Attachments

Attachment 1 – Photo Log:

11 Photos taken on: March 29, 2023

Photos taken by: Laurie Benton DiGaetano

Photos taken with: Panasonic DMC TS-5 Digital Camera

EPA Property Tag: S09533

14) Signed

**LAURIE
DIGAETANO**

Digitally signed by LAURIE
DIGAETANO
Date: 2023.05.16 08:08:49 -04'00'

Laurie Benton DiGaetano
Environmental Engineer

Concurrence

**ARACELI
CHAVEZ**

Digitally signed by ARACELI
CHAVEZ
Date: 2023.05.16 18:01:04
-04'00'

Araceli B. Chavez

RCRA Enforcement Section

Attachment 1
RCRA CEI Photographs

Laurie Benton DiGaetano, USEPA

Panasonic DMC TS-5 #S09533



Photo 1: One 55-gallon drum labeled used oil; one 20-gallon container labeled universal waste NiCad batteries; one 30-gallon container labeled universal waste alkaline batteries; one 30-gallon container labeled universal waste nickel metal batteries; one 30-gallon container labeled universal waste lithium batteries; one 5-gallon container labeled universal waste odd group of dead batteries; and one 1-gallon container labeled universal waste zinc batteries observed near the roll-up door and the flammable liquid barrel storage area.



Photo 2: Four 55-gallon drums of waste flammable liquid (xylene, toluene) in the flammable liquid barrel storage area of the TSD Building.



Photo 3: Two 55-gallon drums of waste flammable liquid (xylene, toluene), one 55-gallon drum of non-hazardous waste, one 55-gallon drum of nonregulated waste, one 30-gallon drum of hazardous waste flammable liquid (formaldehyde, methanol), and two orange bags observed in the flammable liquid barrel bulking area of the TSD Building; and one 55-gallon drum of hazardous waste AEL on the floor next to the bulking area.

Attachment 1
RCRA CEI Photographs

Laurie Benton DiGaetano, USEPA

Panasonic DMC TS-5 #S09533



Photo 4: 250-gallon neutralization tank, which was empty at the time of the inspection.



Photo 5: One 55-gallon drum of hazardous waste paint related material from puncturing aerosol cans and one 55-gallon drum of hazardous waste aerosol cans in SAAs at the Landscaping/Grounds Maintenance Area.



Photo 6: A secondary containment pallet holding one 55-gallon drum of used oil, one 5-gallon bucket containing an oil filter and absorbent material, one 10-gallon bucket containing oil contaminated rags and one 3-gallon container of sharpening compound observed next to a trash can containing oil contaminated rags in the Landscaping/Grounds Maintenance Area.

Attachment 1
RCRA CEI Photographs

Laurie Benton DiGaetano, USEPA

Panasonic DMC TS-5 #S09533



Photo 7: Two 4-foot cylinders; three 2-foot square boxes; three 4-foot boxes; three 8-foot boxes, and three pallets, each containing approximately eighteen 4-foot boxes observed in the Maintenance Division. Each box was labeled universal waste lamps and marked with an accumulation start date. Facility personnel stated that the USA ships universal waste off-site three or four times each year, and the oldest date observed on any container was April 22, 2022.



Photo 8: One 200-gallon tank containing used oil, one 55-gallon drum containing used oil filters, and one 55-gallon drum containing oil contaminated rags observed in the Transportation Department. The tank was labeled with the words “used oil”.



Photo 9: Nine five-gallon carboys observed on the mobile cart in the Solvent Room. Each carboy was labeled with the words “hazardous waste” and marked with an indication of the hazards associated with that waste.

Attachment 1
RCRA CEI Photographs

Laurie Benton DiGaetano, USEPA

Panasonic DMC TS-5 #S09533



Photo 10: Four 5-gallon pails, twelve 2-liter jugs, and about six $\frac{1}{2}$-liter containers observed in the 4310 Green Chemistry Laboratory SAA. The contents of the containers included both product and waste materials. It appeared that hazardous waste was contained in only three of the smaller containers. Two of the waste containers were identified with a hazardous waste tag, but the word “hazardous” waste covered by duct tape on one of the waste tags. The third container was not identified with a hazardous waste tag. None of the containers were marked with an indication of the hazards of its contents, and personnel immediately added this information to the hazardous waste tags.



Photo 11: Two $\frac{1}{2}$ -gallon containers of hazardous waste corrosives observed under a laboratory hood in the 4311 Environmental Engineering Laboratory SAA. Each container was closed, labeled with the words “hazardous waste”, and marked with an indication of the hazards of its contents.