United States Environmental Protection Agency
Office of Enforcement and Compliance Assurance
Office of Criminal Enforcement, Forensics and Training

National Enforcement Investigations Center

NEIC

NEICVP1610E01

NEIC CIVIL INVESTIGATION REPORT
Advanced Environmental Options
Spartanburg, South Carolina

Investigation Dates:
December 10-12, 2024

ANDREW RIPPERT
Digitally signed by ANDREW RIPPERT
Date: 2025.04.24 09:50:58 -06'00'

Andrew Rippert
Project Manager, NEIC

TANNER CHENEY
Digitally signed by TANNER CHENEY
Date: 2025.04.24 10:20:33 -06'00'

Tanner Cheney
Analytical Project Manager, NEIC

Authorized for Release by:

Linda TeKrony
Digitally signed by LINDA TEKRONY
DN: c=US, o=U.S. Government, ou=Environmental Protection Agency, cn=LINDA TEKRONY, 0.9.2342.19200300.100.1.1=68001003671918
Date: 2025.04.24 13:51:06 -06'00'

Linda TeKrony, Field Branch Manager, NEIC

Report Prepared for:
EPA Region 4
61 Forsyth St SW
Atlanta, GA 30303

NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
P.O. Box 25227
Building 25, Denver Federal Center
Denver, Colorado 80225

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APPENDICES (*NEIC-created documents)

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INVESTIGATION OVERVIEW

PROJECT OBJECTIVE

U.S. Environmental Protection Agency (EPA) Region 4 (Region) requested EPA's National Enforcement Investigations Center (NEIC) to conduct sampling of waste stored in tanks and containers at the Advanced Environmental Options, Inc. (AEO) facility located at 25 Stan Perkins Road in Spartanburg, South Carolina. The investigation focused on screening and collecting samples from waste containers. Inspectors also assessed AEO's compliance with federal environmental statutes.

Table 1 lists the project team members.

Table 1. PROJECT TEAM MEMBERS		
Team Member	**Organization**	**Project Role**
Andrew Rippert	NEIC	Project manager (PM)
Kristine Andersen	NEIC	Field team member
Richard Helmich	NEIC	Field team member
Bryan Locher	NEIC	Field team member
Jacob Stowell	NEIC	Field team member
Tanner Cheney	NEIC	Analytical project manager (APM) & Laboratory team member
Whylder Moore	NEIC	Laboratory team member
David Tolbert	NEIC	Laboratory team member
Brad Miller	NEIC	Laboratory team member
Christian Beauchemin	NEIC	Laboratory team member
Ben Burns	NEIC	Laboratory team member
REGIONAL AND OTHER CONTACTS		
Kayla Acosta	EPA Region 4	Regional field team member
George McBroom	EPA Region 4	Regional field team member
Devin Elwell	South Carolina Department of Environmental Services (SCDES)	RCRA Inspector
Tom Richmond	SCDES	RCRA Inspector
Jeff Schrag	SCDES	RCRA Inspector

FACILITY CONTACT INFORMATION

Table 2 lists the primary facility contacts.

Table 2. FACILITY CONTACT INFORMATION		
Name, Title	**Phone No.**	**Email Address**
Victor Goldner, Project Manager	864-488-9111	vrgoldner@aeoweb.com
Adam Hitchens, Outside Sales	864-488-9111	ahitchens@aeoweb.com

FACILITY OVERVIEW

According to the EPA Enforcement and Compliance History Online (ECHO) database, this facility (EPA Registry Identification No. SCR000074575) has the following North American Industry Classification System (NAICS) codes (**Table 3**):

Table 3. APPLICABLE NAICS CODES	
NAICS Code	**Description**
562910	Remediation Services

According to RCRA Info, the 25 Stan Perkins Road location (EPA identification No. SCR000074575) operates a 10-day hazardous waste transfer facility, and last notified of hazardous waste activities January 2009. The facility notified as an active facility, but not as a generator of hazardous waste. The Stan Perkins facility has notified as a generator, handler, and accumulator of universal waste since 2008.

AEO owns a second property adjacent to the 25 Stan Perkins Road location that is not actively used. According to RCRA Info, the 150 Franke Drive (also known as 150 Poly Way) (EPA identification No. SCR000768671) location notified as an active facility that is not a generator of hazardous waste in October 2008. Prior to October 2008, the Franke Drive facility notified as a generator, handler, receiver, and accumulator of universal waste. Facility representatives claimed that the site was previously used to store RCRA-empty containers that had since been shipped off-site. The inspection team did not visit the Franke Drive property during the investigation.

FACILITY OPERATIONS SUMMARY

AEO operates multiple locations in South Carolina and North Carolina. The active portion of the Spartanburg facility, and the subject of this investigation, is located at 25 Stan Perkins Road. The 150 Poly Way facility is no longer in use and was not included in this investigation. According to facility representatives, the AEO Spartanburg facility operates as a hazardous waste transfer facility, universal waste handler, and a universal waste destination facility. AEO provides field services from the Spartanburg location including lab packing of hazardous wastes, decontamination, spill and emergency response, biohazardous waste transportation, reverse distribution of schedule 3 to 5 drugs, and general industrial site services. The facility also accepts wastes from off-site sources for disposal and management. The Spartanburg facility operates between 8:00 am and 5:00 pm Monday through Thursday, and from 8:00 am to 2:30 pm on Fridays.

Solid Waste Operations

Customers of AEO offer solid wastes to AEO for recycling or disposal. Shipments are tracked using bills of lading or non-hazardous waste manifests. Liquid wastes accepted by AEO that cannot be recycled are shipped to the AEO facility in Mooresboro, North Carolina. Liquid-phase wastes are solidified at the Mooresboro facility and offered for disposal to the Union County Landfill, of Union, South Carolina. Solid wastes accepted by AEO are also offered for disposal to

the Union County Landfill. Wastes that can be recycled, such as mixtures of fuel and water, are stored at AEO prior to being bulked and offered to fuel recyclers.

AEO requires a signed waste profile for all waste streams prior to acceptance at the Spartanburg facility. Examples of waste profiles can be found in **Appendix A** (**contains company-claimed confidential business information**). The profiles are generated by AEO after consultation with the customer, and then sent to the customer for review and signature. The profile form is used to document that the wastes accepted by AEO are not characterized by generators as hazardous wastes. The non-hazardous waste profile form used by AEO is modeled after those used by RCRA-permitted treatment storage and disposal facilities. The profile form includes sections for generator information, shipping information, state and federal waste codes, department of transportation (DOT) shipping description, DOT hazardous materials characteristics, physical and chemical characteristics, chemical composition, and regulatory information. If AEO representatives determine that generator knowledge is insufficient, AEO requires generators to analyze samples of the waste at a third-party contract laboratory.

Facility representatives explained that some inbound waste containers are screened for RCRA hazardous waste characteristics, such as measuring pH to screen for corrosivity, but not all containers are screened upon acceptance. If wastes accepted by AEO as non-hazardous are found to be hazardous, then AEO manages the mischaracterized waste as hazardous waste for disposal on behalf of the customer and typically does not reject it. Mischaracterized wastes shipped to AEO are offered for disposal to a destination facility on behalf of the customer in lieu of rejection and are stored by AEO until these arrangements are finalized.

During the NEIC inspection, inspectors counted the containers of waste stored at the facility which could be visually identified. Approximately 660 drums and 69 totes of waste were counted in storage at the facility. According to AEO representatives, the quantity of containers holding liquid-phase wastes is approximately equal to the number of containers holding solid-phase wastes. The containers were predominantly marked with green “non-hazardous labels” or blue “non-regulated waste” labels. Markings identifying the contents of the containers included polymerized styrene, rags with dried paint and waste oil, azelaic acid, glycol solids, machine oil, formaldehyde, aliphatic hydrocarbons and water, latex and water, phthalic acid, plastic solids, and broken glass. The containers were stacked on pallets up to three high, and there was insufficient aisle space to access all containers for visual inspection of container markings. Photos of the containers and facility conditions can be found in **Appendix B**.

AEO operates a non-hazardous wastewater treatment facility on the Spartanburg property. Non-hazardous wastewaters are brought to the facility by truck and stored in an underground storage tank adjacent to the treatment system. The system treats the wastewater and discharges it under National Pollution Discharge Elimination System permit SCR006503. At the

time of the NEIC inspection, the only waste stream accepted for treatment at the wastewater treatment facility was from the Albemarle Lithium of Kings Mountain, North Carolina. According to facility representatives, Albemarle Lithium shipped truckloads of wastewater to AEO for treatment once or twice per week. The wastewater treatment facility also processes stormwater collected throughout the facility in sumps, drains, and secondary containment units and consolidates the waste streams in the underground storage tank.

Hazardous Waste Operations

AEO does not own or operate any permitted hazardous treatment storage and disposal facilities (TSDs) and serves as a transporter of hazardous wastes between its customers and permitted TSDs. Facility representatives explained that customers contact AEO for hazardous waste disposal services, and AEO assists clients with hazardous waste characterization. AEO then identifies a TSD that it has a contract with for disposal and transports the waste to the destination facility on behalf of the generator. Facility representatives stated that AEO contracts primarily with the following TSDs for treatment and disposal:

- Tradebe Treatment and Recycling, LLC – TN, EPA Identification No. TND000772186
- Tradebe Treatment and Recyling, LLC, – IN, EPA Identification No. IND000646943
- Giant Resource Recovery Sumter, Inc., EPA Identification No. SCD036275626
- DLD Environmental Services, Inc., EPA Identification No. MID092947928

Facility representatives explained that in general, wastes that are ignitable are transported to Tradebe or Giant Resource Recovery, and lab packed wastes are transported to DLD Environmental Services. AEO completes the TSD-specific profile on behalf of their customers and coordinates waste acceptance with the TSD. After the TSD approves the profile and agrees to accept the waste, AEO obtains pricing from the TSD for disposal. AEO then schedules a date to take custody of the waste using a hazardous waste manifest for transportation to the TSD on behalf of the customer. Most hazardous wastes that are accepted by AEO for transport from customers are first transported to the AEO Spartanburg facility for storage prior to transportation for disposal. Loads of containers from multiple generators are combined into one truck load for transportation to the TSD. Facility representatives stated that hazardous wastes in transport custody are not combined from smaller to larger containers on-site.

NEIC inspectors observed containers of hazardous waste stored throughout the main warehouse of the facility in multiple locations. The wastes included lab packs packaged by AEO on behalf of local businesses and universities, 55-gallon containers of solid and liquid hazardous wastes, and cubic yard boxes of solid hazardous wastes. Hazardous wastes stored on the floor of the warehouse were interspersed with containers marked as “non-hazardous” or “non-regulated” waste and universal waste and supplies. The wastes were segregated by hazardous waste manifest awaiting transportation to final disposal, and some of the shipments were

marked with yellow “caution” tape to delineate them from adjacent waste containers (**Appendix B**, photos 556, 573, 576, 578, 591, 605, and 609). Hazardous wastes from illicit drug labs were stored in a secured cage (**Appendix B**, photo 633), and higher-hazard wastes such as organic peroxides were stored in a cabinet connected to a fire suppression system (**Appendix B**, photos 618 to 623). Drums and supersacks of solids were stored in a steel shipping container stored outside and adjacent to the warehouse (**Appendix B**, photos 624 to 632). NEIC inspectors reviewed manifests and inventory tracking logs provided by AEO for wastes in transport stored at the facility and observed that many of the wastes stored on-site had been at the facility for more than ten days (**Appendix C**, **Appendix D**, **Appendix E**, and **Appendix F**).

Facility representatives stated that wastes accepted from very small quantity generator (VSQG) clients are stored at the AEO 10-day transfer facility. VSQG wastes are only accepted by AEO using a hazardous waste manifest and are not accepted for transport using a bill of lading. AEO representatives claimed that VSQG wastes have no accumulation time limit, and that AEO stores VSQG wastes at the AEO facility on the VSQG customer’s behalf “under VSQG rules” until the VSQG quantity exclusion limit is met. When enough VSQG wastes are stored to make transportation economically efficient, AEO transports the VSQG wastes to the TSD for disposal.

Facility representatives explained that AEO attempts to transport wastes accepted from small quantity generator and large quantity generator status customers from AEO’s 10-day transfer facility to the TSD within the 10-day limit. At the time of the NEIC inspection, some wastes from small quantity and large quantity generators had become “stuck” because the DLD Environmental Services TSD had recently stopped accepting hazardous waste, and acceptance of wastes managed by AEO at Tradebe facilities had decreased.

The AEO Spartanburg facility also operates as a large quantity handler of universal waste. Universal waste mercury-containing devices, batteries, lamps, and aerosol cans are accepted at the facility for management. Batteries and lamps are collected and shipped to off-site facilities for recycling. Universal waste aerosol cans are punctured using a drum-top puncturing unit connected to a filter. The punctured, drained cans are collected as scrap metal, and the liquid collected from the puncturing process is managed as flammable hazardous waste generated by AEO (**Appendix B**, photos 573 and 574).

FIELD ACTIVITIES SUMMARY

The NEIC field team was joined by Kayla Acosta and George McBroom of EPA Region 4, as well as Tom Richmond, Devin Elwell, and Jeff Schrag of SCDES during the inspection. Not all participants were present for each day of the inspection. On December 10, 2024, NEIC inspectors conducted an opening meeting and presented credentials to Victor Goldner, AEO’s project manager.

The NEIC field team performed the following activities to accomplish the investigation objectives:

- Met with facility personnel to discuss process operations, including waste acceptance procedures, hazardous waste transportation and storage procedures, universal waste management operations, and solid waste management.
- Inspected the facility to observe process operations, waste management practices, and hazardous waste, universal waste and solid waste stored on site.
- Inspected and counted containers of hazardous waste and non-hazardous waste stored on-site.
- Collected photos of wastes stored on-site and facility conditions.
- Opened forty-nine containers marked as non-hazardous waste and screened for pH using pH strips and volatile organic compounds (VOCs) using a photoionization detector.
- Collected samples of liquid wastes from twenty-one containers marked as non-hazardous waste, one sample from the underground wastewater storage tank, and one sample from an aboveground skid tank.
- Reviewed and copied facility documents including non-hazardous waste profiles, hazardous waste transfer facility storage records, and hazardous waste manifests for wastes in transport stored at AEO's transfer facility.

Measurement and Sampling Activities

The NEIC field team provided support to this investigation by visually inspecting, screening and sampling waste containers on site. Waste containers were screened for pH using pH strips and volatile organic compounds using a photoionization detector. Container marking, visual characteristics, and screening information were used to identify waste containers of interest for sample collection. The NEIC field team also collected liquid samples from one underground wastewater storage tank and one aboveground storage tank. **Table 4** summarizes field measurement and field sampling activities. A copy of the chain of custody record is provided in **Appendix I**.

All environmental measurement activities were performed in accordance with the NEIC quality system. All field sampling, field measurements, and laboratory measurements described in this report are within the scope of NEIC's ISO/IEC 17025 accreditation issued by the ANSI National Accreditation Board (certificate No. FT-0303).

NEIC offered split samples for all locations samples on **Table 4** below. AEO accepted split samples for all locations listed on **Table 4**, except for samples collected from location WWTP-01, the underground wastewater treatment plant storage tank. Samples collected during the field activities were shipped via FedEx to the NEIC laboratory in Denver, Colorado, for analysis.

Table 4. FIELD MEASUREMENT AND FIELD SAMPLING ACTIVITIES

Location Identifier	Dates	Method, and/or Procedure[1], and Equipment	Measurer Name
MEASUREMENTS			
Used to screen location for safety and/or screen samples for radiation, pH, and VOC content	December 11 and 12, 2024	**NEIC procedure:** Safety and Sample Screening Instruments, NEICPROC/17-002 **Instrument guides:** MSA Altair 5X Multi-Gas Monitoring Equipment RadEye B20-ER – Radiation Detection Equipment pH test strips **Equipment:** RadEye B20-ER 33843 MSA Altair 229418, 173457 pH Test Strips Lot No. HC293086	Jacob Stowell, Kristine Andersen, Richard Helmich

Station No.	Appendix G Photo Nos.	Date and Time	Method, and/or Procedure, and Equipment	Sampler Name
SAMPLING				
D06	302	December 11, 2024, 13:55	**Method:** ASTM D5495: Standard Practice for Sampling with a Composite Liquid Waste Sampler (COLIWASA) **NEIC procedure:** *Container Sampling,* NEICPROC/00-048 **Equipment**: COLIWASA	Kristine Andersen
D08	300	December 11, 2024, 13:51		Kristine Andersen
D09	303	December 11, 2024, 14:00		Kristine Andersen
D10	304	December 11, 2024, 13:55	**Method:** ASTM D5495: Standard Practice for Sampling with a Composite Liquid Waste Sampler (COLIWASA) **NEIC procedure:** *Container Sampling,* NEICPROC/00-048 **Equipment**: COLIWASA	Jacob Stowell
D11	305	December 11, 2024, 13:50		Jacob Stowell
D17	301	December 11, 2024, 14:00		Jacob Stowell
D18	309	December 11, 2024, 14:08		Jacob Stowell
D19	310	December 11, 2024, 14:14	**Method:** ASTM D5495: Standard Practice for Sampling with a Composite Liquid Waste Sampler (COLIWASA) **NEIC procedure:** *Container Sampling,* NEICPROC/00-048 **Equipment**: COLIWASA	Kristine Andersen
D20	294	December 11, 2024, 13:37		Kristine Andersen
D21	297	December 11, 2024, 13:44		Kristine Andersen
SAMPLING				
D22	296, 299	December 11, 2024, 13:44	**Method:** ASTM D5495: Standard Practice for Sampling with a Composite Liquid Waste Sampler (COLIWASA) **NEIC procedure:** *Container Sampling,* NEICPROC/00-048 **Equipment**: COLIWASA	Jacob Stowell
D23	295, 298	December 11, 2024, 13:37		Jacob Stowell
T01	311, 319	December 11, 2024, 14:17		Jacob Stowell

Table 4. FIELD MEASUREMENT AND FIELD SAMPLING ACTIVITIES				
T04	312	December 11, 2024, 14:17	**Method:** ASTM D5495: Standard Practice for Sampling with a Composite Liquid Waste Sampler (COLIWASA) **NEIC procedure:** *Container Sampling,* NEICPROC/00-048 **Equipment**: COLIWASA	Kristine Andersen
T12	313	December 11, 2024, 14:24	**Method:** ASTM D5495: Standard Practice for Sampling with a Composite Liquid Waste Sampler (COLIWASA) **NEIC procedure:** *Container Sampling,* NEICPROC/00-048 **Equipment**: COLIWASA	Jacob Stowell
T17	316, 318	December 11, 2024, 14:36	**Method:** ASTM D5495: Standard Practice for Sampling with a Composite Liquid Waste Sampler (COLIWASA) **NEIC procedure:** *Container Sampling,* NEICPROC/00-048 **Equipment**: COLIWASA	Kristine Andersen
T18	314	December 11, 2024, 14:30		Kristine Andersen
T19	315	December 11, 2024, 14:35	**Method:** ASTM D5495: Standard Practice for Sampling with a Composite Liquid Waste Sampler (COLIWASA) **NEIC procedure:** *Container Sampling,* NEICPROC/00-048 **Equipment**: COLIWASA	Jacob Stowell
T21	320, 321	December 12, 2024, 08:59	**Method:** ASTM D5495: Standard Practice for Sampling with a Composite Liquid Waste Sampler (COLIWASA) **NEIC procedure:** *Container Sampling,* NEICPROC/00-048 **Equipment**: COLIWASA	Kristine Andersen
T24	306	December 11, 2024, 14:07		Kristine Andersen
T25	307	December 11, 2024, 14:03	**Method:** ASTM D5495: Standard Practice for Sampling with a Composite Liquid Waste Sampler (COLIWASA) **NEIC procedure:** *Container Sampling,* NEICPROC/00-048 **Equipment**: COLIWASA	Jacob Stowell

Table 4. FIELD MEASUREMENT AND FIELD SAMPLING ACTIVITIES				
SAMPLING				
WWTP-01	563	December 11, 2024, 11:01	**Method:** ASTM D 5743: Standard Practice for Sampling Single or Multilayered Liquids, With or Without Solids, in Drums or Similar Containers **NEIC procedure:** *Tank Sampling,* NEICPROC/00-060 **Equipment:** Tank COLIWASA	Richard Helmich
SKID-01	317	December 12, 2024, 14:48		Jacob Stowell
[1] The current version of each procedure, at the time of the investigation, was followed.				

LABORATORY ACTIVITIES SUMMARY

Tanner Cheney of the laboratory team received the samples at the NEIC in Denver, Colorado via FedEx, from Andrew Rippert on December 20, 2024. The laboratory team analyzed the samples at the NEIC laboratory for ignitability, pH, water content, reactive sulfides, TCLP elemental constituents and VOCs to determine if they exhibited RCRA characteristics. A copy of the chain of custody record is provided in **Appendix I**. The original chain of custody record, signed December 12, 2024, was rewritten for clarity and accuracy upon sample receipt at NEIC, signed December 20, 2024. The original chain of custody document remains in the project file. Pertinent photographs from the laboratory activities are provided in **Appendix J**.

Station location samples WWTP-01a and WWTP-01b were combined as instructed by the project manager (**Appendix J** photo DSC_0051.JPG). Station location samples SKID-01c and SKID-01d were combined due to the small amount of solids present in the individual samples. Station location samples T25c and T25d were combined due to the small volume of the top liquid layer present in the individual samples (**Appendix J** photo DSC_0076.JPG). Likewise, station location samples D18c and D18d were combined due to the small volume of the top liquid layer present in the individual samples (**Appendix J** photo DSC_0060.JPG).

Table 5 summarizes the analytical methods followed, as well as the analysts and dates of the analyses. Data quality summaries, including uncertainty measurements, for all laboratory measurements are maintained in the project file. **Table 6** summarizes the analytical results. Laboratory sample descriptions, observations, method modifications, and notes are documented in the project file

Table 5. ANALYTICAL OBJECTIVE, TECHNIQUE, AND METHOD; ANALYST; AND DATE PERFORMED			
Analytical Objective, Technique, and Method[1, 2]	**NEIC Analyst**	**Samples Analyzed by Method (Station Nos.)**	**Dates Performed**
Objective: Determination of flashpoint if less than 60 degrees Celsius. **Technique:** Flashpoint by Setaflash closed cup tester. **Method:** ASTM Method D32787-78: Standard Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus	Whylder Moore	D06b D08b D10b D18 D19b T01e T01f T01g T04c T12c T19d L-1	January 22-28, 2025
Objective: Determination of mercury concentration. **Technique:** Cold vapor atomic absorption **Method:** Modified EPA Method 245.1: Determination of Mercury in Water by Cold Vapor Atomic Absorption Spectrometry **Preparatory method:** EPA Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846) Test Method 1311: Toxicity Characteristic Leaching Procedure	Ben Burns	D9b D11d D17b D20c D21c D22c D23c T17e T18b T24d SKID-01 WWTP	March 10-11. 2025
Objective: Determination of pH **Technique:** Potentiometric analysis **Method:** EPA *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846) Test Method 9040C: pH Electrometric Measurement	David Tolbert	D17b D20d D21d D22d D23d T04c T12c T19d T21c T25c	January 23 - 27 2025
Objective: Determination of reactive sulfide concentration. **Technique:** Microdiffusion followed by automated methylene blue colorimetry. **Method:** Sulfide Analysis, NEICPROC/00-003 using Conway diffusion cells and OI Analytical®, a Xylem brand, Method XA00251 Sulfide, Standard Methods by Flow Injection Analysis.	Tanner Cheney	D11c D20d D21d D22d D23d	February 20, 2025

Table 5. ANALYTICAL OBJECTIVE, TECHNIQUE, AND METHOD; ANALYST; AND DATE PERFORMED			
Analytical Objective, Technique, and Method[1, 2]	**NEIC Analyst**	**Samples Analyzed by Method (Station Nos.)**	**Dates Performed**
Objective: Determination of VOC concentrations in TCLP extracts **Technique:** Gas chromatography with mass spectrometry **Method:** EPA *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846) Test Method 8260D: Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS) **Preparatory method[3]:** EPA *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846) Test Method 1311: Toxicity Characteristic Leaching Procedure & EPA *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846) Test Method 5030B: Purge-and-Trap for Aqueous Samples	Christian Beauchemin	D19b	February 12 – 25, 2025
Objective: Determination of elemental constituents in TCLP extracts **Technique:** Inductively coupled plasma-optical emission spectrometry **Method:** EPA *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846) Test Method 6010D: Inductively Coupled Plasma-Atomic Emission Spectrometry **Preparatory method[3]:** EPA *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846) Test Method 1311: Toxicity Characteristic Leaching Procedure & EPA *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846) Test Method 3010A: Acid Digestion of Aqueous Samples and Extracts for Total Metals for Analysis by Flame Atomic Absorption Spectroscopy (FLAA) or Inductively Coupled Plasma Spectroscopy (ICP)	Brad Miller	D09b D11d D17b D20c D21c D22c D23c T17e T18b T24d SKID WWTP	February 25, 2025

Table 5. ANALYTICAL OBJECTIVE, TECHNIQUE, AND METHOD; ANALYST; AND DATE PERFORMED			
Analytical Objective, Technique, and Method[1, 2]	**NEIC Analyst**	**Samples Analyzed by Method (Station Nos.)**	**Dates Performed**
Objective: Determination of water content **Technique:** Karl Fischer titration **Method:** EPA *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846) Test Method 9000: Determination of Water in Waste Materials by Karl Fischer Titration	Whylder Moore	D06b D08b D10b D17b D18 D19b D20d D21d D22d D23d T01e T01f T01g T04c T12c T19d L-1 T21c T25	January 1, 2025
[1] Data quality summaries, including uncertainty measurements, for all laboratory measurements are maintained in the project file. [2] The current version of each procedure, at the time of the investigation, was followed. [3] TCLP performed by Tanner Cheney			

Table 6. SUMMARY OF ANALYTICAL RESULTS					
Station No.	**Station Location/ Description of Sample Location (see Table 4)**	**Layer**	**Laboratory Sample Physical Description**	**Appendix J Photo Nos.**	**Findings[1,2]**
D06	55-gallon steel drum, black, closed top, marked “Non-RCRA Regulated Waste” and “Environmentally hazardous substances, liquid, n.o.s, (Formaldehyde)	Single phase	Green opaque nonviscous liquid	DSC_0005.JPG	No flashpoint <60˚C Water content 88%
D08	55-gallon steel drum, black, closed top, marked “Non-RCRA regulated waste” and “Environmentally hazardous substances, liquid, n.o.s, (Formaldehyde)	Single phase	Green cloudy nonviscous liquid	DSC_0006.JPG	No flashpoint <60˚C Water content 87%
D09	55-gallon steel drum, red, closed top, marked “Non-hazardous waste” and “used oil”	L-1	Brown opaque viscous liquid	DSC_0007.JPG DSC_0052.JPG DSC_0066.JPG	Arsenic by TCLP 0.26 mg/L Chromium by TCLP 0.07 mg/L Selenium by TCLP 0.65 mg/L
		L-2	Brown cloudy nonviscous liquid		

Table 6. SUMMARY OF ANALYTICAL RESULTS					
Station No.	**Station Location/ Description of Sample Location (see Table 4)**	**Layer**	**Laboratory Sample Physical Description**	**Appendix J Photo Nos.**	**Findings[1,2]**
D10	55-gallon steel drum, black, closed top, marked “Non-RCRA regulated waste” and “Environmentally hazardous substances, liquid, n.o.s, (Formaldehyde)”	Single phase	Green opaque nonviscous liquid	DSC_0008.JPG	No flashpoint <60˚C Water content 86%
D11	55-gallon poly drum, black, open top, marked “Non-hazardous waste” and “used mop water” and “machine oil”	L-1	Yellow opaque nonviscous liquid	DSC_0009.JPG DSC_0010.JPG DSC_0068.JPG DSC_0069.JPG	Reactive sulfides 2.1 µg/L Chromium by TCLP 0.31 mg/L
		S-2	Gray grain solids		
D17	55-gallon poly drum, plastic, closed top, marked “Non-hazardous waste” and “Corrosive liquid, acidic, inorganic, n.o.s. (contains Orthophosphoric Acid)”	Single phase	Yellow clear nonviscous liquid	DSC_0011.JPG	pH 2.9 Water content 71% Cadmium by TCLP 0.15 mg/L Chromium by TCLP 1.83 mg/L Selenium by TCLP 0.19 mg/L
D18	55-gallon steel drum, black, closed top, marked “Non-hazardous waste” and “Hydrocarbons and Water”	L-1	Yellow cloudy nonviscous liquid	DSC_0012.JPG DSC_0013.JPG DSC_0053.JPG	Flashpoint <0˚C Water content <2%
		L-2	Colorless cloudy nonviscous liquid	DSC_0054.JPG DSC_0060.JPG DSC_0063.JPG	No flashpoint <60˚C Water content 92%
D19	55-gallon steel drum, black, closed top, marked “Non-hazardous waste” and “Hydrocarbons and Water”	Single phase	Yellow clear nonviscous liquid	DSC_0014.JPG	No flashpoint <60˚C Water content 100% Benzene by TCLP 0.368 mg/L
D20	55-gallon poly drum, black, open top, marked “Non-hazardous waste” and “used mop water” and “contains oily wash water”	L-1	Brown opaque nonviscous liquid	DSC_0015.JPG DSC_0016.JPG DSC_0064.JPG DSC_0065.JPG	pH 12.3 Water content 90% Reactive sulfides 18 µg/L Barium by TCLP 3.44 mg/L Chromium by TCLP 0.19 mg/L Lead by TCLP 0.66 mg/L Selenium by TCLP 0.07 mg/L
		S-2	Gray grains and white solids		
D21	55-gallon poly drum, black, open top, marked “Non-hazardous waste” and “used mop water”	L-1	Brown opaque nonviscous liquid	DSC_0017.JPG DSC_0018.JPG DSC_0064.JPG DSC_0065.JPG	pH 12.3 Water content 91% Reactive sulfides 22 µg/L Barium by TCLP 2.69 mg/L Chromium by TCLP 0.27 mg/L

Table 6. SUMMARY OF ANALYTICAL RESULTS					
Station No.	**Station Location/ Description of Sample Location (see Table 4)**	**Layer**	**Laboratory Sample Physical Description**	**Appendix J Photo Nos.**	**Findings[1,2]**
	and "contains oily wash water"	S-2	Gray grains and white solids		Lead by TCLP 0.44 mg/L Selenium by TCLP 0.08 mg/L
D22	55-gallon poly drum, black, open top, marked "Non-hazardous waste" and "used mop water" and "contains oily wash water"	L-1	Brown opaque nonviscous liquid	DSC_0019.JPG DSC_0020.JPG DSC_0064.JPG DSC_0065.JPG	pH 12.2 Water content 91% Reactive sulfides 20 µg/L Barium by TCLP 4.24 mg/L Chromium by TCLP 0.19 mg/L Lead by TCLP 0.60 mg/L Selenium by TCLP 0.07 mg/L
		S-2	Gray grains and white solids		
D23	55-gallon poly drum, black, open top, marked "Non-hazardous waste" and "used mop water" and "contains oily wash water"	L-1	Brown opaque nonviscous liquid	DSC_0021.JPG DSC_0022.JPG DSC_0064.JPG DSC_0065.JPG	pH 12.2 Water content 100% Reactive sulfides 27 µg/L Arsenic by TCLP 0.03 mg/L Barium by TCLP 5.15 mg/L Chromium by TCLP 0.16 mg/L Lead by TCLP 0.50 mg/L Selenium by TCLP 0.07 mg/L
		S-2	Gray grains and white solids		
T01	270 gallon tote, marked "CG525 Emulsion" with pink liquid	L-1	Red opaque nonviscous liquid	DSC_0023.JPG DSC_0024.JPG DSC_0025.JPG	Flashpoint 16˚C[3] Water content <2%[3]
		L-2	Brown opaque nonviscous liquid	DSC_0026.JPG DSC_0027.JPG DSC_0049.JPG DSC_0050.JPG DSC_0070.JPG DSC_0071.JPG	N/A
T04	270 gallon tote, marked "Non-hazardous waste" and "Contains Bituminous" with black liquid contents	L-1	Black opaque nonviscous liquid	DSC_0028.JPG DSC_0029.JPG DSC_0057.JPG DSC_0062.JPG DSC_0072.JPG	No flashpoint <60˚C pH 8.0 Water content 92%
		S-2	Black tar-like solid		
T12	270 gallon tote, marked "Non-hazardous waste" and "Contains Bituminous" with black liquid contents	L-1	Gray opaque nonviscous liquid	DSC_0030.JPG DSC_0031.JPG DSC_0056.JPG DSC_0061.JPG DSC_0073.JPG	No flashpoint <60˚C pH 7.6 Water content 91%
		S-2	Black tar-like solid		
T17	270 gallon tote, marked "Non-hazardous waste" and "Non-Hazardous	Single phase	Blue clear nonviscous liquid	DSC_0032.JPG DSC_0033.JPG DSC_0034.JPG	Chromium by TCLP 0.37 mg/L Selenium by TCLP 0.11 mg/L

Table 6. SUMMARY OF ANALYTICAL RESULTS					
Station No.	**Station Location/ Description of Sample Location (see Table 4)**	**Layer**	**Laboratory Sample Physical Description**	**Appendix J Photo Nos.**	**Findings[1,2]**
	Rinse Water" with bluish green liquid			DSC_0035.JPG DSC_0036.JPG	
T18	270 gallon tote, marked "Non-hazardous waste" and "Non-Hazardous Rinse Water" with bluish green liquid	Single phase	Green cloudy nonviscous liquid	DSC_0037.JPG	Chromium by TCLP 0.08 mg/L
T19	270 gallon tote, marked "Non-hazardous waste" and "Non-DOT/Non-RCRA Regulated Materials (Contains Glycol and Azelaic Acid)"	L-1	Yellow clear nonviscous liquid	DSC_0038.JPG DSC_0039.JPG DSC_0074.JPG DSC_0075.JPG	No flashpoint <60˚C pH 3.6 Water content 2%
		S-2	White crystal solids		
T21	270 gallon tote, marked "Non-hazardous waste" with a blue liquid.	Single phase	Green clear nonviscous liquid	DSC_0040.JPG DSC_0041.JPG DSC_0042.JPG	pH 1.0 Water content 60%
T24	270 gallon tote, marked "Non-hazardous waste"	Single phase	White opaque nonviscous liquid	DSC_0043.JPG DSC_0044.JPG	Chromium by TCLP 0.04 mg/L
T25	270 gallon tote, marked "Non-hazardous waste" with a bluish grey liquid	L-1	Yellow opaque nonviscous liquid	DSC_0045.JPG DSC_0046.JPG DSC_0076.JPG DSC_0077.JPG	Water content <2%
		L-2	Brown opaque nonviscous liquid		pH 12.9 Water content 90%
WWTP-01	Underground wastewater storage tank, with a clear liquid	Single phase	Colorless clear nonviscous liquid	DSC_0003.JPG DSC_0051.JPG	Barium by TCLP 0.80 mg/L Chromium by TCLP 0.06 mg/L
SKID-01	Blue aboveground skid tank, two-layered cloud brown liquid	L-1	Brown opaque viscous liquid	DSC_0004.JPG DSC_0047.JPG DSC_0058.JPG DSC_0059.JPG	Lead by TCLP 5.2[4] mg/L Arsenic by TCLP 0.036 mg/L Barium by TCLP 1.0 mg/L Chromium by TCLP 0.12 mg/L Selenium by TCLP 0.23 mg/L
		L-2	Gray opaque nonviscous liquid		
		S-3	Gray grain solids		

[1] mg/L = milligram per liter
[2] µg/L = microgram per liter
[3] Result represents the average value of three measurements from sample containers collected from tote T01
[4] Result represents an asymmetric uncertainty with lower bounds of 2.6 and upper bounds of 13.0 mg/L

INVESTIGATION OBSERVATIONS

NEIC made the following observations during the RCRA compliance inspection. NEIC field team members discussed all observations with facility representatives during the closeout meeting. With certain exceptions, South Carolina has adopted the provisions of the federal hazardous waste regulations as promulgated by the South Carolina Hazardous Waste Management Act in *Regulation 61-79* of the administrative code. The observations below cite the *Regulation 61-79* and federal regulations in place at the time of SCDES' adoption.

These observations are not final compliance determinations. Region 4 will make the final compliance determinations based on its review of this report and other technical, regulatory, and facility information.

Observation: 1

Observation Summary: AEO accepted hazardous waste from off-site sources as a designated facility without a RCRA permit. NEIC laboratory analysis determined waste samples collected from three totes (T01, T21, and T25) and one drum (D18) exhibited RCRA hazardous waste characteristics. These wastes were accepted by AEO from off-site sources.

Citation:

Regulation 61-79 §260.10 [40 Code of Federal Regulations (CFR) § 260.10] Definitions

"Designated facility" means:

(1) A hazardous waste treatment, storage, or disposal facility which:

(i) has received a permit (or interim status) in accordance with the requirements of parts 270 and 124 of these regulations; or

(ii) has received a permit (or interim status) from a state authorized in accordance with 40 CFR part 271; or

(iii) is regulated under 261.6(c)(2) or subpart F of part 266; and

(iv) that has been designated on the manifest by the generator pursuant to 262.20.

Regulation 61-79 § 270.1 [40 CFR § 270.1] Purpose and scope of these regulations.

(b) Overview of the Permit Program. Not later than 90 days after the promulgation or revision of regulations in part 261 (identifying and listing hazardous wastes) generators and transporters of hazardous waste, and owners or operators of hazardous waste treatment, storage, or disposal facilities may be required to file a notification of that activity under South Carolina section 44-56-60 and section 3010 of RCRA. Six months after the initial promulgation of the R.61-79.261 regulations, transporting, treatment, storage, or disposal of hazardous waste by any person who has not applied for or received a permit under these regulations is prohibited. A permit application for a facility consists of two parts, Part A (see section 270.13) and Part B (see section 270.14 and applicable sections in 270.15 through 270.29). For "existing HWM facilities," the requirement to submit an application is satisfied by submitting

Observation: 1

only Part A of the permit application until the date the Department sets for submitting Part B of the application. (Part A consists of Forms 1 and 3 of the Consolidated Permit Application Forms.) Timely submission of both notification under Section 44-56-60 and under section 3010 and Part A qualifies owners and operators of existing HWM facilities (who are required to have a permit under these regulations) for interim status under SC Section 44-56-60 and 3005(e) of RCRA. Facility owners and operators with interim status are treated as having been issued a permit until the Department makes a final determination on the permit application. Facility owners and operators with interim status must comply with interim status standards set forth at R.61-79.265 and .266. Facility owners and operators with interim status are not relieved from complying with other State requirements. For existing HWM facilities, the Department shall set a date, giving at least six months notice, for submission of Part B of the application. There is no form for Part B of the application; rather, Part B must be submitted in narrative form and contain the information set forth in the applicable Sections 270.14 through 270.29. Owners or operators of new HWM facilities must submit parts A and B of the permit application at least 180 days before physical construction is expected to commence..

Evidence:
Table 6
Appendix G Sampling Photographs
Appendix B Field Photographs

Description of Observation:

NEIC inspectors collected samples from two tanks, twelve drums, and nine totes of waste stored on-site. A summary of the analytical results for these samples can be found in **Table 6.** The wastes had been accepted by AEO for management and disposal as non-hazardous waste from off-site sources. Analysis of representative samples collected from the containers using SW-846 methods found the wastes exhibited RCRA characteristics. AEO accepted hazardous wastes from off-site sources as a designated facility without a RCRA permit.

Samples collected from the following containers exhibited RCRA characteristics:

- Tote T01, shown in **Appendix G** photos 109 through 112, contained a nonaqueous liquid waste with a flashpoint measured at 16 degrees Celsius. A liquid waste with a flashpoint less than 60 degrees Celsius exhibits the characteristic of ignitability (D001).
- Tote T21, shown in **Appendix G** photos 176 through 179, contained a liquid waste with a pH measured at 1.0 standard units. A liquid waste with a pH less than 2 standard units exhibits the characteristic of corrosivity (D002).
- Tote T25, shown in **Appendix G** photos 278 to 282, 307, contained a liquid waste with a pH measured at 12.9 standard units. Tote T25 was marked as “non-hazardous waste” and “non-RCRA regulated materials, hydrocarbons and absorbents.” A liquid waste with a pH greater than 12.5 standard units exhibits the characteristic of corrosivity (D002).
- Drum D18, shown in **Appendix G** photos 283 and 284 contained a nonaqueous liquid waste with a flash point measured at less than 0 degrees Celsius. Drum D18 was marked as “non-hazardous waste” and hydrocarbons + water.” A liquid waste with a flashpoint less than 60 degrees Celsius exhibits the characteristic of ignitability (D001).

Observation: 1

The sample collected from the blue aboveground skid tank, SKID-01, contained lead by TCLP calculated at a concentration of 5.2 mg/L, but this calculated value could be as low as 2.6 mg/L or as high as 13.0 mg/L. Wastes that contain lead by TCLP at a concentration greater than 5.0 mg/L exhibit the characteristic of toxicity (D008). The waste stored within the blue aboveground skid tank may exhibit the characteristic of toxicity for lead (D008). The skid tank is shown in **Appendix B** photos 535 and 536, as well as **Appendix G** photo 317. Additional sampling and analysis of the waste in this container would be needed to definitively determine if the waste exhibits the toxicity characteristic.

Observation: 2

Observation Summary: AEO stored containers of hazardous waste for greater than ten days without a RCRA permit for storage of hazardous waste. NEIC inspectors counted 127 containers of hazardous waste that were stored on-site for greater than ten days.

Citation:

Regulation 61-79 § 263.12 [40 CFR § 263.12] Transfer facility requirements.

(a) A transporter who stores manifested shipments of hazardous waste in containers meeting the independent requirements of R.61-79.262.30 at a transfer facility for a period of ten (10) days or less is not subject to regulation under R.61-79.264, 265, 268, and 270 with respect to the storage of those wastes.

Evidence:
Appendix F Lab Pack Inventory
Appendix D Hazardous Waste Manifests
Appendix B Field Photographs
Appendix E Drug Lab Inventory
Appendix C 10-day Hazardous Waste Inventory

Description of Observation:

AEO provided an inventory of manifested hazardous wastes collected from generator sites for transportation to TSDs that were in storage at the Spartanburg facility at the time of NEIC's inspection. The inventory showed containers of hazardous waste in transport by AEO that were stored at the Spartanburg facility for more than 10-days. Storage of manifested shipments of hazardous waste for greater than a period of ten days does not meet the transfer facility requirements at R.61-79.263.12(a).

Appendix F lists manifested shipments of hazardous waste in transport in the custody of AEO. The shipments listed in **Appendix F** are lab packs of hazardous wastes. The column on **Appendix F** marked "in date" lists the date that the manifested shipment arrived at AEO. The following manifested shipments listed on **Appendix F** were stored at AEO for more than ten days:

- Seven containers listed on manifest 016969427FLE with "in date" of 10/29/24. A copy of the manifest can be found in **Appendix D**, page 9.
- One container listed on manifest 016969429FLE with "in date" of 11/7/2024. A copy of the manifest can be found in **Appendix D**, page 7.

Observation: 2

- Four containers listed on manifest 016969432FLE with "in date" of 11/13/2024. A copy of the manifest can be found in **Appendix D**, page 5. Photos of some of the containers are shown in **Appendix B**, photos 624, 625, and 626.
- Five containers listed on manifest 016969435FLE with "in date" of 11/19/2024. A copy of the manifest can be found in **Appendix D**, page 3. Photos of some of the containers are shown in **Appendix B**, photos 629 and 630.
- One container listed on manifest 016969438FLE with "in date" of 11/21/2024. A copy of the manifest can be found in **Appendix D**, page 1. Photos of some of the containers are shown in **Appendix B**, photo 572.

Appendix E lists manifested shipments of hazardous waste in transport in the custody of AEO. AEO explained that these shipments originated from private and commercial laboratories or were generated from the closure of clandestine drug laboratories. Some of the items are stored in a secure cage because the wastes contain chemicals regulated by the Drug Enforcement Administration (**Appendix B**, photo 633). The column on **Appendix E** marked "in date" lists the date that the manifested shipment arrived at AEO. The following manifested shipments listed on **Appendix E** were stored at AEO for more than ten days:

- Eight containers listed on manifest 016968973FLE with "in date" of 2/7/2024.
- Six containers listed on manifest 01696869FLE with "in date" of 7/25/24.
- Two containers listed on manifest 016969373FLE with "in date" of 7/25/24.
- Two containers listed on manifest 016968978FLE with "in date" of 8/7/2024.
- One container listed on manifest 016969383FLE with "in date" of 8/9/2024.
- Three containers listed on manifest 016969381FLE with "in date" of 8/8/2024.
- Four containers listed on manifest 016969386FLE with "in date" of 8/16/2024.
- Two containers listed on manifest 016969389FLE with "in date" of 8/21/2024
- Four containers listed on manifest 016968872FLE with "in date" of 9/4/2024.
- One container listed on manifest 016969401FLE with "in date" of 9/9/2024.
- Five containers listed on manifest 01698870FLE with "in date" of 9/19/2024.
- Seventeen containers listed on manifest 016968871FLE with "in date" of 9/19/2024.

Appendix C lists manifested shipments of hazardous waste in transport in the custody of AEO. The column on **Appendix C** marked "in date" lists the date that the manifested shipment arrived at AEO. The following manifested shipments listed on **Appendix C** were stored at AEO for more than ten days:

- Eight containers listed on manifest 016968871FLE with "in date" of 9/19/2024.
- Four containers listed on manifest 016969407FLE with "in date" of 9/19/2024.
- One container listed on manifest 016969414FLE with "in date" of 9/25/2024.
- One container listed on manifest 016968884FLE with "in date" of 10/2/2024.
- One container listed on manifest 016968888FLE with "in date" of 10/2/2024.
- Nine containers listed on manifest 016968895FLE with "in date" of 10/16/2024.
- Two containers listed on manifest 016968885FLE with "in date" of 10/22/2024.
- One container listed on manifest 016968894FLE with "in date" of 10/23/2024.
- Four containers listed on manifest 016968886FLE with "in date" of 11/1/2024.
- Two containers listed on manifest 016969434FLE with "in date" of 11/18/2024. Photos of some of the containers are shown in **Appendix B**, photo 605 to 610.

Observation: 2

- Six containers listed on manifest 01698893FLE with "in date" of 11/20/2024. Photos of some of the containers are shown in **Appendix B**, photos 578 through 586.
- Six containers listed on manifest 016968892FLE with "in date" of 11/21/2024. Photos of some of the containers are shown in **Appendix B**, photo 577.

Some containers NEIC inspectors observed stored on-site during the inspection were not found in the inventory provided by AEO, including:

- One cubic yard box and one black steel 55-gall on drum, from generator "KCH Engineered Systems" of flammable hazardous waste, with manifest listed as "016969436FLE." See **Appendix B** photos 568 through 571. It is unknown if this container was stored on site for longer than ten days.
- Nine containers listed on manifest 016968895FLE, "in date" of 10/16/2024. Photos of some of the containers are shown in **Appendix B**, photos 607 and 608.
- One closed top steel 55-gallon container in the hazardous waste storage shipping container with a marking of "Job#24199" "MF#016969442FLE" which corresponds with a manifest number of 016969442FLE. See **Appendix B**, photos 627 and 628. It is unknown if this container was stored on site for longer than ten days.

Observation: 3

Observation Summary: AEO stored containers of hazardous waste that were in transport for greater than ten days at the facility, making AEO subject to regulation under R.61-79.264.31 and 264.35. R.61-79.264.31 and 264.35 require AEO to store containers of wastes that minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste, including sufficient aisle space for unobstructed movement of personnel and emergency response equipment. NEIC inspectors observed containers stored in the warehouse that were marked with hazard classes that are incompatible. Improper segregation of hazardous wastes does not meet the requirement to minimize the potential for a fire, explosion, or a sudden or non-sudden release of hazardous wastes. Inadequate aisle spacing and improper segregation of wastes threatens the safety of facility workers.

Citation:

Regulation 61-79 § 263.12 [40 CFR § 263.12] Transfer facility requirements.

(a) A transporter who stores manifested shipments of hazardous waste in containers meeting the independent requirements of R.61-79.262.30 at a transfer facility for a period of ten (10) days or less is not subject to regulation under R.61-79.264, 265, 268, and 270 with respect to the storage of those wastes.

Regulation 61-79 § 264.1 [40 CFR § 264.1] Purpose, scope and applicability.

(b) The standards in this regulation apply to owners and operators of all facilities which treat, store, or dispose of hazardous waste, except as specifically provided otherwise in R.61-79.261 or 264.

Regulation 61-79 § 264.31 [40 CFR § 264.31] Design and operation of facility.

Observation: 3

Facilities must be designed, constructed, maintained, and operated 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.

Regulation 61-79 § 264.35 [40 CFR § 264.35] Required aisle space.

The owner or operator must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless it can be demonstrated to the Department that aisle space is not needed for any of these purposes.

Evidence:
Observation 2
Appendix B Field Photographs

Description of Observation:

As described in **Observation 2**, AEO stored 127 hazardous waste containers in exceedance of the § 263.12(a) ten-day limit for hazardous waste transfer facilities, and therefore was not exempt from the requirements of Regulation 61-79 § 264. Regulation 61-79 § 264.31 requires that facilities must be designed and operated to minimize the possibility of incidents that could threaten human health or the environment. Regulation 61-79 § 264.35 requires facilities to maintain appropriate aisle spacing between hazardous waste containers to allow the unobstructed movement of personnel, fire protection equipment, or other response equipment to access the facility in an emergency. NEIC inspectors observed conditions within the AEO warehouse that did not meet these requirements, constituting an threat to facility workers and the environment.

NEIC inspectors observed that the warehouse was filled with so many containers of waste that the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment would not be possible in most areas of the warehouse in the event of an emergency, spill, or fire (**Appendix B**, photos 576, 578, 580, 591, 605, 619, 620, 621, 624, and 631). Containers of hazardous waste were interspersed with containers of non-hazardous waste and chemical products. In the event of an emergency, equipment would not be able to access hazardous waste containers due to lack of sufficient aisle space. In the event of a spill, fire, or other emergency, the response would be impeded by the tightly packed and stacked containers of hazardous waste, non-hazardous waste, and chemical products.

Additionally, NEIC inspectors observed containers of hazardous waste stored throughout the AEO facility that were of incompatible hazard classes and were not sufficiently segregated to minimize the possibility of a fire, explosion, or release of hazardous waste. Examples of containers marked with incompatible hazard classes are listed below:

- Two boxes marked “corrosive” (**Appendix B** photo 580). The boxes appeared to be lab packs of hazardous waste, with packing lists affixed to the boxes that were marked “hazardous waste.” The department of transportation (DOT) shipping name on one of the lists was marked “UN1789, Waste Hydrochloric acid, 8, PGIII” and waste code “D002” (**Appendix B** photo 581). The department of transportation (DOT) shipping

Observation: 3

name on the second box packing list was marked "UN1824, Waste Sodium Hydroxide, 8, PGIII" and waste code "D002" (**Appendix B** photo 582). Acidic and basic wastes are incompatible and should be segregated when in storage.

- Three containers of hazardous waste liquid stored on pallets marked "oxidizer" that were stored adjacent to drums of waste aerosol cans marked "flammable" and underneath a cubic yard box marked "flammable" and "hazardous waste" (**Appendix B** photos 495, 588 through 591, 605 through 609, 613 and 614). Flammable wastes and oxidizers are incompatible and should be segregated.
- Containers of hazardous waste marked with various hazard classes including "flammable liquid," "oxidizer," "corrosive," "toxic," "inhalation hazard," and "organic peroxide" (**Appendix B** photos 618 to 622). The enclosure where these containers were stored appeared to have a fire suppression system and was kept closed at the time of inspection. The enclosure was overfilled with containers making most of the containers inaccessible for inspection due to inadequate aisle spacing. The various markings on the containers that were visible, including flammable liquids, organic peroxides, corrosives, oxidizers and toxic inhalation hazards are incompatible hazard classes.

Observation: 4

Observation Summary: AEO generates ignitable hazardous waste drained from puncturing universal waste aerosol cans that it accepts from off-site sources. AEO has not notified as a large quantity handler of universal waste aerosol cans.

Citation:

Regulation 61-79 § 273 Subpart C Standards for Large Quantity Handlers of Universal Waste

§ 273.9 [40 CFR § 273.9] Definitions.

Large Quantity Handler of Universal Waste means a universal waste handler (as defined in this section) who accumulates 5,000 kilograms or more total of universal waste (batteries, pesticides, mercury-containing equipment, lamps, or aerosol cans, calculated collectively) at any time. This designation as a large quantity handler of universal waste is retained through the end of the calendar year in which the 5,000 kilogram limit is met or exceeded.

§ 273.32 [40 CFR § 273.32] Notification

(a) (1) Except as provided in paragraphs (a)(2) and (3) of this section, a large quantity handler of universal waste must have sent written notification of universal waste management to the Department, and received an EPA Identification Number, before meeting or exceeding the 5,000 kilogram storage limit.

(b) This notification must include:

(4) A list of all the types of universal waste managed by the handler (e.g., batteries, pesticides, mercury-containing equipment, lamps, and aerosol cans)

Evidence:
Appendix H RCRA Info Source Record

Observation: 4

Appendix B Field Photographs

Description of Observation:

According to the RCRA Info database (**Appendix H**), the EPA identification number associated with the AEO site, SCR000074575, last notified as a non-generator of hazardous waste on January 15, 2009. The 2009 notification lists AEO as a transporter and large quantity handler of batteries, lamps, pesticide and mercury-containing universal wastes. The notification does not include universal waste aerosols as a large quantity handler universal waste accumulation/management activity. As documented in RCRA Info, AEO has not notified EPA of handling of universal waste aerosol cans as required by Regulation 61-79 § 273.32(b)(4). NEIC inspectors observed containers of universal waste aerosol cans received from off-site sources, a container of punctured aerosol cans, and a container of liquid drained from aerosol can puncturing operations (**Appendix B,** photos 588 through 604, 613 and 614). A second 55-gallon drum of hazardous waste liquid drained from universal waste aerosol puncturing activities was in process at the time of inspection. Photos of the container can be found in **Appendix B**, photos 573 and 574. Facility representatives claimed that one 55-gallon drum of hazardous waste liquid generated from aerosol can puncturing activities had been shipped off site in the prior year.

Observation: 5

Observation Summary: AEO generates ignitable hazardous waste drained from puncturing universal waste aerosol cans that it accepts from off-site sources. AEO has not filed a revised or new Site Identification Form for that waste with the SCDES.

Citation:

Regulation 61-79 § 262.12 [40 CFR § 262.12] Notification Requirements upon Generators.

(b) Every generator within the state who produces a new hazardous waste shall file with the Department a revised or new Site Identification Form for that waste within thirty (30) days after such waste is first produced.

Evidence:
Appendix H RCRA Info Source Record
Appendix B Field Photographs

Description of Observation:

According to the RCRA Info database (**Appendix H**), the EPA identification number associated with the AEO site, SCR000074575, last notified as a non-generator of hazardous waste on January 15, 2009. The 2009 notification lists AEO as a transporter and large quantity handler of batteries, lamps, pesticide and mercury-containing universal wastes. Facility representatives stated that one 55-gallon drum of hazardous waste liquid generated from aerosol can puncturing activities had been shipped off site in the prior year. The facility was in the process of filling a second 55-gallon drum of hazardous waste liquid drained from universal waste aerosol puncturing activities at the time of inspection. Photos of the container can be found in **Appendix B**, photos 573 and 574.

AEO did not submit a revised Site Identification Form within 30 days after generating liquid hazardous waste from aerosol can puncturing activities. AEO failed to notify SCDES of new hazardous waste generation as required by Regulation 61-79 § 262.12.

Observation: 6

Observation Summary: AEO stored containers of universal waste aerosol cans that were not marked as "universal waste."

Citation:

Regulation 61-79 §273.34 [40 CFR § 273.34] Labeling/marking.

A large quantity handler of universal waste must label or mark the universal waste to identify the type of universal waste as specified below:

(f) Universal waste aerosol cans (i.e., each aerosol can), or a container in which the aerosol cans are contained, must be labeled or marked clearly with any of the following phrases: "Universal Waste – Aerosol Can(s)," "Waste Aerosol Can(s)" or "Used Aerosol Can(s)."

Evidence:

Appendix B Field Photographs

Description of Observation:

NEIC inspectors observed four 55-gallon containers of universal waste aerosol cans accepted by AEO from off-site sources that were not labeled with the phrases "Universal Waste – Aerosol Can(s)," "Waste Aerosol Can(s)" or "Used Aerosol Can(s)." Many of the 55-gallon containers were too closely spaced to clearly read the labels in the area (**Appendix B**, photos 495, 591, 592). Containers of universal waste aerosol cans are required to be clearly marked.

The containers included:

- One grey steel 55-gallon container marked "Non-RCRA Regulated Waste," "flammable," "spray paint cans," and "Aerosols, flammable" (**Appendix B**, photos 588, 589). The generator was listed as "Boiler Tube Company-Wellford" of Wellford, SC.
- Two black steel 55-gallon containers marked "Non-RCRA Regulated Waste," "flammable," "spray paint cans," and "Aerosols, flammable" (**Appendix B**, photos 596 through 599). The generator was listed as "Boiler Tube Company-Lyman" of Lyman, SC.
- One black steel 55-gallon container marked "Non-RCRA Regulated Waste," "flammable gas," "spray paint cans," and "Aerosols, flammable" (**Appendix B**, photos 613, 614). The generator was listed as "R & E Automated" of Duncan, SC.