

RCRA Inspection Report

1) Inspector and Author of Report

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U.S. Environmental Protection Agency, Region 4
Enforcement and Compliance Assurance Division
Chemical Safety and Land Enforcement Branch
61 Forsyth Street, S.W.
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2) Facility Information

BAE Systems Land and Armaments, LP EPA ID: KYR000007112
163 Rochester Drive
Louisville, Jefferson County, Kentucky 40214

3) Responsible Official

Carlos Bellefant (502) 364-5267
Safety, Health, and Environment Manager carlos.bellefant@baesystems.com

4) Inspection Participants

Curtis L. Jones, BAE System Land and Armaments, LP
Carlos Bellefant, BAE System Land and Armaments, LP
James Dwain Kincaid, BAE System Land and Armaments, LP
Scott Gerstner, Kentucky Department for Environmental Protection
Denise Dzurenka, Kentucky Department for Environmental Protection
William Kappler, U. S. Environmental Protection Agency, Region 4

5) Date of Inspection

October 19, 2022

6) Purpose of Inspection

The purpose of this inspection was for the U.S. Environmental Protection Agency, Region 4, and the Kentucky Department for Environmental Protection to conduct a joint unannounced compliance evaluation inspection (CEI) at BAE System Land and Armaments, LP (hereinafter, “BAE” or the “facility”). The CEI was conducted to determine compliance with the applicable requirements of the Resource Conservation and Recovery Act (RCRA) and the corresponding Kentucky Department for Environmental Protection (KDPEP) regulations. This was an EPA lead inspection.

7) Applicable Regulations¹

Resource Conservation and Recovery Act (RCRA) Sections 3002 (42 U.S. Code – Annotated

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.

U.S.C.A. §§ 6925 and 6927), Kentucky Revised Statutes (KRS) Title XVIII, Chapter 224, Subchapter 46 Hazardous Waste *et seq.*, and Title 401 of the Kentucky Administrative Regulations (KAR) Chapters 30 through 38, 43, and [40 Code of Federal Regulation (C.F.R.) Parts 260 - 270, 273, 278, & 279].

Pursuant to 401 KAR 39:080 Section 1 [40 C.F.R. § 262.15(a)], a generator may accumulate as much as 55 gallons of non-acute hazardous waste in containers at or near the 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 KRS 224.46-520(1) [Section 3005 of RCRA, 42 U.S.C. § 6925], and without complying with 401 KAR 39:080 Section 1 [40 C.F.R. § 262.16(b) or §262.17(a)], except as required in 401 KAR 39:080 Section 1 [40 C.F.R. § 262.15(a)(7) and (8)], provided that the generator complies with the satellite accumulation area (SAA) conditions listed in 401 KAR 39:080 Section 1 [40 C.F.R. § 262.15(a)] (hereinafter referred to as the “SAA Permit Exemption”).

Pursuant to 401 KAR 39:080 Section 1 [40 C.F.R. § 262.17], a generator of 1,000 kilograms or greater of hazardous waste in a calendar month is a large quantity generator (LQG) and may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status, as required by KRS 224.46-520(1) [Section 3005 of RCRA, 42 U.S.C. § 6925], provided that the generator complies with the conditions listed in 401 KAR 39:080 Section 1 [40 C.F.R. § 262.17] (hereinafter referred to as the “LQG Permit Exemption”).

8) Facility Description

BAE is located at 163 Rochester Drive, Louisville, Jefferson County, Kentucky, Latitude 38.170835, and Longitude -84.759970. The facility has been at its present location since 1998 and consists of approximately 36 acres. The facility employs approximately 520 people and operates 24 hours a day, seven days a week, on four 9 to 10-hour rotating shifts. The facility consists of approximately 24 total buildings. The main manufacturing buildings (Building 117 Plating, Building 51 Blasting, Buildings A, B, C, and D) comprise approximately 600,000 square feet of space. The City of Louisville provides potable water and sanitary sewer services. The primary NAICS code for the facility is 332994, Small Arms Manufacturing.

BAE submitted a RCRA Subtitle C Site Identification Form, 8700-12, of its regulated waste activity to KDEP, dated February 24, 2022, notifying as a LQG of hazardous waste, and a small quantity handler of universal waste (SQHUW).

BAE is a private military contractor that manufactures and refurbishes military weapon hardware for the Department of Defense, United States (US) Navy and Coast Guard. The weapon hardware consists of MK38 and MK45 Navy gun mounts for battleships and destroyers, MK110 Coast Guard gun mounts, and missile tubes for submarines.

The gun mount refurbishment process begins when BAE receives the gun mount. The gun mount is then disassembled into separate parts in Building D. The disassembled parts are then cleaned and refurbished in various plating lines in Building 117. The parts are then blasted in Building 51 and painted in Building C. The gun mount parts are assembled in Building A. Gun mount and gun barrel machining and fabrication is conducted in Building B.

The submarine missile tubes are fabricated in Building C. The process begins by machining large steel and stainless-steel panels by cutting, bending, and shaping them to fabricate several circular sections of the missile tube. The fabricated sections are welded together to fabricate one long circular missile tube. The missile tube is then inspected for quality and shipped in its fabricated form for further processing at other facilities.

BAE operates a wastewater treatment plant (WWTP) for the treatment of rinse waters (wastewater) from the plating lines. The treated wastewater generates waste solids that are dewatered in a press generating hazardous waste filter cake.

BAE was issued a Title V permit from the Louisville Metro Air Pollution Control District (Permit No.: O-0073-18-V), which expires on April 30, 2026. The facility controls air emissions under Clean Air Act (CAA) requirements set forth in 40 C.F.R. Parts 60, 61, and 63, and the equipment should be operated, monitored, and repaired in accordance with applicable CAA standards.

9) **Previous Inspection History**

KDEP last inspected BAE for compliance with the Commonwealth of Kentucky hazardous waste regulations on January 11, 2022. No issues were observed at the time of the inspection.

EPA inspected BAE for compliance with the RCRA regulations on April 23, 2015. The facility was cited for not keeping one container closed and not marking or labeling the container with the words “hazardous waste”, not keeping one container closed in a satellite accumulation area, not marking, or labeling a container of batteries with the words “universal waste”, not detailing the location of emergency equipment in the contingency plan, and not documenting one employee handling hazardous waste with training records after July 16, 2013.

10) **Opening Conference**

On October 19, 2022, the EPA inspector William Kappler, accompanied by KDEP inspectors Denise Dzurenka and Scott Gerstner, arrived at BAE at approximately 9:05 a.m. The inspectors arrived at the security office, introduced themselves, and explained the visit as an unannounced RCRA CEI. The inspectors provided security staff with the name of a BAE representative so they could be escorted into the facility. The inspectors provided their driver licenses to security staff and received temporary visitors passes. BAE’s Safety, Health, and Environment (SHE) Manager, Carlos Bellefant, received the inspectors and escorted them to a meeting room. Carlos Bellefant and the inspectors were joined by BAE representatives Curtis L. Jones and James Dwain Kincaid for an opening conference. The inspectors introduced themselves, showed their credentials to the BAE representatives, and explained the purpose of the visit.

The inspectors described the anticipated use of a digital camera during the inspection and provided a written list of the records needed for review. The EPA inspector explained that the Small Business Regulatory Enforcement Fairness Act’s classification of a “small business” is generally set by the Small Business Administration using the business’ SIC/NAICS code and annual receipts or number of employees. A copy of the EPA’s information sheet for small businesses can be found at

<https://www.epa.gov/sites/production/files/2017-06/documents/smallbusinessinfo.pdf>. The EPA inspector also discussed the company's ability, pursuant to 40 C.F.R. §2.203, to assert a business confidentiality claim for information provided to the EPA. BAE did not assert a business confidentiality claim.

BAE representatives provided an overview of the facility's history and current operations during the opening conference. The inspection participants also discussed health and safety protocols and required personal protective equipment before BAE representatives Curtis L. Jones and Carlos Bellefant (BAE representatives) escorted the inspectors on a tour of the process operations.

11) **Observations**

Building D - Disassembly

Gun Mount Disassembly

The gun mount and gun barrel are disassembled in this area so that it can be refurbished. BAE manages two SAAs in this area: one for managing waste solvent and another for managing waste contaminated rags.

The inspectors observed one 55-gallon container accumulating waste solvent in the first SAA and one 30-gallon container accumulating waste contaminated rags in the second SAA. The containers were closed, in good condition, labeled with the words "hazardous waste", and labeled with a hazard indicator.

The inspectors observed one 10-gallon container accumulating waste aerosol cans in this area. The container was closed, in good condition, and labeled with the words "universal waste". The inspectors also observed four 55-gallon containers accumulating nonhazardous waste that were closed and labeled.

Building A – Gun Assembly and Missile Tube Fabrication Area

The missile tube is fabricated on the northside of the building. The gun mount shield is fabricated, and gun mounts are assembled on the southside of the building.

BA018 SAAs

BAE manages five SAAs in BA018. The inspectors observed one 55-gallon container accumulating waste paint in the first SAA, one 55-gallon container accumulating waste solvent in the second SAA, one 10-gallon container accumulating waste aerosol cans in the third SAA, and one 5-gallon container accumulating waste MEK rags in the fourth SAA (Photograph 2). The containers were closed, in good condition, labeled with the words "hazardous waste", and labeled with a hazard indicator. The inspectors also observed one 10-gallon container accumulating waste "bonderite" and waste "alodine" pens in the fifth BA018 SAA. The container was closed, in good condition, labeled with the words "hazardous waste", and labeled with a DOT Class 9 (miscellaneous hazardous materials) pictogram. The 10-gallon container was not marked or labeled with an indication of the hazards. BAE representatives marked the container's hazardous waste label with the word "toxicity", indicating the hazard of the waste accumulating in the container, prior to inspectors leaving this area (Photograph 1). The

inspectors also observed one empty 55-gallon container.

Pursuant to 401 KAR 39:080 Section 1 [40 C.F.R. § 262.15(a)(5)(ii)], which is a condition of the SAA Permit Exemption, a generator must mark or label its containers with an indication of the hazards of the contents (examples include, but are not limited to, the applicable hazardous waste characteristic(s) (i.e., ignitable, corrosive, reactive, toxic); hazard communication consistent with the Department of Transportation requirements at 49 CFR part 172 subpart E (labeling) or subpart F (placarding); a hazard statement or pictogram consistent with the Occupational Safety and Health Administration Hazard Communication Standard at 29 CFR 1910.1200; or a chemical hazard label consistent with the National Fire Protection Association code 704).

The inspectors also observed two 55-gallon containers of used oil and absorbents. The containers were closed, in good condition, and labeled.

Building B Southside – Gun Barrel Machining Area

BB01 SAA

The inspectors observed one 55-gallon container accumulating waste solvent and four 55-gallon containers accumulating used oil, used oil absorbent, or nonhazardous waste in the BB01 SAA. The container of waste solvent was closed, in good condition, labeled with the words “hazardous waste”, and labeled with a hazard indicator. The containers of used oil and nonhazardous waste were closed, in good condition, and labeled.

Building B Northside – Secured Area/Paint Booth

Paint Booth SAA

The enclosed paint booth in Building B is in a secured processing area that requires a security clearance to access. Waste paint is accumulated in a 55-gallon container in a paint booth SAA. BAE representatives arranged to have the container transferred outside the building’s secured area for inspection. The inspectors observed one 55-gallon container accumulating waste paint. The container was closed, in good condition, labeled with the words “hazardous waste”, and labeled with a hazard indicator.

Building C Southside – Welding Area

The gun mount shield and slides are fabricated and welded in the area.

Weld Shop SAA

The inspectors observed one 10-gallon container accumulating waste aerosol cans in the weld shop SAA. The container was closed, in good condition, and labeled with the words “universal waste”.

Building C Northside – Paint Booths

Nathan Miller is a safety specialist in this area. Painting operations are conducted on the gun mount and its parts within a large room consisting of three paint booths. The open-faced paint booths are operated to conduct small and large painting operations. The same paints and solvents are used in the painting operations in all the paint booths.

The inspectors observed a one cubic yard container adjacent to the paint booth room, accumulating off specification paint. The container was closed, in good condition, labeled with the words “hazardous waste”, labeled with a hazard indicator, and marked with the date October 19, 2022.

Large Paint Booth SAA

The inspectors observed one 30-gallon container accumulating waste solvent rags (MEK) in the large paint booth SAA. The container was closed, in good condition, labeled with the words “hazardous waste”, and labeled with a hazard indicator.

Small Paint Booth - BS03 SAAs

BAE manages three SAAs in the Small Paint Booth. The inspectors observed one 55-gallon container accumulating waste paint in the first SAA and one 55-gallon container accumulating punctured aerosol cans in the second SAA at the small paint booth BS03. The containers were closed, in good condition, labeled with the words “hazardous waste”, and labeled with a hazard indicator.

On the opposite side of the small paint booth, the inspectors observed one 55-gallon container accumulating non-empty paint containers in a third SAA. The container was closed, in good condition, labeled with the words “hazardous waste”, and labeled with a hazard indicator. The inspectors also observed two 55-gallon containers accumulating empty paint containers. The containers were closed, in good condition, and labeled with the words “nonhazardous waste”.

BC12 SAA

The inspectors observed one 55-gallon container accumulating waste mineral spirits in the BC12 SAA. The container was closed, in good condition, labeled with the words “hazardous waste”, and labeled with a hazard indicator.

Building 66 – Universal Waste Storage

The inspectors observed one four-foot container and one eight-foot container for accumulating waste lamps. The eight-foot container was empty. The containers were closed, in good condition, labeled with the words “universal waste”, and marked with the date October 13, 2022. The inspectors observed one 55-gallon container accumulating small lamps that was closed, in good condition, labeled with the words “universal waste”, and marked with the date August 11, 2021 (Photograph 3). The inspectors asked the BAE representatives to ship the container to a destination facility.

Pursuant to 401 KAR 39:080 Section 3(1) [40 C.F.R. § 273.15(a)], a SQHUW may accumulate universal waste for no longer than one year from the date the universal waste is generated, or received from another handler, unless the requirements of paragraph (b) of this section are met.

Building 51 – Blast Operations

The facility blasts metal parts using aluminum oxide media in an enclosed blast machine. The inspectors observed one 55-gallon container accumulating spent aluminum oxide media in a SAA. The container was closed, in good condition, labeled with the words “hazardous waste”, and labeled with a DOT Class 9 (miscellaneous hazardous materials) pictogram. The 55-gallon

container was not marked or labeled with an indication of the hazards. BAE representatives marked the container's hazardous waste label with the word "toxicity", indicating the hazard of the waste accumulating in the container (Photographs 4 and 5).

Pursuant to 401 KAR 39:080 Section 1 [40 C.F.R. § 262.15(a)(5)(ii)], 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.

Building 51 - BA04 SAA

Located inside Building 51, inspectors observed one 30-gallon container accumulating waste MEK rags and one 10-gallon container accumulating waste aerosol cans in the BA04 SAA. The container of waste MEK rags was closed, in good condition, labeled with the words "hazardous waste", and labeled with a hazard indicator. The container of waste aerosol cans was closed, in good condition, and labeled with the words "universal waste".

Building 51 - Blast Media Silo

Located outside Building 51, inspectors observed one 55-gallon container connected with a rigid chute to a small silo. The 55-gallon container was accumulating waste blast media from the silo. The container of waste blast media was closed, in good condition, and labeled with the words "nonhazardous waste".

Building 118 – WWTP (IWTF01)

BAE operates a wastewater treatment plant (WWTP) for the treatment of rinse waters from its plating operations. Sandra Tucker is the WWTP operator. Waste solids are generated from the wastewater treatment operation. The inspectors observed a one cubic yard container accumulating waste filter cake. The container was closed, in good condition, labeled with the words "hazardous waste" (F006/F019), and marked with the date August 4, 2022. The inspectors did not observe the container marked or labeled with a hazard indicator. Sandra Tucker marked the container with the word "toxicity" (Photographs 6 and 7).

Pursuant to 401 KAR 39:080 Section 1 [40 C.F.R. § 262.15(a)(5)(ii)], 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.

Building 117 – Plating

Metal parts are plated in this building.

Cyanide Plating Line – PL03 SAA

The inspectors observed one 55-gallon container accumulating cyanide related waste in the PL03 SAA. The container was closed, in good condition, labeled with the words "hazardous waste", and labeled with a hazard indicator.

Chromium Plating Line – PL04 SAA

The inspectors observed one 55-gallon container accumulating chromium related waste in the PL04 SAA. The container was closed, in good condition, labeled with the words "hazardous waste", and labeled with a DOT Class 9 (miscellaneous hazardous materials) pictogram. The 55-gallon container was not marked or labeled with an indication of the hazards. BAE

representatives marked the container's hazardous waste label with the word "toxicity" to indicate the hazard of the waste accumulating in the container (Photographs 8 and 9).

Pursuant to 401 KAR 39:080 Section 1 [40 C.F.R. § 262.15(a)(5)(ii)], 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.

Chromium Plating Line – PL07 SAA

Located on the other side of the plating line, the inspectors observed one 30-gallon container accumulating waste contaminated rags in the PL07 SAA. The container was closed, in good condition, labeled with the words "hazardous waste", and labeled with a hazard indicator.

Building 87A – Central Accumulation Area (CAA)

Containers accumulate hazardous waste in this area for 90-days or less, prior to offsite shipment to a destination facility. The inspectors observed one 10-gallon container accumulating lead abatement waste and one 55-gallon container accumulating waste blast dust on a wooden pallet. The containers were closed, in good condition, with aisle space, and labeled with the words "hazardous waste". The 10-gallon container was marked with the date September 27, 2022, and the 55-gallon container was marked with the date October 5, 2022. Each container was labeled with a DOT Class 9 (miscellaneous hazardous materials) pictogram (Photographs 10 and 11). The 10 gallon and the 55-gallon container were not marked or labeled with an indication of the hazards. BAE representatives labeled each container with the word "toxic" to indicate the hazard of the contents of the container. (Photograph 12).

Pursuant to 401 KAR 39:080, Section 1(1) [40 C.F.R. § 262.17(a)(5)(i)], which is a condition of the LQG Permit Exemption, a generator must mark or label its containers with the following: an indication of the hazards of the contents clearly visible for inspection on each container.

The inspectors observed 50 55-gallon containers accumulating used oil, used oil related waste, and nonhazardous waste. The containers were closed, in good condition and labeled.

Spill control material and emergency equipment is maintained in this area and communications are conducted by phone line or cell phone.

Waste Management

The facility generates hazardous waste consisting of waste solvent, waste paint, waste contaminated rags, waste nonempty RCRA paint cans, waste off specification paint, waste mineral spirits, waste blast media, waste blast dust, cyanide plating line waste and chromium plating line waste. BAE manages containers of hazardous waste in satellite accumulation areas and full containers of hazardous waste and nonhazardous waste are transferred to the central accumulation area. Wastewater generated from the plating line rinse tanks is treated in the WWTP and the waste solids are processed in a filter press generating hazardous waste filter cake. Waste lamps and aerosol cans are managed in containers in various areas of the facility and managed as universal waste in Building 66. Paint booth filters, used oil, used oil absorbent, and used oil related waste is generated and managed in the central accumulation area.

Employees in process operations that generate hazardous waste accumulate it in containers at the point of generation. Full containers are transferred to the central accumulation area for 90-day or less storage. The facility prepares the hazardous waste for packaging and on-site management, prior to shipping the hazardous waste using the manifest system to an offsite treatment, storage, or disposal facility (TSDF).

BAE used the following transporters in 2022

Clean Harbors Environmental Services, Inc, MAD039322250

Heritage Transport, LLC, IND058484114

BAE used the following TSDFs in 2022

Heritage Environmental Services, LLC, IND093219012

Safety Kleen Systems, Inc, KYD053348108

Safety Kleen Systems, Inc, ILD980613813

Spring Grove Resource Recovery, Inc., OHD000816629

Clean Harbors El Dorado, LLC, ARD069748192

Records Review

The hazardous waste manifests, land disposal restriction notifications, and nonhazardous waste manifests for the calendar year 2022 were reviewed. The EPA inspector reviewed 15 hazardous waste manifests from the EPA's E-Manifest Record System from February 8, 2022, to August 22, 2022.

Waste Determination/Profiles/Safety Data Sheets (SDS)

The inspectors reviewed waste determination records for the paint filters generated in the paint booths in Building B and Building C, waste blast media, and waste blast dust.

Quick Reference Guide

The inspectors observed the quick reference guide did not include the identification of any hazardous wastes where exposure would require unique or special treatment by medical or hospital staff.

Pursuant to 401 KAR 39:080 Section 1 [40 C.F.R. § 262.17(a)(6)], which incorporates 401 KAR 39:080 Section 1 [40 C.F.R. § 262.262(b)(3)], and is a condition of the LQG Permit Exemption, a generator's quick reference guide to the contingency plan must include the following elements: the identification of any hazardous wastes where exposure would require unique or special treatment by medical or hospital staff.

The inspectors reviewed weekly container inspection records from January 2022 to October 2022. The inspectors reviewed the contingency plan, arrangements with the local authorities, personnel training, job titles, position descriptions, and annual report.

12) Closing Conference

The inspectors conducted a closing conference with Curtis L. Jones, Carlos Bellefant, and James Dwain Kincaid from BAE and Denise Dzurenka and Scott Gerstner, from KDEP. Sara Patterson, representing BAE, attended by conference call. During this meeting, the inspectors stated their

preliminary observations of the inspection.

13) **Sampling Overview**

Sampling was not conducted.

14) **List of Appendices**

Appendix 1 – Photograph Log:
Photos taken on: October 19, 2022
Photos taken by: William Kappler
Samsung Camera (Model WB250F)
EPA Property Tag# S75917

15) **Signed**

WILLIAM KAPPLER Digitally signed by WILLIAM KAPPLER
Date: 2022.11.30 12:32:20 -05'00'

William Kappler
Physical Scientist

Date

Concurrence

ARACELI CHAVEZ Digitally signed by ARACELI CHAVEZ
Date: 2022.11.30 12:57:25 -05'00'

Araceli B. Chavez
Chief
RCRA Enforcement Section

Date

BAE Systems Land and Armaments, LP
RCRA CEI Photographs
William Kappler, US EPA



Building A. BA018 SAA. Observed one 10-gallon container not marked or labeled with a hazard indicator. Observed BAE representatives marked the container with the word toxicity. Photograph 1 taken at 11:04 a.m.



Building A. BA018 SAA. Observed three 55-gallon containers labeled hazardous waste. One container was empty. Photograph 2 taken at 11:04 a.m.



Building 66 UW Storage. Observed one 55-gallon container accumulating waste lamps dated August 11, 2021. Photograph 3 taken at 11:54 a.m.



Building 51 Blasting Process. Observed one 55-gallon container labeled with a #9 hazard indicator. Photograph 4 taken at 12:03 p.m.

BAE Systems Land and Armaments, LP
RCRA CEI Photographs
William Kappler, US EPA



Building 51 Blasting Process. Observed BAE representatives mark the container with the word toxicity. Photograph 5 taken at 12:04 p.m.



Building 118 WWTP. Observed a one cubic yard container of F006, F019 filter cake not marked or labeled with a hazard indicator. Photograph 6 taken at 12:15 p.m.



Building 118 WWTP. Observed BAE representatives mark the one cubic yard container of F006, F019 filter cake with the word toxicity. Photograph 7 taken at 12:20 p.m.



Building 117 Chromium Platin Line. Observed one 55-gallon container labeled with a #9 hazard indicator. Photograph 8 taken at 12:28 p.m.

BAE Systems Land and Armaments, LP
RCRA CEI Photographs
William Kappler, US EPA



Building 117 Chromium Plating Line. Observed BAE representatives mark the container with the word toxicity. Photograph 9 taken at 12:29 p.m.



Building 87A CAA. Observed one 10-gallon container labeled with a #9 hazard indicator. Photograph 10 taken at 12:37 p.m.



Building 87A CAA. Observed one 55-gallon container labeled with a #9 hazard indicator. Photograph 11 taken at 12:37 p.m.



Building 87A CAA. Observed BAE representatives label the containers with a toxic hazard indicator. Photograph 12 taken at 12:39 p.m.