

REPORT OF RCRA COMPLIANCE EVALUATION INSPECTION

At

IOWA ARMY AMMUNITION PLANT

17571 DMC Hwy 79
Middletown, IA 52638
(319) 753-7103

EPA ID Number: IA7213820445

On

March 15 and 16, 2023

By

TOEROEK ASSOCIATES, INC.

For

U.S. ENVIRONMENTAL PROTECTION AGENCY

Region 7

Enforcement and Compliance Assurance Division

INTRODUCTION

At the request of the Enforcement and Compliance Assurance Division/Chemical Branch/RCRA Section (ECAD/CB/RCRA) of the U.S. Environmental Protection Agency (EPA) Region 7, Toeroek Associates, Inc. and its subcontractor CLAENE Group (Toeroek team) conducted a hazardous waste compliance evaluation inspection (CEI) at the Iowa Army Ammunition Plant (IAAAP) at 17571 DMC Hwy 79, Middletown, Iowa. The CEI was conducted under the authority of Section 3007 of the Resource Conservation and Recovery Act (RCRA), as amended. The CEI covered requirements of the facility's hazardous waste management permit, as well as hazardous waste generator, used oil, and universal waste requirements. This report and its attachments present the findings of the CEI.

PARTICIPANTS

IAAAP:

Jennifer L. Busard, U.S. Army Operations Environmental Restoration Manager
(exit briefing only)

American Ordnance (AO):

William Hilger, Environmental, Health and Safety (EHS) Director
Kellie Orth, Environmental Scientist
Zach Hill, Hazardous Waste Disposal Supervisor

Toeroek Team:

William F. Starks, Environmental Consultant

INSPECTION PROCEDURES

Prior to the CEI at IAAAP on March 15, 2023, I conducted a drive-by inspection. I did not observe any areas of concern during the drive-by. However, the drive-by inspection was abbreviated due to security concerns regarding unannounced reconnaissance of an active U.S. Army facility.

Upon my arrival, I entered the Administration Building and approached the reception desk. I introduced myself to the receptionist, explained the purpose of the CEI, and asked to speak with Ms. Amanda Smith. The receptionist stated that Ms. Smith was not at the facility, and telephoned Mr. Hilger to advise him of my arrival. While I waited, I completed an authorization form for a background screening (currently required of all IAAAP visitors). After the screening, the receptionist issued a visitor's badge to me.

Mr. Hilger arrived, and after a brief introduction, asked me to follow him to his office to conduct an entry briefing. Mr. Hilger's office is located in another building at IAAAP. Upon arriving at Mr. Hilger's office, he introduced me to Ms. Orth. I proceeded to conduct an entry briefing with Mr. Hilger and Ms. Orth.

During the entry briefing, I presented my business card and EPA credentials to Mr. Hilger and Ms. Orth. I explained the scope and procedures for the CEI. I explained the facility's right to make confidentiality claims and provided a Notice Regarding Proprietary/ Confidential Business Information. I stated that at the conclusion of the CEI, they would be presented with a Confidentiality Notice (Notice) with which they could make or not make a claim of confidentiality for the facility. I also provided Mr. Hilger and Ms. Orth a copy of U.S. Federal Codes 1001 and 1002, concerning communication of false statements and documents to federal inspectors, and RCRA Section 3007, explaining EPA's inspection authority, both of which they read.

A copy of each of the following documents was left with the facility during the inspection:

- RCRA Facility Access Information Sheet
- Mr. Trevor Urban's business card
- RCRA Section 3007
- U.S. Federal Codes 1001 and 1002
- Instructions for Responding to a Notice of Preliminary Findings
- Notice Regarding Proprietary/Confidential Business Information
- Chemical Facility Anti-Terrorism Standards
- E-Manifest Fact Sheet: Generators
- Managing your Hazardous Waste: A Guide for Small Businesses
- Part 279 Requirements: Used Oil Management Standards
- EPA Region 7 Emergency Response Program
- Recycling Electronics: A Guide for Businesses
- Lead-Based Paint Activities: Handling and Disposal
- Battery Recycling/Disposal
- Management of Fluorescent Lamps for Businesses
- Incompatible Chemicals
- TCLP – Toxicity Characteristic Leaching Procedure
- Iowa Environmental Guide for Businesses

I reviewed the Hazardous Waste Site Info Verification Report (Verification Report) with Mr. Hilger (Attachment 1). Based on this review and observations during the CEI, I updated the Site Contact information to include the name and contact information for Ms. Amanda Smith. I made no other updates or edits to the Verification Report.

During the entry briefing, Mr. Hilger explained that photographs are not allowed in areas with a flash hazard, which include production lines and explosive waste storage areas. After discussion, it was decided that if photographs of containers were required in an area where photography is prohibited, the container(s) would be moved outside of the area to photograph.

Prior to the visual inspection, Mr. Hill joined the CEI. I provided Mr. Hill a copy of U.S. Federal Codes 1001 and 1002, both of which he read.

I conducted the visual inspection and the majority of the records review on March 15, 2023, accompanied by Messrs. Hilger and Hill, and Ms. Orth. The records review included a review of treatment, storage, and disposal (TSD) permit requirements, hazardous waste manifests with land disposal restriction (LDR) notifications, nonhazardous waste invoices and bills of lading, waste tracking and inventory records, inspection records, and training documentation. I returned to the facility on March 16, 2023, to complete the records review and conduct an exit briefing. I prepared and completed a site-specific inspection checklist to document my observations.

At the conclusion of the CEI on March 16, 2023, I conducted an exit briefing with Messrs. Hilger and Hill, and Ms. Orth and Busard. During the exit briefing, I provided a Receipt for Documents and Samples, which Mr. Hilger signed, acknowledging receipt

(Attachment 2). I provided Mr. Hilger the Notice, which he signed indicating no confidential business information had been provided (Attachment 3). I also provided Mr. Hilger a Notice of Preliminary Findings (NOPF), which he signed to acknowledge receipt (Attachment 4).

A map of IAAAP obtained during the previous CEI is in Attachment 5. An aerial photograph of the facility was downloaded after the CEI and is in Attachment 6. The 16 photographs taken during the CEI are included in Attachment 7.

FINDINGS AND OBSERVATIONS

1. Facility Description and General Information

IAAAP is a government-owned, contractor-operated (GOCO) facility dedicated to manufacturing of large-caliber munitions for the U.S. Department of Defense. IAAAP has been in operation at its current location since 1941, and consists of several buildings (approximately 700 buildings with a total footprint of approximately 1,000,000 square feet), production lines, and storage yards situated over approximately 19,000 acres of land. The contractor currently operating the facility is AO, with oversight and administration from U.S. Army personnel. Currently, approximately 775 AO personnel and approximately 24 U.S. Army personnel work at the facility. Personnel work various shifts and times, but the majority of personnel work one of shift, 6:00 a.m. to 4:30 p.m., 4 days per week (Monday through Thursday). IAAAP's primary North American Industrial Classification System (NAICS) codes are 332993 (Ammunition [Except Small Arms] Manufacturing) and 92811 (National Security).

The primary function of the facility is to load, assemble, and pack (L/A/P) ammunition items. IAAAP produces a large variety of explosive-loaded components and end items such as small boosters, mines, cratering charges, artillery rounds, missile warheads, and cluster bombs. Production includes automated and manual assembly of pressed and melt-poured ordnance using explosives such as Research Department Explosive (RDX), High Melting Explosive (HMX), and Insensitive Munitions Explosive (IMX). Production processes also include ink printing, painting, and packaging. IAAAP also performs research and development (R&D), testing, and munitions warehousing.

The majority of hazardous waste generated at IAAAP is non-explosive waste, which is managed in satellite accumulation areas (SAA) and less-than-90-day hazardous waste container accumulation areas (HWCAA). The facility's primary HWCAA is at Building BG-199-3.

The facility also has a RCRA hazardous waste permit for storage of hazardous explosive waste. IAAAP's current RCRA hazardous waste management permit was issued on September 28, 2018, and is effective for 10 years. RCRA Permit Module IV.A authorizes a single container storage area (CSA) in Building C-13 with a storage capacity of 35,000 pounds of trinitrotoluene (TNT) or its equivalent. Former hazardous waste storage igloo BG-12 was not included in the current RCRA permit. BG-12 was taken out of service on December 10, 2013, and the BG-12 closure certification is dated January 28, 2022.

RCRA Permit Modules V.A and VI.A authorize operation of an open burn/open detonation (OB/OD) yard for infrequent emergency disposal of hazardous explosive waste deemed too unstable for off-site transport (Attachment 7, Photographs 10 and 11, and Attachment 8). Waste propellants were last burned in the OB pans in March 2020. Open detonation has not been performed since March 2013.

Hazardous explosive wastes include excess/rejected munitions components and sump sludge. These wastes are considered hazardous based on product and process knowledge and are stored in the RCRA-permitted CSA. Hazardous explosive wastes are shipped off site for destruction unless emergency disposal at the OB/OD yard is warranted.

Other hazardous production wastes include waste cartridge cases, spent carbon (explosive-contaminated wastewater filtration medium), waste mixed solvents, waste solvent wipes, waste paint filters, and waste paint-related material (WPRM). These wastes are considered hazardous based on product and process knowledge. The wastes are accumulated in SAA containers or directly in hazardous waste accumulation containers (HWAC) and are transferred to the main HWCAA in Building BG-199-3 prior to offsite shipment. Waste solvent wipes are compacted at Building BG-199-4 prior to accumulation in Building BG-199-3.

Facility operations and maintenance activities generate waste aerosol cans, polychlorinated biphenyls (PCB)-containing waste, used lamps, used batteries, used oil, used oil filters, scrap metal, explosive-contaminated waste, and general (inert) trash. Waste aerosol cans are considered hazardous based on product and process knowledge. The waste is collected in SAA containers and transported to the Building BG-199-3 HWCAA, where the containers are drained and shredded. Shredded aerosol cans are managed as scrap metal, which is considered to be exempt from hazardous waste regulation per Title 40 *Code of Federal Regulations* (40 CFR) 261.6(a)(3)(ii) when recycled. The residues drained from the aerosol cans are considered hazardous waste based on product and process knowledge.

PCB-containing wastes (for example, waste capacitors and electronic ballasts) are considered nonhazardous Toxic Substances Control Act (TSCA)-regulated waste based on product knowledge and are shipped off site for recycling. Used lamps and used batteries are managed as universal waste according to provisions of 40 CFR Part 273 and are shipped off site for recycling. Used oil and used oil filters from vehicle and equipment maintenance are managed as used oil according to provisions of 40 CFR Part 279 and are shipped off site for recycling.

Explosive-contaminated wastes are solids such as wipes and debris that is contaminated with trace explosives. This waste is considered nonhazardous and is collected for landfill disposal under a special waste authorization (SWA). General (inert) trash consists of all other office- and packaging-type wastes such as outer packaging, food wastes, and other wastes not generated from production lines. General (inert) trash is considered nonhazardous waste based on product knowledge, and is collected for landfill disposal.

IAAAP received a Class I RCRA Permit Modification on June 1, 2021 to delay the groundwater sampling of Trench 5 (Attachment 7, Photographs 12 through 14, and Attachment 9) until November 2021. Groundwater sampling resumed in May 2022, per Permit Condition VIII.H.4.

The facility also episodically inventories and collects unusable or expired chemicals from across the facility for disposal as a lab pack. This waste was not observed during the inspection, and is not discussed further in this report. The above description of facility operations and wastes should not be considered a comprehensive description of all operations and waste streams.

On October 13 and 14, 2021, the Toeroek Team conducted a CEI for EPA at IAAAP. Following the CEI on October 13 and 14, 2021, the inspector made the following preliminary findings:

- Failure to label four HWACs with the words “hazardous waste,” as required by 40 CFR 262.17(a)(5)(i)(A)
- Failure to label four HWACs with an indication of the nature of the hazard, as required by 40 CFR 262.17(a)(5)(i)(B)
- Failure to provide adequate spill control/cleanup materials at a HWCAA, as required by 40 CFR 262.17(a)(6) referencing 262.52(c)
- Failure to label a used oil storage container with the words “used oil,” as required by 40 CFR 279.22(c)(1)
- Failure to mark four HWACs with accumulation start dates, as required by 40 CFR 262.17(a)(5)(i)(C)

The preliminary findings listed above were not repeated during this CEI.

2. RCRA Status

IAAAP is identified as a permitted TSD facility and a large quantity generator (LQG) of hazardous waste (generating more than 1,000 kilograms [kg] of hazardous waste per calendar month) on the Verification Report provided by EPA (Attachment 1). During the CEI, I confirmed the facility is operating as a permitted TSD and LQG of hazardous waste.

I reviewed IAAAP’s Hazardous Waste Biennial Report for 2021 provided by the EPA prior to the inspection (Attachment 10). Based on this report, IAAAP generated 401,951 pounds (182,322 kg) of hazardous waste in 2021. During the CEI, the facility provided a Waste Stream Report for January 1, 2022, through March 15, 2023. However, after the CEI, I noted that the Waste Stream Report provided by the facility only showed a total of 1,594 pounds of hazardous waste generated during this timeframe. I contacted Mr. Hilger and asked if the Waste Stream Report was correct. Mr. Hilger stated that the report provided during the CEI appeared to be in error, and e-mailed a replacement Waste Stream Report for January 1, 2022, through March 15, 2023. Mr. Hilger emailed a replacement report for that time frame (Attachment 11). He also provided a report for that same timeframe for explosive waste (Attachment 12), and Cyclesorb carbon vessels (Attachment 13).

Based on the Waste Stream Reports, IAAAP generated 108,036 pounds of hazardous waste (Attachment 11), 835,587 pounds of hazardous explosive waste (Attachment 12), and 140,800 pounds of Cyclesorb carbon vessels (Attachment 13) from January 1, 2022, through March 15,

2023. These generation rates easily exceed the LQG threshold of 2,200 pounds (1,000 kg) of hazardous waste per month. I also reviewed manifests and LDR notifications for hazardous waste shipments since the date of the last inspection and notes similar waste generation rates. Therefore, I inspected the facility as a LQG of hazardous waste. I confirmed that IAAAP is operating as a permitted TSD facility for explosive waste storage. I also determined the facility is operating as a small quantity handler (SQH) of universal waste (accumulating less than 5,000 kg of universal waste at any time) and a used oil generator.

3. Waste Streams

This section of the CEI report describes waste streams generated by the facility, including the facility's waste determination and waste codes, generation process and rate, management at the facility, and ultimate disposition. The following discussion of waste streams is based on conversations with Mr. Hilger, Mr. Hill, and Ms. Orth, as well as my observations during the visual inspection and records review.

During the CEI, I asked Mr. Hilger to print an inventory from the facility's operating record of all wastes in storage in the permitted CSA (Building C-13). The inventory report for Building C-13 is in Attachment 14.

Waste cartridge cases consist of nitrocellulose cartridge cases that are rejected from the production line due to defects or damage from quality control (QC) testing. These rejected components are containerized and set aside until inspection to determine if they can ultimately be used. If determined to be waste, the cartridge cases are containerized in a HWAC. The facility considers waste cartridge cases to be hazardous waste (D001, D003) based on product and process knowledge. Based on the Explosive Waste Report (Attachment 12), the facility generates approximately 6,160 pounds (2,794 kg) of waste cartridge cases per year. The waste is transported to Veolia ES Technical Solutions in Sauget, Illinois, for incineration. The most recent shipment of waste cartridge cases was January 31, 2023.

During the inspection, I observed 36 HWACs of waste cartridge cases in Building C-13. The HWACs were on pallets in five separate rows. However, the spacing between the pallets (between 0 and 5 inches apart) did not allow me access to verify labeling on each container. I determined the facility failed to maintain adequate aisle space to allow unobstructed movement of personnel or emergency response equipment, as required by Permit Module III.H.5 Referencing 40 CFR 264.35 (**NOPF No. 1**).

Prior to the conclusion of the CEI, I returned to Building C-13 and noted that facility personnel rearranged the waste cartridge case pallets to allow access to verify accumulation start dates and required labeling (approximately 36 inches of aisle space between pallets). The HWACs were structurally sound, closed, dated, and labeled with the words "hazardous waste" and an indication of the nature of the hazard. The oldest accumulation start date was December 12, 2022. The RCRA permit allows storage of hazardous waste for up to one year in Building C-13.

Spent carbon is generated during change-out of the explosive wastewater treatment filter media. Some spent carbon is accumulated in 55-gallon HWACs upon generation and transferred to the Building BG-199-3 HWCAA. However, IAAAP uses Cyclesorb units at Line 3A. The Cyclesorb

units each hold approximately 2,000 pounds of carbon. The facility considers spent carbon to be hazardous waste (K045) based on product and process knowledge. Based on the 2021 Hazardous Waste Biennial Report (Attachment 10), the facility generates 231,872 pounds (105,175 kg) of spent carbon per year. Cyclesorb units are picked up by Calgon Carbon Corporation in Catlettsburg, Kentucky, for regeneration. Non-Cyclesorb spent carbon is shipped to Evoqua Water Technologies in Darlington, Pennsylvania, for regeneration. A manifest and land disposal restriction (LDR) notification for the most recent shipment (March 13, 2023) of spent carbon is in Attachment 15.

Ms. Orth provided a copy of the Adsorbate Profile Document for spent carbon (Attachment 16). I noted the listed waste code K045 was identified in the Waste Characterization Information section of the profile document. Spent carbon appears to meet the definition of K045 (spent carbon from the treatment of wastewater containing explosives). It appears the hazardous waste determination is adequate. No spent carbon filter media were in accumulation or storage at the time of the inspection.

Sump sludge is generated from clean-out of sumps that collect water used during loading and washout of explosives. The facility considers sump sludge to be hazardous waste (D003, K044) based on product and process knowledge. Based on the 2021 Hazardous Waste Biennial Report (Attachment 10), the facility generates 35,520 pounds (16,112 kg) of sump sludge per year. Sump sludge is accumulated in 55-gallon SAA containers or HWACs and transferred to Building C-13 for storage. The waste is shipped to EBV Explosives Environmental Company (EBV) in Carthage, Missouri, for incineration. A manifest and LDR notification for the most recent shipment (January 31, 2023) of sump sludge is in Attachment 17.

During the CEI, Ms. Orth provided a copy of the Waste Characterization Profile for sump sludge (Attachment 18). I noted the characteristic waste code D003 and listed waste code K044 identified in the Manifest/Shipping Information section of the profile. Sump sludge appears to meet the definition of K044 (wastewater treatment sludges from the manufacturing and processing of explosives). It appears the hazardous waste determination is adequate.

During the visual inspection, I observed 18 55-gallon hazardous waste storage containers of sump sludge in Building C-13. All hazardous waste storage containers were structurally sound, closed, dated, and labeled with the words “hazardous waste” and an indication of the nature of the hazard. The oldest accumulation start date was December 8, 2022. The RCRA permit allows storage of hazardous waste for up to one year in Building C-13. I noted no deficiencies with management of sump sludge.

Waste mixed solvents include various non-chlorinated solvents (for example, cleaning solvents) generated from production areas and spent solvents from the Chem Lab in Building 600-86-3. The facility considers waste mixed solvents to be hazardous waste (D001, D035, F003, F005) based on product and process knowledge. Based on the 2021 Hazardous Waste Biennial Report (Attachment 10), the facility generates 6,704 pounds (3,041 kg) of waste mixed solvents per year. Waste mixed solvents are accumulated in various sized SAA containers at or near points of generation. Smaller SAA containers (that is, 5 gallons and smaller) are decanted into to a HWAC located in the Chem Lab HWCAA. Full 30-gallon and 55-gallon SAA containers are dated and

transferred to the Building BG-199-3 HWCAA. Waste mixed solvents are shipped to Tradebe Treatment & Recycling of Wisconsin (Tradebe) in Milwaukee, Wisconsin, for fuel blending

I observed two 30-gallon HWACs of waste mixed solvents in the Building BG-199-3 HWCAA, Solvent Room. Both waste mixed solvents HWACs were structurally sound, closed, dated, and labeled with the words “hazardous waste” and an indication of the nature of the hazard. The earliest accumulation start date of waste mixed solvents was February 6, 2023. I noted no deficiencies with management of waste mixed solvents during the CEI.

Waste solvent wipes are generated at numerous locations throughout the facility, including production lines, Chem Lab, Maintenance, and Mechanical areas. The waste consists of disposable wipes contaminated with a variety of non-chlorinated solvents from wiping down shells. Other solvent-contaminated solids such as paper or gloves are also included in this waste stream. Waste solvent wipes are accumulated in variously sized SAA containers near points of generation. Contents of the SAA containers are transferred to HWCAAs in Buildings 1-85-2 or 2-03 if the points of generation are near these HWCAAs. Otherwise, the waste solvent wipes are picked up directly by AO Waste Disposal personnel and transferred to Building BG-199-4 for compacting. The facility considers waste solvent wipes to be hazardous waste (D001, D006, D007, D008, D030, F003, F005) based on product and process knowledge. Based on the 2021 Hazardous Waste Biennial Report (Attachment 10), the facility generates 2,533 pounds (1,149 kg) of waste solvent wipes per year. The waste is shipped to Tradebe in Milwaukee, Wisconsin, for bulking and offsite transfer. A manifest and LDR notification for the most recent shipment (February 2, 2023) of waste solvent wipes is in Attachment 19.

Ms. Orth provided a copy of the Waste Determination Form for waste solvent wipes (Attachment 20). Based on this documentation, it appears the hazardous waste determination for waste solvent wipes is adequate.

During the inspection, I observed three SAA containers for waste solvent wipes in production areas. Each SAA container observed was near the point of generation, under control of the operator, structurally sound, closed, and labeled with the words “hazardous waste” and an indication of the nature of the hazard.

I observed the “in-drum” compactor for waste solvent wipes in Building BG-199-4 (Attachment 7, Photograph 1). The HWAC within the compactor was structurally sound and closed by the compactor’s pressure plate. Labels with the words “hazardous waste,” the accumulation start date (March 14, 2023), and an indication of the nature of the hazard were in a pouch hanging on the compactor to be applied once the container is removed and closed (Attachment 7, Photograph 2). The HWAC held approximately 25 gallons of waste solvent wipes.

I observed one HWAC of waste solvent wipes in the Building BG-199-3, Hazardous Waste Room. The HWAC of waste solvent wipes was structurally sound, closed, dated (February 8, 2023), and labeled with the words “hazardous waste” and an indication of the nature of the hazard. I noted no deficiencies with management of waste solvent wipes during the CEI.

WPRM primarily consists of waste basecoat and waste topcoat (as well as paint gun cleaning solvents) generated at the Building 02-04 paint booth lines during coating of 120-millimeter (mm) tank rounds. The facility considers WPRM to be hazardous waste (D001) based on product knowledge and process knowledge. Hazardous waste codes F003 and F005 are added if the WPRM includes solvents used to clean paint guns. Based on the 2021 Hazardous Waste Biennial Report (Attachment 10), the facility generates 3,283 pounds (1,489 kg) of WPRM in 2021. WPRM is accumulated in 55-gallon SAA containers at the paint lines and is transferred to the Building BG-199-3 HWCAA or Building C-13 when the SAA containers are full. WPRM is shipped to Tradebe in Milwaukee, Wisconsin, for bulking prior to offsite transfer. A manifest and LDR notification for the most recent shipment (February 2, 2023) of WPRM is in Attachment 19.

Ms. Orth provided a copy of the SDSs for basecoat (Attachment 21) and topcoat (Attachment 22). The SDSs identify product flashpoints of 84°F and 78°F, respectively. As such, the hazardous waste determination for basecoat and topcoat without addition of spent solvent is adequate.

During the inspection, I observed the two paint booth lines at Building 02-04. Outside of the paint booth lines, I observed two “flammables” cabinets approximately 10 feet apart. Each cabinet held a 55-gallon SAA container (one held waste topcoat and one held waste basecoat). IAAAP considers the two cabinets as two separate SAAs. Mr. Hilger explained that the two cabinets always had been managed as separate SAAs, and that no concerns had been raised during prior EPA inspections. Based on this information, I inspected the two “flammables” cabinets as two distinct SAAs. However, I recommended that the facility contact EPA to confirm the area can be managed as separate SAAs.

Both WPRM SAA containers were near the point of generation, under control of the operator, structurally sound, closed, and labeled with the words “hazardous waste” and an indication of the nature of the hazard. No photographs of the SAA containers were taken, as they were on a production line and no issues were noted.

During the visual inspection, I observed six 55-gallon HWACs of WPRM in Building C-13. All hazardous waste storage containers were structurally sound, closed, dated, and labeled with the words “hazardous waste” and an indication of the nature of the hazard. The oldest accumulation start date was August 16, 2022. The RCRA permit allows storage of hazardous waste for up to one year in Building C-13. I noted no deficiencies with management of WPRM during the CEI.

Excess/rejected munitions and components consist of damaged or off-specification products that have been determined to be waste. The facility considers excess/rejected munitions and components to be hazardous waste (D003 and/or D006, D007, D008 as applicable) based on product knowledge and process knowledge. Based on the 2021 Hazardous Waste Biennial Report (Attachment 10), the facility generates 22,974 pounds (10,421 kg) of excess/rejected munitions and components per year. The waste is stored in permitted Building C-13 and is shipped to EBV in Carthage, Missouri, or Expal USA in Hooks, Texas, for incineration. A manifest and LDR notification for the most recent shipment (March 1, 2023) of

excess/rejected munitions and components is in Attachment 23. No excess/rejected munitions and components were in accumulation or storage at the time of the inspection.

Waste aerosol cans and residue are generated throughout the facility from use of various aerosol products (for example, paints, cleaners, lubricants, and solvents). The facility considers waste aerosol cans to be hazardous waste (D001) based on product knowledge and process knowledge. Waste aerosol cans are accumulated in 55-gallon SAA containers near points of generation. Contents of SAA containers are collected regularly by AO Waste Disposal personnel and transferred to the Building BG-199-3 HWCAA, Can Shredder Room. The waste aerosol cans are fed through an aerosol can shredder in the Can Shredder Room. Residue drained from the shredder is accumulated in an adjacent 55-gallon SAA container. Waste aerosol can residue is also considered to be D001 hazardous waste. It is shipped to Tradebe in Milwaukee, Wisconsin, for bulking and offsite transfer. Shredded aerosol cans are managed as scrap metal. Scrap metal is collected by Alter Metal & Recycling in Burlington, Iowa, for recycling. I did not determine generation rates for waste aerosol cans, waste aerosol can residue, or shredded aerosol cans during the CEI.

During the inspection, I observed a 55-gallon SAA container for waste aerosol cans in the Roundhouse (Building 400-138, where heavy equipment and locomotive services are performed) (Attachment 7, Photograph 15). The SAA container was near the point of generation, under control of the operator, structurally sound, closed, and labeled with the words “hazardous waste” an indication of the nature of the hazard, and held approximately 10 gallons of waste aerosol cans (Attachment 7, Photograph 16).

During the inspection, I observed the waste aerosol can shredder in the Building BG-199-3 HWCAA, Solvent Room (Attachment 7, Photograph 8). I observed the accumulation containers for shredded aerosol cans and noted no concerns (Attachment 7, Photograph 9). I also observed the 55-gallon SAA container for waste aerosol can residue adjacent to the shredder (Attachment 7, Photograph 7). The SAA container was at the point of generation, under control of the operator, structurally sound, closed, and labeled with the words “hazardous waste” and an indication of the nature of the hazard. I noted no deficiencies with management of waste aerosol cans and residue during the CEI.

PCB-containing wastes include capacitors, electronic ballasts, and debris contaminated with PCBs. The facility considers PCB-containing wastes to be nonhazardous TSCA-regulated wastes based on product knowledge and testing if product knowledge is insufficient. The generation rate for PCB-containing wastes varies significantly, however the facility shipped 1,321 pounds in 2021 and had no shipments in 2022. PCB-containing wastes are accumulated in the Building BG-199-3 HWCAA, Universal Waste/PCB Room. PCB-containing waste is shipped to Recycle Technologies Inc. in Minneapolis, Minnesota, or Milwaukee, Wisconsin, for recycling. Copies of the PCB-containing wastes Certificates of Recycling for 2021 and the Bills of Lading for 2022 are in Attachment 24

I observed a 55-gallon container holding two PCB-containing waste ballasts in the Building BG-199-3 Universal Waste/PCB Room. The 55-gallon container had an accumulation start date

of October 12, 2022. I noted no deficiencies with accumulation of PCB-containing wastes during the CEI.

Used lamps are generated during maintenance replacement of facility and equipment lighting. Used lamps include both hazardous and nonhazardous lamps. However, IAAAP manages all used lamps as universal wastes according to provisions of 40 CFR Part 273. Based on recycling and shipping records, I estimated the facility generates between 554 and 948 used lamps per year. Used lamps are accumulated in universal waste accumulation containers, and full containers are transported to the Building BG-199-3 HWCAA, Universal Waste/PCB Room, for accumulation. Used lamps are shipped Recycle Technologies Inc. in Minneapolis, Minnesota, or Milwaukee, Wisconsin, for recycling. Copies of the used lamps Certificates of Recycling for 2021 and the Bills of Lading for 2022 are in Attachment 24. I did not observe used lamps in accumulation during the visual inspection.

Used batteries are generated during facility and equipment maintenance. Used batteries include both hazardous (for example, nickel-cadmium, lead-acid) and nonhazardous (for example, alkaline) batteries. However, all used batteries are managed as universal wastes according to provisions of 40 CFR Part 273. Based on recycling and shipping records, I estimated the facility generates approximately 106 to 121 pounds of used batteries per year. Used batteries are accumulated in universal waste accumulation containers, and full containers are transferred to the Building BG-199-3 HWCAA Universal Waste/PCB Room. Used batteries are shipped to Recycle Technologies Inc. in Minneapolis, Minnesota, or Milwaukee, Wisconsin, for recycling. Copies of the used batteries Certificates of Recycling for 2021 and the Bills of Lading for 2022 are in Attachment 24. I did not observe used batteries in accumulation during the visual inspection.

Used oil is generated at several IAAAP buildings and shops during maintenance of process equipment (for example, pumps and compressors) and vehicles. The primary used oil generation areas are the Roundhouse (Building 400-138), and Building 300-148 (where fleet vehicle and equipment maintenance is performed). Used oil is managed according to provisions of 40 CFR Part 279 and is accumulated in used oil storage containers at points of generation. Full used oil storage containers are transported to the Building BG-199-3 HWCAA, Oil Room. I did not determine generation rate for used oil per. Used oil is collected by Turnkey Environmental in Kankakee, Illinois, for recycling. A manifest for a recent used oil shipment (December 15, 2022) is in Attachment 25.

During the inspection, I observed 22 55-gallon used oil storage containers in the Roundhouse, and Building BG-199-3. All used oil storage containers were structurally sound and labeled with the words “used oil.” Representative photographs of the used oil storage containers are in Attachment 7, Photographs 3 through 5. I noted no deficiencies with management of used oil during the CEI.

Used oil filters are generated during maintenance of process equipment (for example, compressors) and vehicles. The primary used oil filter generation areas are the Roundhouse and Building 300-148. The facility manages used oil filters as used oil according to provisions of 40 CFR Part 279. Used oil filters are hot-drained upon generation, then containerized for off-site

shipment. According to Mr. Hilger, the facility generates approximately 1,500 to 2,000 used oil filters per year. Used oil filters are collected by Iowa Gold in Central City, Iowa, for recycling. I requested a copy of a manifest for the last shipment of used oil filters, but did not receive the copy during the CEI. Mr. Hilger emailed a copy of the manifest, dated February 22, 2022, after the CEI (Attachment 26).

During the inspection, I observed one 55-gallon used oil storage container for used oil filters in the Roundhouse. The container held two used oil filters. I noted the domes of the used oil filters were punctured. The container for used oil filters was structurally sound and labeled with the words “used oil filters.”

Scrap metal includes the shredded waste aerosol cans described above, as well as all other scrap metal waste generated at the facility through maintenance or other activities. Scrap metal is accumulated in various containers throughout the facility, and is considered exempt from hazardous waste regulation per 40 CFR 261.6(a)(3)(ii) when recycled. Scrap metal is collected by Alter Metal & Recycling in Burlington, Iowa, for recycling. The scrap metal generation rate varies significantly, and I did not determine a generation rate during the CEI. I observed several scrap metal accumulation containers during the inspection and noted no deficiencies.

General (inert) trash consists of office-type refuse and non-production wastes (such as paper and packaging materials) not potentially contaminated with explosives. The facility considers general trash to be nonhazardous based on product knowledge. General trash is accumulated in several containers throughout the facility, and transferred to roll-off containers outside each line. According to Ms. Orth, the facility generates approximately five to nine tons of general trash per month. General trash is collected by LeVeine Sanitation and is transported to the Des Moines County Landfill in West Burlington, Iowa, for landfill disposal. I observed several general trash accumulation containers during the CEI and noted no deficiencies.

4. Permitted Hazardous Waste Storage Units

The Building C-13 was observed to be in good condition during the CEI, with all required signage and emergency response equipment. The unit is inspected weekly, plus every time the unit is accessed. I reviewed weekly inspection records back to the date of the last CEI (October 13 and 14, 2021), and noted no concerns or missed inspection weeks. Copies of the weekly inspection records from October 31, 2022 to February 28, 2023 are in Attachment 27.

Per the waste storage inventory in Attachment 11 and observations during the CEI, the volume of hazardous waste stored in Building C-13 is well below the limit specified in Module IV of the RCRA hazardous waste management permit. I noted no RCRA concerns with management of hazardous waste in Building C-13, other than **NOPF No. 1** discussed in Section 3 of this report for failure to maintain adequate aisle space.

5. Preparedness and Prevention, and Contingency Plan

IAAAP’s RCRA permit Module III.I requires the facility to maintain a RCRA Contingency Plan, per the requirements of 40 CFR 264 Subpart D. IAAAP maintains a Spill Prevention, Control and Countermeasure (SPCC) Plan, which also serves as the RCRA Contingency Plan, as allowed

under 40 CFR 264.52(b). The entire SPCC Plan, dated September 9, 2022, as well as its appendices and the referenced IAAAP Fire Prevention and Protection Program, were reviewed against the RCRA Contingency Plan content requirements of 40 CFR 264.52. I noted the SPCC Plan was certified by Professional Engineer (PE) Brian C. Bross (17084) on September 8, 2022. I obtained a copy of the Emergency Personnel and Telephone Numbers (Attachment 28). I noted that the list of Emergency Coordinators did not list the home addresses and phone numbers as required by Permit Module III.I.1 Referencing 40 CFR 264.52(d) (**NOPF No. 2**).

I explained this preliminary finding to Mr. Hilger. Mr. Hilger explained that IAAAP had submitted a Permit Modification to the EPA requesting the exclusion of home addresses and telephone numbers to personnel security. Mr. Hilger added that the Emergency Coordinator, R. R. Williamson retired in January 2023, and IAAAP was in the process of updating the list of Emergency Coordinators. I advised Mr. Hilger that during the process of updating the Emergency Coordinator list, the facility should add the home addresses and telephone numbers as required in the Permit. I noted no other deficiencies during my review of facility's SPCC Plan against the RCRA Contingency Plan content requirements.

6. Less-Than-90-Day Hazardous Waste Container Accumulation Areas

During my inspection of HWCAAs at Buildings 1-85-2 East Dock, 2-03, 02-04 South, 3A-05, and BG-199-3, I observed no incompatible wastes. Where wastes were being accumulated, I noted adequate aisle space between HWACs to allow inspection of accumulation start dates and unobstructed movement of personnel and emergency response equipment. I noted the presence of adequate emergency response equipment and materials at each HWCAA.

HWCAAs are inspected weekly, and inspections are documented on RCRA Weekly Inspection Records. During the CEI, I reviewed all weekly inspection records from the date of the last CEI (October 13 and 14, 2021) to the present. I noted no missed inspections or significant issues identified during the weekly inspections.

7. Manifests and Biennial Report

IAAAP generated 59 hazardous waste manifests since January 12, 2022. During the CEI, I reviewed all 59 manifests and associated LDR notifications and noted no deficiencies or concerns. Copies of select hazardous waste manifests are included in Attachments 15, 17, 19, and 23 as examples. IAAAP tracks all manifests on a Hazardous Waste (HW) Manifest Tracker showing manifests number, material shipped, date shipped, and the date signed copies of the manifests are received back at IAAAP. Copies of the 2022 and 2023 HW Manifest Tracker logs are included in Attachment 29.

IAAAP's Hazardous Waste Biennial Report for 2021 was submitted on January 31, 2022, to EPA. This document is maintained at the facility. A copy of the 2021 Biennial Report Summary is in Attachment 10.

8. Personnel Training Requirements

IAAAP's RCRA permit Module III.F requires the facility to conduct personnel training, per the requirements of 40 CFR 264.16 and the training plan incorporated by reference. AO trains its personnel per requirements of the permit, based on job descriptions and duties.

Mr. Hilger explained that all production personnel receive Level 1 Hazardous Waste Management training, which covers hazardous waste management and initial emergency response. In the past, Waste Disposal personnel also receive Level 2 Hazardous Waste Management training, which covered hazardous waste management and initial emergency response at permitted storage areas. Mr. Hilger explained that the list of personnel/job descriptions requiring Level 2 Hazardous Waste Management training was expanded in 2021, and 25 employees were identified for Level 2 training. Level 2 Hazardous Waste Management training was completed on June 29, 2021.

Training records are maintained in hard copy forms and in a searchable database. During the CEI, I reviewed documentation showing all personnel who manage waste (for example, Waste Disposal personnel, personnel listed in the SPCC Plan, and personnel who perform inspections or sign manifests) had received Level 1 and/or Level 2 RCRA training. I noted no deficiencies with the type and amount of training provided in 2022 to personnel who manage hazardous waste.

During a previous CEI on December 8 and 9, 2020, the inspector noted that the job description for M-12 Material Handler did not mention transportation of hazardous waste. I also noted in the previous CEI on October 13 and 14, 2021, the inspector asked if this preliminary finding had been addressed. At that time, IAAAP stated that the RCRA Training Plan and associated documentation (for example, written job descriptions) were currently being revised and planned on submitting the revised Training Plan in the first part of 2022. I asked Mr. Hilger if the training plan had been submitted and approved. Mr. Hilger stated that the training plan had been approved by the EPA on February 16, 2022.

During the CEI, I requested a copy of the job descriptions for Ms. Regan Pflasterer, an M-12 Material Handler who moves hazardous waste to CAAs and Building C-13; Mr. Hill, Hazardous Waste Disposal Supervisor who performs inspections of CAAs and Building C-13; and Mr. Hilger, Director, Environmental Health and Safety who is listed as an alternate Emergency Coordinator in the SPCC Plan. Copies of the job descriptions for these personnel are in Attachments 30 through 32, respectively. I noted that the job descriptions include the skills, education, and duties associated with each job title.

I also requested a copy of the training records for Ms. Pflasterer and Messrs. Hill and Hilger (Attachments 33, 34, and 35, respectively). I noted that each had received training on Storm Water Pollution Prevention. I asked Mr. Hilger if this training covers emergency response actions described in the SPCC plan. Mr. Hilger stated that it does, but the course name in the training database has always been named Storm Water Pollution Prevention.

I asked Mr. Hilger if Hazardous Waste Operations and Emergency Response (HAZWOPER) training is included in the Storm Water Pollution Prevention training. Mr. Hilger explained that

the facility conducts HAZWOPER training, but it is not included with the Storm Water Pollution Prevention training. I observed in Messrs. Hill's and Hilger's training records (Attachments 34 and 35) that both received HAZWOPER training in 2022.

Upon review of Ms. Pflasterer's training record (Attachment 33) following the CEI, I noted it included Hazardous Waste Management and Department of Transportation (DOT) training on June 29, 2021, but not in 2022. I contacted Mr. Hilger on May 9, 2023, and asked if Ms. Pflasterer received HAZWOPER training, as required by IAAAP's RCRA permit Module III.F, Referencing Permit Attachment III-4, Training Plan. Mr. Hilger stated that Ms. Pflasterer was new to the job in 2022, and received HAZWOPER training in 2022. He explained that the report that generated Attachment 33 did not have the appropriate filter applied, and the training record for HAZWOPER did not show on the report. Mr. Hilger emailed a copy of the HAZWOPER certificates for Ms. Pflasterer on May 9, 2023 (Attachment 36). As such, it appears that the training has been completed for Ms. Pflasterer and Messrs. Hill and Hilger in 2021, 2022, and 2023. I noted no deficiencies with personnel training during the CEI.

9. Operating Record

IAAAP's RCRA permit requires maintenance of an operating record. The facility maintains electronic and hard copy logs of hazardous waste storage containers going into and out of the permitted units (Attachment 14). The operating records include a description of each waste and quantity of the waste, applicable waste codes, date of collection, and location of the waste in the permitted units. I noted no deficiencies during my review of the operating record.

10. Air Emissions: 40 CFR Part 264 Subparts AA, BB, CC

EPA regulations in 40 CFR Part 265, Subparts AA, BB, and CC apply to LQG and permitted TSD facilities. If a facility manages hazardous waste with an organic concentration greater than 10 parts per million by weight (ppmw), the standards specified in Subpart AA apply to hazardous waste air emissions from certain process vents. A process vent used in distillation, fractionation, solvent extraction, thin-film evaporation, air stripping, or steam stripping is regulated by Subpart AA. IAAAP is not subject to the Subpart AA regulations because the facility does not have any of the process vents listed above.

If a LQG or permitted TSD facility has equipment that contains or contacts hazardous waste composed of 10 percent or greater organics by weight, the facility is subject to Subpart BB standards for inspection and monitoring of the equipment. IAAAP is not subject to the Subpart BB regulations because it does not have equipment that contains or comes in contact with hazardous waste.

The standards found in Subpart CC apply to LQG and TSD facilities that manage hazardous waste with volatile organic compounds (VOC) concentration that exceeds 500 ppmw in containers. The Subpart CC standards are applicable at IAAAP because the facility accumulates hazardous waste that contains VOCs in HWACs. During the CEI, I determined that IAAAP meets the Subpart CC requirements for containers with VOCs by using Container Level 1 controls (hazardous waste accumulation containers smaller than 122 gallons that are Department of Transportation [DOT]-approved). Wastes accumulated in containers larger than 122 gallons

(for example, waste paint booth filters and spent carbon) would not exceed 500 ppmw for VOCs. I noted no deficiencies with management of hazardous waste per the Subpart CC air emissions requirements.

11. Closure Plan

IAAAP's RCRA permit requires maintenance of a closure plan per requirements of 40 CFR 264 Subpart G. As the closure plan was approved during permit approval, I did not evaluate the closure plan for adequacy. However, the closure plan was available at the facility for inspection.

12. Summary of Preliminary Findings

In summary, as part of the CEI, I made the following preliminary finding:

- Failure to provide adequate aisle space in Building C-13, as required by Permit Module III.H.5 Referencing 40 CFR 264.35 (**NOPF No. 1**).
- Failure to list the home addresses and phone numbers of Emergency Coordinators in the RCRA Contingency Plan, as required by Permit Module III.I.1 Referencing 40 CFR 264.52(d) (**NOPF No. 2**)

Other than items specifically noted in the narrative, I observed no additional issues. However, further review by EPA may change or add to my findings.

William F
Starks

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William F. Starks, Environmental Consultant
CLAENE Group

AMBER WHISNANT

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Amber Whisnant, Section Chief
ECAD/CB/RCRA, EPA Region 7

Attachments:

1. Hazardous Waste Site Info Verification Report (2 Pages)
2. Receipt for Documents and Samples (1 Page)
3. Confidentiality Notice (1 Page)
4. Notice of Preliminary Finding (NOPF) (1 Page)
5. Facility Map (1 Page)
6. Aerial Image of the Facility (1 Page)
7. Photographic Documentation (Photolog and 16 Images) (10 Pages)
8. Aerial Image of Open Burn/Open Detonation Area (1 Page)
9. Aerial Image of Trench 5 Area (1 Page)
10. 2021 Hazardous Waste Biennial Report (8 Pages)
11. Waste Stream Report for January 1, 2022 to March 15, 2023 (9 Pages)
12. Explosive Waste Report for January 1, 2022 to March 15, 2023 (2 Pages)
13. Cyclesorb Carbon Vessel Waste Report for January 1, 2022 to March 15, 2023 (2 Pages)
14. Waste Inventory of Building C-13 (2 Pages)
15. Manifest and LDR Notification for Spent Carbon, Dated March 13, 2023 (2 Pages)
16. Calgon Carbon Adsorbate Profile Document (4 Pages)
17. Manifest and LDR Notification for Sump Sludge, Dated January 13, 2023 (2 Pages)
18. Waste Characterization Profile for Sump Scrap (2 Pages)
19. Manifest and LDR Notification for Waste Solvent Wipes, Dated February 2, 2023 (3 Pages)
20. Waste Determination Form for Waste Solvent Wipes (2 Pages)
21. SDS for Basecoat Paint (13 Pages)
22. SDS for Topcoat Paint (13 Pages)
23. Manifest and LDR Notification for Excess/Rejected Munitions and Components (2 Pages)

24. Universal Waste Certificates of Recycling for 2021 and Bills of Lading for 2022 (4 Pages)
25. Used Oil Bill Manifest, Dated December 15, 2022 (1 Page)
26. Used Oil Filter Manifest, Dated February 22, 2022 (1 Page)
27. C-13 Inspection Records, Dated October 31, 2022 to February 28, 2023 (1 Page)
28. RCRA Contingency Plan Emergency Coordinator List (1 Page)
29. HW Manifest Tracker Log for 2022 and 2023 (5 Pages)
30. Job Description for M-12 Material Handler (3 Pages)
31. Job Description for Hazardous Waste Disposal Supervisor (3 Pages)
32. Job Description for Director, Environmental, Health, and Safety (3 Pages)
33. Regan Pflasterer RCRA Training Records (2 Pages)
34. Zachary Hill RCRA Training Records (2 Pages)
35. William Hilger RCRA Training Records (1 Page)
36. HAZWOPER Training Certificates for Regan Pflasterer, Dated March 30, 2022 and May 31, 2022 (2 Pages)