



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Four Penn Center
1600 John F. Kennedy Boulevard
Philadelphia, Pennsylvania 19103-2852

Regulatory Program: Resource Conservation and Recovery Act (RCRA) - Subtitle C
Inspection Date(s): 3/14/2023
Inspection Type: Compliance Evaluation Inspection ("CEI")

Company Name:

Facility Name: Smithsonian Institution National Museum of Natural History
Facility Location: Constitution Avenue, NW, 10th & Constitution Ave.
Washington, D.C. 20560

Latitude: 38.891171 **Longitude:** -77.026015

RCRA ID Number: DC7470090005 **Generator Status:** LQG

RCRA Permit Number: N/A

NAICS Code: 712110 **SIC:** N/A

Unique Project #: 3E23RC079A

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Unique Project#: 3E23RC079A

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I. Introduction

On March 14, 2023, the United States Environmental Protection Agency, Region III (“EPA”), Enforcement & Compliance Assurance Division (“ECAD”), RCRA Section, conducted an unannounced Compliance Evaluation Inspection (“CEI”) under the Resource Conservation and Recovery Act (“RCRA”), as amended, 42 U.S.C. Sections 6901 et seq., of the Smithsonian Institution National Museum of Natural History, located in Washington, D.C. 20560, (herein after referred to as “the Facility” or “SINMNH”). The U.S. EPA lead inspector was Jeremy Dearden, accompanied by Andrew Ma. Prior to the CEI, the District of Columbia Department of Energy and Environment (“DOEE”) was notified of the inspection. DOEE was represented by Ronald Stith, Environmental Protection Specialist.

The inspection included an evaluation of the Facility’s processes and its compliance with RCRA Subtitle C and the federally authorized District of Columbia Municipal Regulations (“DCMR”). All information included in this report is the result of observations made by the inspectors, statements made by the Facility representatives, materials shown to the inspectors by the Facility representatives and/or documents provided by the Facility representatives to the inspectors at the time of, or subsequent to, the inspection. In addition, information gathered prior to the inspection from a review of EPA and State records may be included in this report.

A. Inspection Opening Conference

The EPA inspectors arrived at the main lobby at 09:05 (24-hour format). The weather was 37° and partly cloudy. Having checked in with security and due to representatives not being available at the time, the EPA inspectors had returned at 12:30 to meet with the SINMNH representatives. The EPA inspectors presented their credentials to Amanda Decker (Safety and Occupational Health Specialist), Kristopher Kinaitis (Environmental Protection Specialist), and Tony Richards (Environmental Protection Specialist). The Opening Conference was held in Ms. Decker’s office (“Rm CE-322”), and present for the Opening Conference were Inspector Dearden, Inspector Ma, Mr. Stith, Ms. Decker, Mr. Kinaitis, and Mr. Richards. During the opening conference Inspector Dearden explained the purpose and scope of the inspection. Additionally, Inspector Dearden informed the Facility representatives of their right to make confidential business information (“CBI”) claims on information provided and photographs taken during the inspection.

B. Summary of the Facility

SINMNH is a public museum and research institution for the natural sciences owned and operated by the United States federal government. The SINMNH is part of the museum, education, and research complex that is the Smithsonian Institution. The Facility consists of 1.3m square feet and has seven (7) floors. The museum is open to the public. The various research labs and departments are not open to the public. SINMNH has 2,000 employees consisting of fulltime, parttime, interns, and post-doctorate personnel. There are three shifts at the Facility worked by various personnel (6:30 – 15:30, 07:00 –

15:30, and 15:00 – 00:00). The Facility has a security office that is staffed all 24 hours. Construction on the Facility began on June 15, 1904. The Facility was first open to the public on March 17, 1910. The Facility has one underground storage tank (“UST”) that fuels an emergency generator. The Facility is connected to DC Water (publicly owned treatment works or POTW).

II. Site Activity

A. Permit Status and Regulatory Status

SINMNH currently notifies as a Large Quantity Generator (“LQG”) of hazardous waste. According to Ms. Decker, SINMNH does not have any environmental permits.

B. Process Description

SINMNH conducts scientific research and conservation in vertebrate zoology, botany, invertebrate zoology, anthropology, paleobiology, entomology, and mineral science. The analysis and research of various specimens results in numerous hazardous waste chemicals including hydrochloric acid, sulfuric acid, hydrofluoric acid, acetic acid, naphthalene, ethyl alcohol, isopropyl alcohol, ammonium hydroxide, potassium peridotite, sodium nitrate, and phosphorus pentoxide.

Beginning March 2022, SINMNH has been replacing its collection case cabinets (“cabinets”). The cabinets are disposed of as hazardous waste due to being contaminated with lead and arsenic. When a cabinet is identified for disposal, it is emptied of its contents and shipped off in a roll-off container. The replacement of the cabinets is currently ongoing.

C. Hazardous and Non-Hazardous Waste Generation

HAZARDOUS WASTE

Lab packs

- D002
 - Hydrochloric acid
 - Sulfuric acid
 - Hydrofluoric acid
 - Acetic acid
 - Ammonium hydroxide
- Naphthalene (U165)
- D001
 - Ethyl alcohol
 - Isopropyl alcohol
- Potassium peridotite (D011)
- Sodium nitrate (D007)
- Phosphorus pentoxide (D003)
- Gloves shipped with lab packs

Collection case cabinets

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- D008, D004

Lab trash

- D022, F003

Aerosol cans

- D001

NON-HAZARDOUS WASTE

General trash

- Public galleries

Lab debris

- Can include gloves (Attachment 1)

UNIVERSAL WASTE

- Bulbs
- Batteries

D. Hazardous Waste Management

One (1) 90-day hazardous waste accumulation area (“HWAA”)

Three (3) satellite accumulation areas (“SAA”)

One (1) universal waste accumulation area

- Fluorescent Lamp Storage Room

III. Observations

A walkthrough of the Facility began at 13:15 with the inspectors being accompanied by Ms. Decker, Mr. Richards, and Mr. Kinaitis. Photographs taken by Inspector Ma during the inspection can be found in the Photographic Log included with this report as Attachment 2. The walkthrough resulted in the following observations:

A. Research Laboratories

The inspectors went to the research laboratories. Enroute to the laboratories, the inspectors observed the in-use collection case cabinets (see Photo #1). The inspectors first went to the Plant Anatomy Laboratory (Rm W529). There were no lab employees present during the walkthrough in the laboratory.

In the laboratory, the inspectors observed the area utilized as an SAA (see Photos #2 & #3). At the time of the observation, no containers of hazardous waste were present. According to Ms. Decker, she collects the containers of hazardous waste within the SAAs and transfers them to the HWAA, and no one else is trained to transfer the containers to the HWAA.

The inspectors went to the Histology Lab (Rm W201). There were no lab employees present during the walkthrough of this laboratory. The EPA inspectors did not observe a SAA in the Histology Lab during the inspection. Inspector Dearden had observed single use laboratory gloves inside of an open trash container.

The inspectors went to a laboratory in Rm W153, located on the first floor west wing. The inspectors observed a yellow cabinet with a hazardous waste sign affixed to the cabinet (see Photos #4 & #5). Inside the cabinet, the inspector observed containers with chemicals (see Photo #6). According to the SINMNH representatives, the chemicals were still in use. None of the observed containers had any labels indicating that the containers were a waste.

B. Fluorescent Lamp Storage Room

The inspectors went to the Fluorescent Lamp Storage Room, which the SINMNH personnel referred to as the “Bulb Room”. The Bulb Room had contained spent fluorescent lamps that were either in closed containers, in open containers or not in any containers. To the left, observed in Photo #7, the inspectors observed various containers of universal waste lamps. Start accumulation dates observed for the lamps include 10/12/2022, 1/17/2023, and 2/11/2023. Due to how the boxes were stacked in the Bulb Room, the inspectors could not observe the universal waste label information on several boxes (see Photo #9). The cylindrical container in the left corner of Photo #7 was labeled “SPENT BULBS” (see Photo #11). Also observed in Photo 7 are waste lamps not in boxes (see Photo #8) and an open box of waste lamps (see Photo #10). No label was observed on the open box of waste lamps. According to Ms. Decker, the Bulb Room is only utilized for the accumulation of waste lamps. The inspectors observed the “NHB Fluorescent Bulb Storage Log” on the wall (see Photo #12). The last date of entry on the log for bulb pick up was 8/19/2022. The right side of the Bulb Room can be observed in Photo #13. On the right side, two (2) open, unlabeled boxes of waste lamps were observed (see Photos #14 & #16). The inspectors observed waste ballasts that were not in a box (see Photo #15). Next to a ladder, the inspectors observed two (2) waste lamps that were not in a box (see Photo #16). The inspectors observed broken glass on the floor under the ladder (see Photo #17).

C. Alcohol Vault

The inspectors went to the Alcohol Vault which is the Facility’s HWAA. The inspectors observed three (3) closed yellow cabinets (one on the left and two on the right). Inside of the left cabinet, the inspectors observed five (5) containers (see Photo #18). All of the containers had contained fluid inside. The information of the containers include:

Rear left carboy (Photo #19)

- Labeled hazardous waste
- Start accumulation date: “2022”
- Ethanol

Front left carboy (Photo #20)

- Labeled hazardous waste
- Start accumulation date: 9/15/2022
- “ETOH” (ethanol)

Middle rear carboy (Photo #21)

- No hazardous waste label observed
- Date: 2/09/2023
- Formalin

Middle front carboy (Photo #22)

- Labeled hazardous waste
- Start accumulation date: 12/12/2022
- Glycerine

Right 5-gallon red can (Photo #23)

- No label observed
- No start accumulation date observed
- According to Ms. Decker, the red can contains gasoline. It had fallen off of a truck the prior week and was subsequently placed in the HWAA.

According to Ms. Decker, the Facility’s laboratory personnel are dating the containers that are placed in the SAAs in the area where the waste is generated, and the containers would eventually be transferred to this HWAA. The inspectors observed the inside of the right cabinet on the right side of the room (see Photo #24). The information on the items within the cabinet is as follows:

Top shelf

- Box (Photo #25)
 - Labeled hazardous waste
 - No start accumulation date observed

- Phenol, Chloroform, Ethanol, Isopropanol, Water
- Plastic bag (Photo #26)
 - Contains batteries
 - No universal waste label observed
 - Dated 10/17/2022

Second shelf

- Box
 - Information similar to top shelf box as seen in Photo #25
- 1-gallon container (Photo #27)
 - Labeled hazardous waste
 - Start accumulation date: 10/21/2022
 - “waste ETOH”
 - Flammable sticker
- Two (2) 1-quart containers (Photo #28)
 - No hazardous waste label observed
 - No start accumulation date observed
 - Left: “Acrylic Polymer”, Right: “AERYSOL”
 - Ms. Decker believes the two (2) containers are waste, and she did not know who had placed the containers in the HWAA.

Third Shelf

- Box (Photo #29)
 - Labeled hazardous waste
 - No start accumulation date observed
 - Guanidine thiocyanate, ethanol, sodium dodecyl sulfate, tris(hydroxymethyl)aminomethane, β -mercaptoethanol
- Bag (Photo #30)
 - Contains batteries
 - No universal waste label observed

Bottom shelf

- Box
 - Similar information as previous detailed from the box on the third shelf
- Bag
 - Labeled hazardous waste
 - Start accumulation date: 2/02/2023
 - “OC spray”

According to Ms. Decker, the containers observed inside of the right cabinet were brought down by Ms. Decker the day prior to the ongoing CEI. An inventory of the waste transferred to the HWAA on 3/13/2023 can be observed in Attachment 3. The inspectors observed the inside of the left cabinet on the right side of the room (see Photo #31). Various bags and containers of waste chemicals were observed on the second shelf. The bags and containers were labeled with the words “hazardous waste”. The containers were marked with start accumulation dates that included 12/14/2022 (see Photo #32), 10/11/2022 (see Photo #33), and 11/04/2022 (see Photo #34). A bottle labeled as “vacuum pump oil” as observed in Photo #34 had paper placed where a cap would be affixed (see Photo #35). According to Ms. Decker, laboratory personnel would date the hazardous waste containers while the containers are still in the SAA in the laboratories. According to post inspection correspondence, SINMNH had a waste pick up on 3/16/2023 which removed all of the waste inside of the Alcohol Vault and the Bulb Room.

While walking outside through the loading dock area, Inspector Dearden observed a single aerosol can inside of an open roll-off trash container (see Photos #36 & #37). The roll-off trash container had no labels. The aerosol can was labeled “CRT Terminal Cleaner”.

This concluded the physical walkthrough portion of the inspection. The time was 14:55.

IV. Records Review

The records review took place in Rm CE-322. The inspectors requested HWAA weekly inspection records, training records, hazardous waste manifests and land disposal restriction forms going back three (3) years from the date of the inspection and the most recent contingency plan. The inspectors also requested the two (2) most recent biennial reports.

A. Hazardous Waste Manifests and Land Disposal Restriction Forms

The inspector reviewed three (3) years of hazardous waste inspection forms and Land Disposal Restriction Forms. SINMNH shipped hazardous waste to Cycle Chem Inc. (PAD067098822). The manifests were signed by Rudolph “Rudy” Anderson (Hazardous Waste Coordinator) and Amanda Decker. Land Disposal Restriction Forms were observed with the hazardous waste manifests.

B. Hazardous Waste Accumulation Area Inspection Records

Hazardous waste accumulation area weekly inspection records for calendar years 2020 to 2023 were requested and reviewed. The observed weekly inspection records were maintained as a hard copy. The EPA inspectors noted that the observed records had indicated that the weekly inspections were conducted by Rudy Anderson and Amanda Decker. The EPA inspectors had noted that no weekly inspections were conducted between March 2020 to December 2020 due to the Facility being closed due to Covid-19. Also, the EPA inspectors had noted that no weekly inspections were conducted between Dec. 5, 2021 to Feb. 4, 2022. A weekly inspection was conducted on Feb. 4, 2022, but no inspections were observed in the records afterwards until Feb. 25, 2022. A weekly inspection was conducted on

March 13, 2023 where “yes” was indicted for “Containers are labeled with ‘Hazardous Waste’ and the Accumulation Start Date”. Based on the observations cited in Section III.C. Alcohol Vault at the time of the CEI, not all of the observed containers in the Alcohol Vault were labeled hazardous waste and/or had a start accumulation date. A column on the inspection logs reads “Container dates less than 180 days old”. SINMNH currently is a large quantity generator of hazardous waste which, according to DCMR, hazardous waste can be accumulated in a HWAA no longer than 90-days. Examples of the weekly inspection records can be observed in Attachment 4.

C. Hazardous Waste Training Records

Training records were requested from calendar year 2020 to the date of the inspection. Reviewed training records included “DOT Hazardous Materials Training: The complete course” and “Hazardous Waste Management”. No training record for calendar year 2021 was observed for Amanda Decker. No training records have been observed for Rudy Anderson. According to Ms. Decker, Mr. Anderson did not take any hazardous waste management training for the calendar year 2022. No training records were observed for Chun-His Wong (Acting Associate Director, Facility Operations), who is listed as an emergency coordinator in the contingency plan.

D. Contingency Plan

The inspectors reviewed SINMNH’s contingency plan (“the Plan”), which was last updated in calendar 2019 (signed by Mr. Wong and Mr. Anderson, respectively, on 1/31/2020 and 12/20/2019). The Plan included arrangements with local authorities and a list of emergency equipment. In review of the Plan, the inspector did not observe an evacuation plan for facility personnel and a description of actions facility personnel will take in response to an emergency (e.g. fire, explosion, unplanned events). Mr. Anderson and Mr. Wong are indicated as the emergency coordinators, but the Plan does not designate who is the primary and who is the alternate. At the time of the CEI, Facility personnel indicated that Mr. Anderson had retired at the end of Dec. 2022 and is no longer employed by the Facility. Facility personnel also indicated that Mr. Wong has changed his position and is no longer involved with his previous capacity at the Facility.

E. Biennial Reports

The inspectors requested and reviewed biennial reports for the years 2019 and 2021. The 2019 biennial report was signed and certified by Rudy Anderson on 2/27/2020. The 2021 biennial report was signed and certified by Rudy Anderson on 2/17/2022.

V. Closing Conference

The closing conference was attended by Inspector Dearden, Inspector Ma, Mr. Stith, Ms. Decker, Mr. Richards, and Mr. Kinaitis. SINMNH was informed that EPA Inspectors are not authorized to make violation determinations at the time of the inspection, but that they would communicate observations and areas of concern. The following are observations and areas of concern that were communicated to SINMNH at the time of the CEI:

- The inspectors observed, in the Alcohol Vault (HWAA), several containers that were not properly labeled with either “hazardous waste”, “universal waste batteries”, or the start accumulation date.
- The Bulb Room was observed to contain loose waste lamps that were not in boxes, and some of the observed UW boxes were open. Broken glass was also observed on the floor in the Bulb Room.
- Outside at the loading dock area, an aerosol can was observed in an unlabeled open trash roll-off container.
- The contingency plan did not specify who is the primary and alternate emergency coordinators. An evacuation plan and an emergency plan were not observed in the contingency plan.
- The EPA inspector noted several gaps of time in the weekly inspection log that appear to indicate that no weekly inspections of the HWAA were completed.
- The weekly inspection log has a column that states “Container dates less than 180 days old”
- The weekly inspection conducted on 3/13/2023 indicated “yes” regarding containers being properly labeled. The inspectors observed hazardous waste containers in the HWAA that were not properly labeled.

The CEI was concluded at 16:50 on March 14, 2023.

VI. List of Attachments

- Attachment 1: March 27, 2023 Email Correspondence
- Attachment 2: Photographic Log
- Attachment 3: March 13, 2023 Waste Transfer Inventory
- Attachment 4: Weekly Vault Inspections