

RCRA Inspection Report

1) Inspector and Author of Report

William Kappler
Physical Scientist
Phone: (404) 562-8498
kappler.william@epa.gov

U.S. Environmental Protection Agency, Region 4
Enforcement and Compliance Assurance Division
Chemical Safety and Land Enforcement Branch
RCRA Enforcement Section
61 Forsyth Street, S.W.
Atlanta, Georgia 30303

2) Facility Information

North Carolina State University
Main Campus
2620 Wolf Village Way
Raleigh, North Carolina 27695

EPA ID #: NCD000830737
NAICS #: 611310 – Colleges, Universities, and
Professional Schools

3) Responsible Officials

Karen Trimberger
Environmental Affairs Manager
katrimbe@ncsu.edu
(919) 515-6859

4) Inspection Participants

Karen Trimberger, North Carolina State University Main Campus
James Atkinson, North Carolina State University Main Campus
Kyle Wilson, North Carolina State University Main Campus
Elizabeth Caron Wilson, North Carolina State University Main Campus
Jenne Walker, North Carolina Department of Environmental Quality (NCDEQ)
William Kappler, U.S. Environmental Protection Agency, Region 4

5) Date of Inspection

May 16, 2024, at 9:10 a.m.

6) Applicable Regulations¹

Resource Conservation and Recovery Act (RCRA) Sections 3002 (42 U.S. Code – Annotated U.S.C.A. 6925 and 6927), and 40 Code of Federal Regulation (C.F.R.) Parts 260 - 270, 273, 278, & 279; The North Carolina Solid Waste Management Law, N.C.G.S. § § 130A-17 to -28 and 130A-290 to - 310.22, and North Carolina Hazardous Waste Management Rules, 15A NCAC 13A .0101 to .0119; and Hazardous Waste Permit NCD000830737-R2.

¹ As the State's authorized hazardous waste program operates in lieu of the federal RCRA program, the citations of those authorized provisions will be to the authorized State program. However, for ease of reference, the federal citations will follow in brackets.

Pursuant to 15A NCAC 13A .0102(b) [40 C.F.R. § 260.10], a large quantity generator of hazardous waste (LQG) is a generator who generates greater than or equal to 1,000 kilograms (2,200 pounds) of non-acute hazardous waste in a calendar month.

Pursuant to 15A NCAC 13A .0119(a) [40 C.F.R. § 273.9], a small quantity handler of universal waste (SQHUW) is a universal waste handler who does not accumulate 5,000 kilograms or more of universal waste (batteries, pesticides, mercury-containing equipment, lamps, or aerosol cans, calculated collectively) at any time.

7) Purpose of Inspection

The purpose of this inspection was to conduct a joint unannounced compliance evaluation inspection to determine the North Carolina State University Main Campus hereinafter, (“NCSU” or the “facility”) compliance with the conditions of its RCRA Hazardous Waste Facility Operating Permit (NCD000830737-R2), the applicable requirements of RCRA and the corresponding North Carolina Department of Environmental Quality (NCDEQ) regulations. This was an EPA lead inspection.

8) Facility Description

NCSU is a “Land Grant” University founded in the 1880s and is the primary technological institute in the University of North Carolina System. NCSU offers undergraduate through post-graduate degrees at colleges within NCSU that specialize in Agriculture and Life Sciences, Design, Education, Engineering, Natural Resources, Physical and Mathematical Sciences, Textiles and Veterinary Medicine. Research facilities are located on and off the NCSU Main Campus. NCSU also provides studies in all areas of liberal and performing arts and sciences. Its major missions entail teaching, research, and extension services.

NCSU owns several major offsite teaching and research facilities in Raleigh, including (but not limited to) Centennial Campus, the Centennial Biomedical Campus (College of Veterinary Medicine), and Lake Wheeler Field Laboratory/Research Stations. In addition, other research units and field laboratories are located throughout the state. Statewide, NCSU covers about 2,500 acres (includes main campus and all other campuses, combined). NCSU operates approximately 1,500 to 2,000 teaching and research laboratories distributed through these numerous buildings, colleges, and properties. The NCSU operations also include few support services such as maintenance, grounds, motor pool and an athletic department. The NCSU is owned by the State University system and consists of approximately 1,500 acres. The NCSU serves a total of over 30,000 students and 10,000 employees. The NCSU Main Campus consists of approximately 20,000 students.

According to the most recent notification to the NCDEQ Division of Waste Management, the NCSU Main Campus is operating as a large quantity generator (LQG) of hazardous waste,

transporter of hazardous waste and permitted treatment, storage, and disposal facility (TSDF). However, effective March 1, 2018, portion of the campus operates under 40 C.F.R. Part 262 - Subpart K (Alternative Requirements for Hazardous Waste Determination and Accumulation of Unwanted Material for Laboratories Owned by Eligible Academic Entities) and managed accordingly.

Hazardous waste may be generated at various support service areas such as maintenance, grounds, motor pool and the athletic department. These areas are subject to regulation under the LQG rules. Hazardous waste is picked up from generation and satellite accumulation areas (SAAs) weekly and transported to the permitted Waste Management Facility (WMF) for storage prior to offsite shipment for disposal. NCSU is permitted to transport hazardous waste from university owned offsite generation areas.

NCSU is permitted to bulk and store hazardous waste through the RCRA permit issued by NCDEQ. The most recent renewal permit became effective on January 6, 2015. The permit expires on January 6, 2025. NCSU Main Campus is authorized to store the following hazardous waste streams or categories of hazardous waste in accordance with the conditions specified in the WMF's permit: D001-D043, F001-F005, F027, F039, and multiple P and U-listed wastes. The City of Raleigh provides domestic sanitary sewer and drinking water to the NCSU Main Campus. Access to the Facility is controlled through various security check-in points or keycard access for campus buildings/rooms.

NCSU uses Clean Earth as the contractor to handle and manage the hazardous waste containers in the WMF. Two employees of Clean Earth work onsite five days a week and pick-up and transport hazardous waste, non-hazardous waste, universal waste, and low-level radioactive waste from Main Campus to the WMF. An on-line waste pick-up request and tracking system is used to initiate waste pick-up from points of generation across the NCSU campus. The generator (must be a NCSU student or employee) creates a request for waste pickup by entering all required information about the waste container(s). The request for pick-up is then submitted on-line to the NCSU's Environmental Health and Safety (EHS) staff at which time it is assigned a unique tracking number. EHS staff reviews the request, assigns applicable waste codes, and a pickup is scheduled. Once pick up is complete, the contractor conducts the sorting, bulking, lab packing, labeling, and dating of the containers. Hazardous waste manifests are prepared for shipment of all hazardous waste containers offsite to a permitted TSDF. The contractor also conducts various inspections of the WMF.

The NCSU Main Campus EHS personnel prepare waste profiles/waste acceptance, schedule pick-ups at the hazardous waste generator sites, prepare the manifests for incoming shipments of hazardous waste (campus wide), conduct hazardous waste audits, and give hazardous waste training to all hazardous waste generators at NCSU.

Waste streams categories that are generated at NCSU include:

- Hazardous Waste: spent solvents, expired chemicals, waste flammable liquids, lab packs, waste paint; and
- Other Waste Streams: Ballast (PCB and non-PCB containing); Used Oil – used oil generated on-site is sent off to be recycled; Universal Waste – used fluorescent lamps, used batteries, mercury containing equipment.

9) **Previous Inspection History**

NCSU was inspected by the EPA and the NCDEQ on July 11 and 12, 2023, for compliance with its hazardous waste permit and state and federal hazardous waste regulations. Potential violations were observed at the time of the inspection.

10) **Opening Conference**

On May 16, 2024, EPA inspector William Kappler, accompanied by NCDEQ inspector Jenne Walker, arrived at NCSU at approximately 9:10 a.m. Karen Trimberger, Environmental Affairs Manager, immediately received the inspectors. Karen Trimberger, and the inspectors were joined by James Atkinson, Kyle Wilson, and Elizabeth Caron (NCSU representatives) for the opening conference. The inspectors introduced themselves, showed their credentials and explained the purpose of the visit.

The inspectors described the anticipated use of equipment (digital camera) during the inspection and provided a 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 submitted to EPA. The NCSU did not assert a business confidentiality claim.

NCSU representatives provided an overview of the current operations during the opening conference. The inspection participants also discussed health and safety protocols and required personal protective equipment before NCSU representative led the inspectors on a tour of the operations.

11) **Inspection Observations**

Loading Dock Area

Hazardous waste, non-hazardous waste, universal waste, and low-level radioactive waste transported from the generator sites is received in this area for management. Waste is also shipped from this area to offsite designated facilities. Communication is conducted by onsite landline or by cell phone.

Room 214

NCSU manages hazardous waste permitted storage areas/rooms in the WMF. Room 214 is the main waste management area, consisting of four cells separated by partition walls, with containment trenches in each cell. There are separate rooms in the WMF designed for storage of specific types of waste. The WMF was identified with a sign which read “danger, hazardous waste storage.” NCSU manages ignitable and reactive waste in the WMF, and the inspectors observed “No Smoking” signs on the front entry doors.

The WMF is equipped with an internal communications or alarm system capable of providing immediate emergency instruction to WMF personnel including the capability to summon emergency assistance from local police departments, fire departments, or state or local emergency response teams. The inspectors observed portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment. The WMF is equipped with automatic water and foam suppression systems.

The inspectors reviewed the WMF inspection logs from January 1, 2023, to May 13, 2024. The inspectors suggested that the full name of the designated facility where hazardous waste is shipped should be clearly identified in the log.

Cell 214-R Reactives

NCSU manages universal waste lamps in Cell 214-R. The inspectors observed 26 containers storing four-foot lamps, two containers storing eight-foot lamps, and 13 containers storing various size lamps. The universal waste lamp containers were closed, in good condition, labeled with the words universal waste lamps, and marked with storage dates in April and May 2024.

The inspectors also observed several small gas cylinders in containers in a metal cage. The gas cylinders were closed, in good condition, labeled with the words hazardous waste, labeled with an indication of the hazards, and marked with storage dates less than one year.

Cell 214-I Inorganic

NCSU manages inorganic waste generated by campus laboratories in this cell. The inspectors observed two 30-gallon containers storing hazardous waste. The containers were closed, in good condition with aisle space, labeled with the words hazardous waste, labeled with an indication of the hazards, and marked with the date January 4, 2024, and April 8, 2024.

The inspectors observed a multi-shelf unit storing one-gallon containers, one- and two-liter containers, and several various size containers of hazardous waste in plastic trays on different shelves identified as A-1 through A-9 and B-1 through B-9. The containers were closed, in good condition with aisle space, labeled with the words hazardous waste, labeled with an indication of the hazards, and marked with storage dates less than one year.

Cell 214-O Organic

NCSU manages hazardous waste organics generated by campus laboratories in this cell. The inspectors observed one 55-gallon container and a one-cubic yard container storing hazardous waste. The containers were closed, in good condition with aisle space, labeled with the words hazardous waste, labeled with an indication of the hazards, and marked with the storage date March 25, 2024, and May 8, 2024.

The inspectors observed a multi-shelf unit against the wall storing approximately 11 containers in plastic trays ranging from one to two millimeters to several quarts in size. The containers were closed, in good condition with aisle space, labeled with the words hazardous waste, labeled with an indication of the hazards, and marked with storage dates in May 2024.

Located on the opposite wall on a shelf unit the inspectors observed a 5-gallon container storing hazardous waste. The container was closed, in good condition with aisle space, labeled with the words hazardous waste, labeled with an indication of the hazards, and marked with the storage date May 16, 2024.

The inspectors also observed three 55-gallon cardboard containers storing waste medicine, liquid toxic in this cell. The containers were closed, in good condition with aisle space, labeled with the words DOT Regulated Hazardous Material, labeled with an indication of the hazards, and marked with the storage date April 26, 2024, May 15, 2024, and April 8, 2024 (Photographs 1 and 2). The inspectors requested to review the waste determination(s) for the waste stream.

Cell-214-U Utility

NCSU manages waste generated by the campus in this cell. The inspectors observed three 55-gallon containers storing hazardous waste. The containers were closed, in good condition with aisle space, labeled with the words hazardous waste, labeled with an indication of the hazards, and marked with the storage date April 30, 2024, April 24, 2024, and May 15, 2024.

The inspectors also observed a 10-gallon container, a 15-gallon container and a 30-gallon container storing waste PCB. The containers were closed and labeled with words PCBs.

Room 207

NCSU manages non-regulated hazardous waste generated by the campus in this room. The inspectors observed three one-cubic yard containers storing nonhazardous waste sodium chloride rags. The containers were closed, in good condition with aisle space, labeled and marked with storage dates.

Room 208

NCSU stores equipment and supplies in this room. Hazardous waste was not observed in the room at the time of the inspection.

Room 209

NCSU manages waste generated by campus laboratories in this room. Located along the wall the inspectors observed several mercury thermometers in a plastic tray on a shelf unit. The thermometers were closed, in good condition, labeled with the words hazardous waste, labeled with an indication of the hazards, and marked with the storage date May 1, 2024.

The inspectors observed a yellow flammable cabinet storing several various size containers of reactive, dangerous hazardous waste. The containers were closed, in good condition with aisle space, labeled with the words hazardous waste, labeled with an indication of the hazards, and marked with storage dates in May 2024.

The inspectors observed several containers of hazardous waste in a refrigerated, for reactive, dangerous unstable, sensitive waste. The containers were closed, in good condition, labeled with the words hazardous waste, labeled with an indication of the hazards, and marked with storage dates in March and May 2024.

The Permit states that the maximum storage capacity for Room 209 is 45-gallons. The inspectors observed containers totaling less than 45-gallons.

Room 215

Hazardous waste liquids are managed and bulked in this room. Organic and inorganic hazardous waste, organic and inorganic acids are stored in Room 215 on containment pallets and shelving units. A partition wall divides the room into cells for the specific hazardous waste categories, each with a containment trench in the floor. The staging areas for consolidating wastes include pans on shelves and carts with containment shelves. Shelving units in each section consisted of three shelves with containment trays on each shelf. Small containers of hazardous waste are stored in the trays.

Hazardous Waste Corrosives and Flammables Cell

The inspectors observed two 55-gallon containers, two 35-gallon containers, and one 15-gallon container storing hazardous waste. The inspectors also observed two 55-gallon containers storing nonhazardous waste. The containers of hazardous waste were closed, in good condition with aisle space, labeled with the words hazardous waste, labeled with an indication of the hazards, and marked with storage dates. The oldest storage date observed was March 20, 2024.

The inspectors observed a 5-gallon container storing mercury solution (D009). The container was closed, in good condition with aisle space, labeled with the words hazardous waste, labeled with an indication of the hazards, and marked with the storage date April 8, 2024.

Hazardous Waste Halogenated and Nonhalogenated Cell

The inspectors observed five 55-gallon containers and one 20-gallon container storing hazardous waste. The containers were closed, in good condition with aisle space, labeled with the words hazardous waste, labeled with an indication of the hazards, and marked with the storage dates May 2, 2024, or May 9, 2024.

A designated area in Room 215 is used for liquid hazardous waste consolidation and bulking. The room is constructed with a central trench/sump covered by a metal grate. Six stationary fume hood units are utilized in this room. The room is equipped with a central ventilation system. Each fume hood unit may hold one 55-gallon container and is specific for the bulking of the following waste streams: corrosives (acids), nonhalogenated fuels with wastewater, waste flammable liquids, halogenated fuels, used oil and non-regulated liquids.

The inspectors observed one 55-gallon drum in each of the stationary fume hoods, except for the nonregulated liquids hood. The containers were closed, in good condition with aisle space, labeled with the words hazardous waste, labeled with an indication of the hazards, and marked with the storage dates in April and May 2024.

Room 206

Hazardous waste mixed with low level radioactive waste may be stored in this room. Containers of one gallon or less may be stored on shelves, and carboys and larger containers may be stored on the floor. The inspectors observed one five-gallon container and several small containers in a plastic tray storing mixed low level radioactive waste. The containers were closed, in good condition with aisle space, labeled with the words hazardous waste, labeled with an indication of the hazards, and marked with the storage dates less than one year.

The inspectors also observed five 55-gallon containers and one 30-gallon container storing nonhazardous waste. The containers were closed, in good condition, and labeled with words identifying the container's content.

Room 210

Archived records are maintained in this room. Hazardous waste was not observed in the room at the time of the inspection.

Bunker

The bunker is used for managing explosive hazardous waste. Hazardous waste was not observed in the bunker at the time of the inspection.

Monitoring wells

The inspectors observed one up-gradient well (U-2) and one down-gradient well (D-3). The up-gradient well is located behind the WMF within the fence system and the down-gradient well is in the parking lot area. The inspectors observed the up-gradient well's pad was covered in vegetation and soil. The inspectors requested NCSU to clean the pad of soil and vegetation. The wells were locked.

12) Records Review

The inspectors reviewed the inbound and outbound hazardous waste manifests and land disposal restriction notifications. Transporters included Republic Environmental Systems

(PAD982661381). The designated facility included NCSU EHSC-Storage (NCD000830737) and Republic Environmental Systems PA LLC (PAD085690592) as the offsite TSDF. The inspectors reviewed inbound manifests for June 2023, October 2023, and February 2024. The inspectors reviewed outbound manifests from January 2023 to May 2024.

The inspectors reviewed the contingency plan, the quick reference guide, the RCRA training and training records, the waste minimization report, and the 2023 biennial report. The inspectors reviewed the waste determination/waste profile (WP), safety data sheet (SDS), and waste stream record log for waste medicine, liquid toxic observed stored in cardboard containers labeled with the words DOT Regulated Hazardous Material, in Cell 214-O Organic.

13) Closing Conference

The inspectors conducted a closing conference with NCSU representatives. During the meeting, the inspectors stated their preliminary conclusions of the inspection.

14) List of Attachments

Attachment 1 – RCRA Inspection Photograph Log

15) Signed

**WILLIAM
KAPPLER**

Digitally signed by
WILLIAM KAPPLER
Date: 2024.07.18
11:54:56 -04'00'

William Kappler
Physical Scientist

16) Concurrence

**ALAN
NEWMAN**

Digitally signed by ALAN
NEWMAN
Date: 2024.07.18
17:44:56 -04'00'

Alan R. Newman
Acting Chief
RCRA Enforcement Section

ATTACHMENT 1 – PHOTOGRAPH LOG

NORTH CAROLINA STATE UNIVERSITY – MAIN CAMPUS

RALEIGH, NORTH CAROLINA

COMPLIANCE EVALUATION INSPECTION PHOTOGRAPHS

MAY 16, 2024

**Photos taken by: William Kappler
Samsung Camera (Model WB250F)
EPA Property Tag# S75917**



North Carolina State University – Main Campus (NCSU). Cell 214-O Organic. The inspectors observed cardboard containers storing waste medicine, liquid toxic in this cell labeled with the words DOT Regulated Hazardous Material. Photograph 1 taken at 10:45 a.m.



NCSU. Cell 214-O Organic. The inspectors observed cardboard containers storing waste medicine, liquid toxic in this cell labeled with the words DOT Regulated Hazardous Material. Photograph 2 taken at 10:45 a.m.