US Environmental Protection Agency – Region 2
Caribbean Environmental Protection Division
Response and Remediation Branch

United States Environmental Protection Agency

Resource Conservation and Recovery Act (RCRA)
Compliance Evaluation Inspection

Facility Name:	University of Puerto Rico Rio Piedras Campus		
EPA ID Number:	PRR000012088		
Date of Inspection:	June 27, and 28 2024		
Generator Status in Record:	Generator (Federal & State)		
Generator Status at the time of inspection:	LQG		
RCRA Permitted:	No		
Basis for Inspection:	Core Program		
Corrective Action:	No		
Project ID	CEPD-RCRA-24-0442		
Facility Physical Location: (Municipality, PR, zip code)	431 Ponce de Leon Avenue, Rio Piedras, Puerto Rico 00931		
Geographical Coordinates:	18°39'30.44"N, 66°05'58.11"W		
Facility Owner:	Mr. Jorge Ramos, Health, Occupational and Environmental Safety Office Director	(787) 764-0000 ext. 83140	
	jorge.ramos@upr.edu		
	Mailing address: P.O. Box 22785 431 Ponce de Leon Ave., Rio Piedras, P.R. 00931		
Facility Operator:	Ms. Lymari Orellana, Health, Occupational and Environmental Safety Specialist	(787) 764-0000 ext. 83151 (787) 344-2441 (mobile)	
	lymari.orellana@upr.edu		
	Mailing address: P.O. Box 22785 431 Ponce de Leon Ave., Rio Piedras, P.R. 00931		
NAICS:	611310 - Colleges, Universities, and Professional Schools		
SIC:	8221 Colleges, Universities, and Professional Schools		
Area:	262 acres of land property		
Number Employees:	12,000 Students, and 3,000 Regular Staff Members and Members of the Academic Education		
Personnel participating in inspection:			
Eduardo R. Gonzalez	EPA Region 2-CEPD	Enforcement Officer	(787) 977-5839 gonzalez.eduardo@epa.gov
Status:	Final		
Record Schedule:	1044(c)		
Multi-media Checklist: ATTACHMENT # N/A		Referral: No	
EPA Lead Inspector Signature/Date	X Eduardo Gonzalez September 4, 2024		

Supervisor Signature/Date	X DAVID CUEVAS-MIRANDA Digitally signed by DAVID CUEVAS-MIRANDA Date: 2024.09.04 11:59:54 -04'00' David N. Cuevas Miranda, Ph.D.

1 INTRODUCTION

On March 8 thru 10, 2023, a Resource Conservation and Recovery Act (RCRA) Compliance Evaluation Inspection (the "Inspection") was conducted at University of Puerto Rico-Rio Piedras Campus (the "Facility" or "UPR Rio Piedras Campus"), pursuant to Section 3007 of RCRA. The Facility is located on 431 Ponce de Leon Avenue, Rio Piedras, Puerto Rico.

As part of the Inspection, an opening meeting, walkthrough, documents review and closing meeting were conducted to evaluate Facility's compliance with the requirements that govern hazardous waste generators, universal waste handlers and used oil generators as per RCRA. UPR Rio Piedras Campus is designated in the RCRAInfo[1] database as a "Large Quantity Generator (LQG) of Hazardous Waste" as notified to EPA on April 15, 2008. Furthermore, according to E-Manifest and Biennial Report data, UPR Rio Piedras Campus had been generating hazardous waste as a Large Quantity Generator (LQG) as of March 2023. At that time, it was estimated that approximately 6.471 tons per year of hazardous waste was generated at the campus.

According to EPA's RCRAInfo and ECHO records, one full Clean Water Act (CWA) Inspection was conducted for Non-Major, Permit Expired; Compliance Tracking Partially Off on June 7, 2018, and no violation were identified at the Facility. One RCRA Inspection (one-Federal) was conducted at the Facility on July 24, 2018, in the areas of general generator requirements of hazardous wastes, and violations were found in areas of 40 CFR § 262.11- "Hazardous Waste Determination and Recordkeeping," 40 CFR § 262. 15(a)(3)(i) "Incompatible wastes, or incompatible wastes and materials must not be placed in the same container," 40 CFR § 262. 15(a)(4), "A container holding hazardous waste must be closed at all times during accumulation," 40 CFR § 273.13(d)(l), "A small quantity handler of universal waste must contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps,"40 CFR § 273.I4(a), "Universal waste batteries or a container in which the batteries are contained, must be labeled or marked clearly with any one of the following phrases: "Universal Waste-Battery", or "Waste Battery", or "Used Battery," 40 CFR § 273 .14(e),"Each lamp or a container or package in which such lamps are contained must be labeled or marked clearly with one of the following phrases: "Universal Waste-Lamp(s)", or "Waste Lamp(s)", or "Used Lamp(s)," 40 C.F.R § 273.15(c), "A small quantity handler of universal waste who accumulates universal waste must be able to demonstrate the length of time that the universal waste has been accumulated from the date it becomes a waste or is received," 40 CFR § 262. 17(7)(i)(A), "Facility personnel must successfully complete a program of classroom instruction, online training," 40 C.F.R § 262. 17(7)(iii),"Ffacility personnel must take part in an annual review of the initial training," 40 CFR §

[1] RCRA Info and ECHO, EPA's Enforcement Compliance and History Online System

262.260(a), "A large quantity generator must have a contingency plan for the facility," and, 40 CFR § 262.261 (c), "The Contingency Plan must describe arrangements agreed to with the local police department, fire department, other emergency response teams, emergency response contractors, equipment suppliers, local hospitals or, if applicable, the Local Emergency Planning Committee, pursuant to §262.256." On February 7, 2019, EPA issued Notice of Violation/ RCRA 3007 Information Request letter alleging that UPR Rio Piedras had violated requirements of RCRA and regulations concerning the handling and management of hazardous waste at its campus. On July 2, 2019, UPR Rio Piedras responded EPA letter indicating corrective and proactive actions were undertaken at the academic and research laboratories to compliance with RCRA regulations and returned to compliance.

2 OPENING MEETING (DAY 1- JUNE 27, 2024)

On June 27, 2024, an opening meeting was held between Mr. Jorge Ramos, Health, Occupational and Environmental Safety Office Director, and Ms. Lymari Orellana, Health, Occupational and Environmental Safety Specialist I both from UPR Rio Piedras Campus, and me. I identified myself as EPA RCRA Enforcement Officers and told the Facility representatives that the purpose of my visit was to conduct a RCRA Inspection at the Facility to evaluate its hazardous waste management practices and compliance. I discussed the objectives of my inspection, and the requirements under RCRA for a Large Quantity Generator (LQG). I asked Ms. Orellana to provide us for review UPR Rio Piedras Campus' manifests (last three years), and land disposal records regarding the handling, transportation, and final disposal of hazardous waste generated, and stored at the campus. I also asked for review the waste analysis plan, weekly inspection records, personnel training requirements, biennial report, waste minimization plan, closure plan, contingency and emergency and preparedness plan, Used Oil manifests, and RCRA air emission requirements under 40 CFR § 265 Subparts AA, BB & CC certification reports.

According to by Ms. Lymari Orellana from the Health, Occupational and Environmental Safety Office (OPASO) stated that UPR Rio Piedras Campus does not have to comply with 40 CFR Part § 265 Subparts AA, BB & CC of RCRA requirements for the managment and control of air emissions of hazardous waste stored in containers since all campus containers had design capacities less than 0.1 m3 (26.4 gallons) in accordance with 40 CFR § 265.1087(b)(1)(i). She added that containers holding volatile organic wastes were provided by Veolia Environmental Services Inc. and they were contained cover and manufactured tested seals in accordance with the Department of Transportation (DOT) (49 CFR 178 - Specifications for Packagings) requirements, and the United Nations (UN) Performance Oriented Packaging Standards. In addition, UPR Rio Piedras Campus' container management practices (transferring, storing, and stacking) are provided to prevent of volatile air emissions in a well vented and controlled storage areas.

Based on a review of electronic manifests, it was estimated that approximately over 2,200 pounds of hazardous waste are generated at the Facility monthly and disposed of with Veolia Environmental Services, Inc. every month. I was told by Ms. Orellana that there were various hazardous waste satellite accumulation areas (SAAs) for the management of hazardous wastes in the academic laboratories. The 90-Day Central Hazardous Waste Storage area which used to house all non-hazardous and hazardous wastes collected at the Campus was discontinued over 10 years ago. Most hazardous waste at the UPR Rio Piedras is generated and stored in satellite accumulation ares which are collected and disposed of the Veolia Environmental Services monthly.

2.1 FACILITY PHYSICAL DESCRIPTION AND OPERATION

The University of Puerto Rico was created by an act of the Legislative Assembly on March 12, 1903, emerging as an outgrowth of the Normal School, which had been established three years earlier to train teachers for the Puerto Rican school system. In 1908, the benefits of the Morill-Nelson declared applicable to the island, forested the rapid growth of the University. Evidence of that growth was the establishment of the College of Liberal Arts at Rio Piedras in 1910 and the College of Agriculture at Rio Piedras in 1911.

The University of Puerto Rico is a well-established and mature institution, with a total enrollment of over 69,000 students. The University consists of the Rio Piedras Campus, the Medical Sciences Campus, and the Rio Piedras Campus, which are dedicated to both undergraduate and graduate education; and the Colleges at Aguadilla, Arecibo, Bayamon, Carolina, Cayey, Humacao, Ponce, and Utuado which provide undergraduate education.

Within the philosophical framework established by the University of Puerto Rico Act, the Rio Piedras Campus directs its efforts towards the development of educated, cultured citizens, capable of critical thinking, and professionally qualified in the fields of social, and natural sciences, humanities, and business administration. They should be able to contribute in an efficient manner to the cultural, social, and economic development of the Puerto Rican and international communities. This process is aimed at endowing their alumni with a strong technical and professional background and instill a strong commitment to Puerto Rico and our hemisphere.

Today, the Rio Piedras Campus of the University of Puerto Rico is a co-educational research center and consists of 12 colleges: the faculties of Education, Humanities, General Studies, Natural Sciences, Social Sciences and Business Administration; and the schools of Architecture, Communication, School of Law, Graduate of Information Sciences and Technology, Graduate of Planning and a Division of Continuing Education and Professional Studies.

According to the 2023-2024 Fiscal Year Annual Report, the University of Puerto Rico - Rio Piedras Campus managed a budget from the general account funds (i.e., Commonwealth Central Government Funds) during last fiscal year of $174.8 million in Campus, and with an enrollment over 12,111 undergraduate and graduate students, and with 3,000 regular staff members and members of the academic education.

2.2 PHYSICAL SETTING

The UPR Rio Piedras Campus is geographically located at latitude 18°24'13.95"N, longitude 66° 2'53.87"W, and has a horizontal geographic extension of approximately 1,080,000 square meters. It is physically located between José C. Barbosa Avenue and Juan Ponce de León Avenue, in the City of Río Piedras in the Municipality of San Juan, capital of Puerto Rico. The site is located at approximately 105 feet above mean sea level. ***Figure 1*** presents the site location on a portion of the US Geological Service (USGS) Topographical Map. ***Figure 2*** presents an aerial photograph of the site. The closest superficial water body is the rio Rio Piedras located approximately 0.71 miles to the southwest of the site (see **ATTACHMENT I)**.

2.3 SOLID AND HAZARDOUS WASTE GENERATION

The UPR Rio Piedras Campus was founded in 1911, and is located on 431 Ponce de Leon Avenue, Rio Piedras, Puerto Rico. Approximately twelve thousand (12,000) students attend the numerous schools that operate at this campus. The UPR-Rio Piedras Campus also houses over three thousand (3,000) full time faculty, and staff personnel. The university covers an area approximately of 262 acres and houses over eighty-one (81) laboratories and Administrative Offices. Along with the traditional academic curricula, UPR Rio Piedras Campus is involved in extensive research activities in a variety of areas including material characteristics, molecular cellular, material science, electrochemistry, ecology, and virology. Additionally, large physical maintenance department supports all Campus' activities.

From a RCRA perspective, hazardous waste is generated from numerous sources throughout the Campus, including the areas listed below and depicted in Figure No. 1 of the UPR Rio Piedras Campus Map.

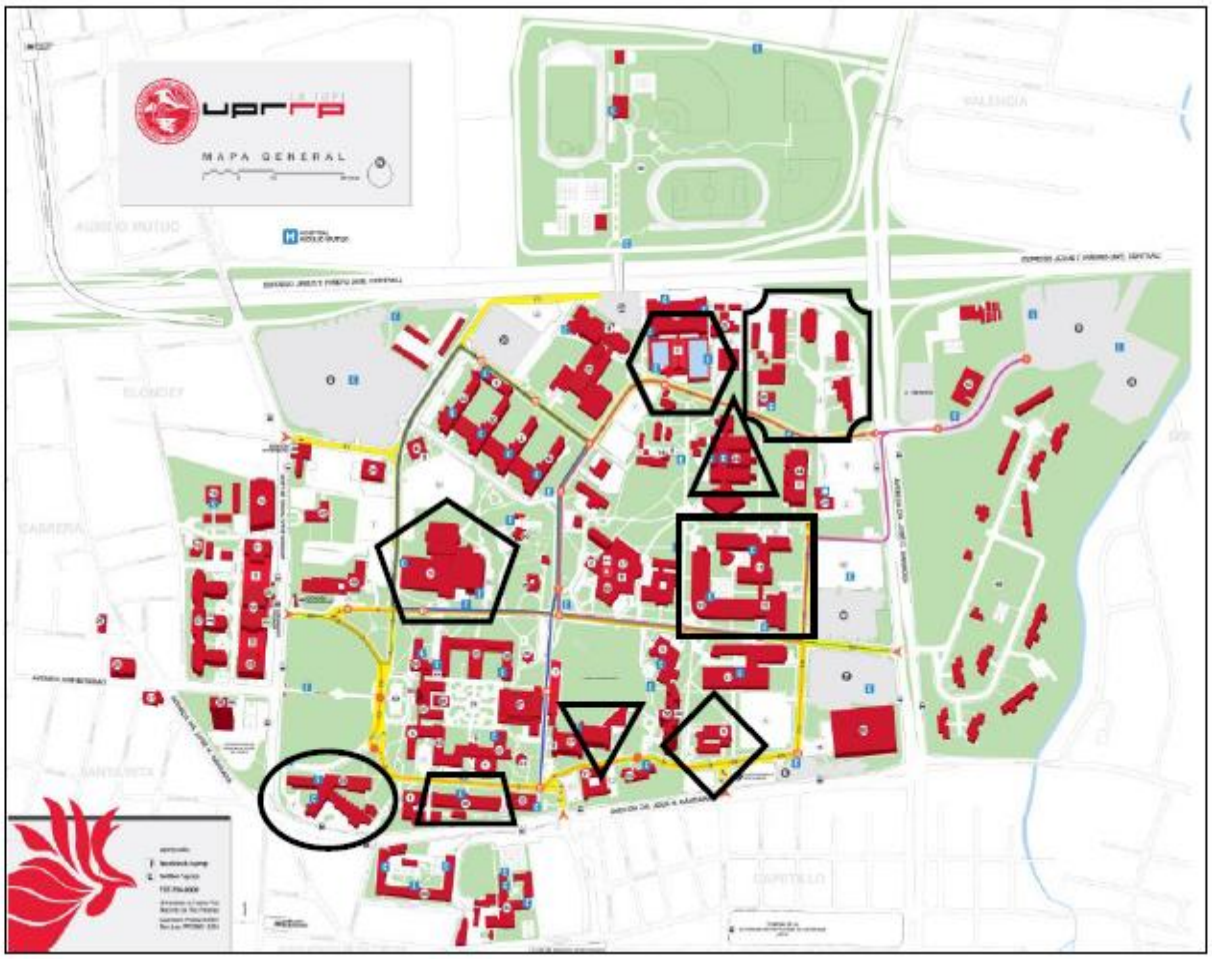
- Education Department
- Humanities Department
- General Studies Department
- Natural Sciences Department
- Social Sciences Department
- Business Administration School
- Architecture School
- Communication School
- School of Law
- Graduate of Information Sciences and Technology
- Graduate of Planning
- Division of Continuing Education and Professional Studies
- Performing Art Department
- Biology Research Laboratories
- Chemistry Research Laboratories
- Investigation & Research Development Centers
- Medical Services Unit
- Printing Department
- Physical Education Department (Swimming Pool Chemical Storage Area)
- Physical and Maintenance Shops

Typically, the primary waste generated and stored at UPR Rio Piedras Campus include corrosives, oxidizers, flammable, poisons, acute hazardous wastes, reactive, waste solvents, compressed gas cylinders, paint waste, and other laboratory chemicals and agricultural (i.e., pesticides) wastes. Hazardous wastes generated from the building maintenance department and vehicles and equipment shop include paint wastes, used oil, coolant, spent degreaser, spent fluorescent lamps, and used batteries. Paint jobs are conducted throughout the campus where is needed by painting shop staff. As

part of the painting operations, thinner is used to clean up paint brushes, and other related equipment. Once the thinner is spent and mixed with paint wastes, it is collected and disposed of as special wastes.

Based upon a review of UPR Rio Piedras Campus' manifest records, it appeared that UPR Rio Piedras Campus is a Small Quantity Generator since it generates over 2,200 pounds of hazardous waste and it is disposed of with Veolia Environmental Services, Inc. every month. On March 2023, it was estimated that approximately 6.471 tons per year of hazardous waste was generated at the campus.

Oher solid wastes generated at the Facility were Universal Waste (UW) associated with the management of spent fluorescent lamps, Ni-Cd batteries, and disposal of unused sanitation product with Veolia Environmental Services. Recyclable materials such as alumnium, cardboard, papel are disposed of with WR Recycling. Other disposal of sanitation, maintenance and housekeeping products are disposed of with Con Wastes at the Toa Baja Municipal Solid Waste Landfill.



1. Edificio Facundo Bueso ⬭ * * *
2. Edificio Julio García Díaz ▱ * * *
3. Edificio Nuevo Edificio Pedagogía ▽
4. Edificio Bellas Artes ◇
5. Biblioteca José M. Lázaro ⬠
6. Facultad de Ciencias Naturales □ * * *
7. Edificio Domingo Marrero Navarro △
8. Oficina para la Conservación de las Instalaciones Universitarias ▯
9. Piscinas ⬡

Figure No. 1- University of Puerto Rico Rio Piedras Campus Map
Site Plans Identifying Risk Areas for Hazardous Materials
Ref. Contingency Plan for Hazardous Waste, June 2024

3 FACILITY WALKTHROUGH (DAY 1 – JUNE 27, 2024)

Mr. Jorge Ramos, Health, Occupational and Environmental Safety Office (OPASO) Director, and Ms. Lymari Orellana, Health, Occupational and Environmental Safety Office (OPASO) Specialist I accompanied me during the Facility walkthrough. At the Facility various university science departments, research centers, physical education department (swimming pool chemical storage area), physical and maintenance shops, warehouses among other administrative offices and supporting units were inspected as described below. The observations for each area are described below. Refer to Appendix 1 for pictures taken during the inspection.

3.1 NATURAL SCIENCES DEPARTMENT BUILDING ("CIENCIAS NATURALES")

This building houses over forty (40) chemical, biological and physical research laboratories, teaching classrooms with cabinets used for the storage of chemical substances, chemical storage areas, and the storage room for the accumulation of chemical hazardous and toxic materials. This building also houses numerous hazardous waste satellite accumulation areas managed under 40 CFR § 262.15 – "Satellite Accumulation Area Regulations for Small and Large Quantity Generators." Mr. Ramos and Ms. Orellana, EH&S Officers, both from OPASO served as the UPR Rio Piedras Campus' representatives and escorts.

3.1.1 Organic Chemistry Laboratory CN-101

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed the following at this Satellite Accumulation Area (SAA):

i. One (1) 5-gallon white container with "Organic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001" and "D002" (i.e., ignitable, and corrosive) and with its hazard communication pictograms "Flammable and Corrosive Liquids, "as required by RCRA regulations (see **Picture No. 1**).
ii. One (1) 5-gallon white container with "Inorganic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and but not with its hazard communication pictogram "Flammable Liquids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 2**).
iii. One (1) 5-gallon white container with "Spent Non-Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001 (ignitable), D035 (Methyl Ethyl Ketone), F003 and F005 (Non-Halogenated Solvents) and with its hazard communication pictogram "Flammable Liquids, "as required by RCRA regulations (see **Picture No. 3**).
iv. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 4**).

v. One (1) 1-liter white container with "Heavy Metals Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D002 (Corrosive), D005 (Barium), D006 (Cadmium), D011 (Silver) and with its hazard communication pictogram "Corrosive Liquids, "as required by RCRA regulations (see **Picture No. 5**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

3.1.2 Organic Chemistry Laboratory CN-102

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed five (5) 5-gallon containers (see **Picture No. 6**) at this Satellite Accumulation Area (SAA) as follows:

i. One (1) 5-gallon white container with "Spent Non-Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001 (ignitable), D035 (Methyl Ethyl Ketone), F003 and F005 (Non-Halogenated Solvents) and with its hazard communication pictogram "Flammable Liquids, "as required by RCRA regulations.
ii. One (1) 5-gallon white container with "Neutralization Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and with its hazard communication pictogram "Corrosive Liquids, "as required by RCRA regulations (see **Picture No. 7**).
iii. One (1) 5-gallon white container with "Organic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001" and "D002" (i.e., ignitable, and corrosive) and with its hazard communication pictograms "Flammable and Corrosive Liquids, "as required by RCRA regulations.
iv. One (1) 5-gallon white container with "Inorganic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and with its hazard communication pictogram "Flammable Liquids," as required by RCRA regulations (see **Picture No. 8**).
v. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

3.1.3 Organic Chemistry Laboratory CN-104

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed five (5) 5-gallon containers (see **Picture No. 9**) at this Satellite Accumulation Area (SAA) as follows:

i. One (1) 5-gallon white container with "Spent Non-Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001 (ignitable), D035 (Methyl Ethyl Ketone), F003 and F005 (Non-Halogenated Solvents) and with its hazard communication pictogram "Flammable Liquids, "as required by RCRA regulations.
ii. One (1) 5-gallon white container with "Organic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001" and "D002" (i.e., ignitable, and corrosive) and with its hazard communication pictograms "Flammable and Corrosive Liquids, "as required by RCRA regulations (see **Picture No. 10**).
iii. One (1) 5-gallon white container with "Inorganic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and with its hazard communication pictogram "Flammable Liquids," as required by RCRA regulations.
iv. One (1) 5-gallon white container with "Neutralization Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and with its hazard communication pictogram "Corrosive Liquids, "as required by RCRA regulations.
v. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

3.1.4 General Chemistry Laboratory CN-204-A

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed seven (7) 5-gallon and 1-liter containers (see **Picture No. 11**) at this Satellite Accumulation Area (SAA) as follows:

i. One (1) 5-gallon white container with "Inorganic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and with its hazard communication pictogram "Flammable Liquids," as required by RCRA regulations.
ii. One (1) 5-gallon white container with "Neutralization Solution Wastes," labeled with the

words “Hazardous Waste,” and identified with RCRA hazardous waste code “D002” (i.e., corrosive) and with its hazard communication pictogram “Corrosive Liquids, “as required by RCRA regulations.

iii. One (1) 5-gallon white container with “Organic Aqueous Wastes,” labeled with the words “Hazardous Waste,” and identified with RCRA hazardous waste codes “D001” and “D002” (i.e., ignitable, and corrosive) and with its hazard communication pictograms “Flammable and Corrosive Liquids, “as required by RCRA regulations.

iv. One (1) 5-gallon white container with “Heavy Metals Aqueous Solution Wastes,” labeled with the words “Hazardous Waste,” and identified with RCRA hazardous waste codes “D002 (Corrosive), D005 (Barium), D006 (Cadmium), D011 (Silver) and without its hazard communication pictogram “Corrosive Liquids, “as required by RCRA regulations (**No Pictogram**) (see **Picture No. 12**).

v. One (1) 5-gallon white container with “Solid Wastes” contaminated with laboratory silica trash and desiccant” labeled with the words “Hazardous Waste,” and identified with RCRA hazardous waste code “F003” (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram “Flammable Solids, “as required by RCRA regulations (**No Pictogram**) (see **Picture No. 12**).

vi. Two (2) 1-liter white containers with “Spent Non-Halogenated Solvent Wastes,” labeled with the words “Hazardous Waste,” and identified with RCRA hazardous waste codes “D001 (ignitable), D035 (Methyl Ethyl Ketone), F003 and F005 (Non-Halogenated Solvents) but without its hazard communication pictograms “Flammable Liquids, “as required by RCRA regulations (**No Pictogram**) (see **Picture No. 13**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

3.1.5 General Chemistry Laboratory CN-204-B

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed seven (7) 5-gallon and 1-liter containers (see **Picture No. 14**) at this Satellite Accumulation Area (SAA) as follows:

i. One (1) 5-gallon white container with “Inorganic Aqueous Wastes,” labeled with the words “Hazardous Waste,” and identified with RCRA hazardous waste code “D002” (i.e., corrosive) and with its hazard communication pictogram “Flammable Liquids,” as required by RCRA regulations.

ii. One (1) 5-gallon white container with “Neutralization Solution Wastes,” labeled with the words “Hazardous Waste,” and identified with RCRA hazardous waste code “D002” (i.e., corrosive) and with its hazard communication pictogram “Corrosive Liquids, “as required by RCRA regulations.

iii. One (1) 5-gallon white container with “Organic Aqueous Wastes,” labeled with the words

"Hazardous Waste," and identified with RCRA hazardous waste codes "D001" and "D002" (i.e., ignitable, and corrosive) and without its hazard communication pictograms "Flammable and Corrosive Liquids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 14**).

iv. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 14**).

v. One (1) 1-liter white containers with "Spent Non-Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001 (ignitable), D035 (Methyl Ethyl Ketone), F003 and F005 (Non-Halogenated Solvents) but without its hazard communication pictograms "Flammable Liquids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 15**).

vi. One (1) 1-liter white container with "Spent Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001 (ignitable) D002 (corrosive), D021 (Chlorobenzene), D022 (Chloroform), F002, F003 and F005 (Halogenated Solvents) and without its hazard communication pictogram "Flammable Liquids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 15**).

vii. One (1) 1-Liter white container with "Heavy Metals Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D002 (Corrosive), D005 (Barium), D006 (Cadmium), D011 (Silver) and without its hazard communication pictogram "Corrosive Liquids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 15**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

3.1.6 General Chemistry Laboratory CN-203-A

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed six (6) 5-gallon and 1-liter containers (see **Picture No. 16**) at this Satellite Accumulation Area (SAA) as follows:

i. One (1) 5-gallon white container with "Inorganic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and with its hazard communication pictogram "Flammable Liquids," as required by RCRA regulations.

ii. One (1) 5-gallon white container with "Organic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001" and "D002" (i.e., ignitable, and corrosive) and with its hazard communication pictograms "Flammable and Corrosive Liquids, "as required by RCRA regulations.

iii. One (1) 5-gallon white container with "Neutralization Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and with its hazard communication pictogram "Corrosive Liquids, "as required by RCRA regulations.
iv. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 16**).
v. One (1) 1-liter white containers with "Spent Non-Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001 (ignitable), D035 (Methyl Ethyl Ketone), F003 and F005 (Non-Halogenated Solvents) but without its hazard communication pictograms "Flammable Liquids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 16**).
vi. One (1) 1-liter white container with "Spent Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001 (ignitable) D002 (corrosive), D021 (Chlorobenzene), D022 (Chloroform), F002, F003 and F005 (Halogenated Solvents) and without its hazard communication pictogram "Flammable Liquids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 16**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

3.1.7 General Chemistry Laboratory CN-203-B

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed seven (7) 5-gallon and 1-liter containers (see **Picture No. 17**) at this Satellite Accumulation Area (SAA) as follows:

i. One (1) 5-gallon white container with "Organic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001" and "D002" (i.e., ignitable, and corrosive) and with its hazard communication pictograms "Flammable and Corrosive Liquids, "as required by RCRA regulations.
ii. One (1) 5-gallon white container with "Neutralization Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and with its hazard communication pictogram "Corrosive Liquids, "as required by RCRA regulations.
iii. One (1) 5-gallon white container with "Inorganic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and with its hazard communication pictogram "Flammable Liquids," as required by RCRA regulations.

iv. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 17**).
v. One (1) 1-liter white containers with "Spent Non-Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001 (ignitable), D035 (Methyl Ethyl Ketone), F003 and F005 (Non-Halogenated Solvents) but without its hazard communication pictograms "Flammable Liquids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 17**).
vi. One (1) 1-liter white container with "Spent Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001 (ignitable) D002 (corrosive), D021 (Chlorobenzene), D022 (Chloroform), F002, F003 and F005 (Halogenated Solvents) and without its hazard communication pictogram "Flammable Liquids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 17**).
vii. One (1) 1-Liter white container with "Heavy Metals Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D002 (Corrosive), D005 (Barium), D006 (Cadmium), D011 (Silver) and without its hazard communication pictogram "Corrosive Liquids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 17**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

3.1.8 Instrumental Chemistry Laboratory CN-303

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed four (4) 5-gallon containers (see **Picture No. 18**) at this Satellite Accumulation Area (SAA) as follows:

i. One (1) 5-gallon white container with "Organic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001" and "D002" (i.e., ignitable, and corrosive) and with its hazard communication pictograms "Flammable and Corrosive Liquids, "as required by RCRA regulations.
ii. One (1) 5-gallon white container with "Neutralization Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and with its hazard communication pictogram "Corrosive Liquids, "as required by RCRA regulations.
iii. One (1) 5-gallon white container with "Inorganic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and with its hazard communication pictogram "Flammable Liquids," as required by RCRA regulations.

iv. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 18**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

EPA indicated that storage of chemical reagents at laboratory cabinets was conducted without following any safety protocols or compatibility characteristics of the reagents failing to minimize the possibility of a fire, explosion, or any chemical violent reaction. EPA also indicated that chemical reagents did not appear to be segregated by compatibility, and that shelving was not self-contained to prevent chemical leaks or spillage from incompatible waste containers (see **Pictures No. 19** and **No. 20**). Ms. Orellana stated that UPR Rio Piedras uses the "Flinn Compatible Chemical Family Storage System," which was developed for classifying and safely storing chemicals recommended by the National Institute for Occupational Safety and Health (NIOSH) in the "Academic Chemistry Laboratory Safety Guide" as a suggested arrangement for segregating chemicals into compatible families. It was determined that the storage cabinets for Organics and Inorganics reagents would be revised as per characteristics and compatibility properties.

3.1.9 Physical Chemistry Laboratory CN-301

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed six (6) 5-gallon containers (see **Picture No. 21**) at this Satellite Accumulation Area (SAA) as follows:

i. One (1) 5-gallon white container with "Organic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001" and "D002" (i.e., ignitable, and corrosive) and with its hazard communication pictograms "Flammable and Corrosive Liquids, "as required by RCRA regulations.
ii. One (1) 5-gallon white container with "Inorganic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and with its hazard communication pictogram "Flammable Liquids," as required by RCRA regulations.
iii. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 21**).
iv. One (1) 1-liter white containers with "Spent Non-Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001

(ignitable), D035 (Methyl Ethyl Ketone), F003 and F005 (Non-Halogenated Solvents) but without its hazard communication pictograms "Flammable Liquids, "as required by RCRA regulations.

v. One (1) 1-liter white container with "Spent Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001 (ignitable) D002 (corrosive), D021 (Chlorobenzene), D022 (Chloroform), F002, F003 and F005 (Halogenated Solvents) and with its hazard communication pictogram "Flammable Liquids, "as required by RCRA regulations.
vi. One (1) 1-Liter white container with "Heavy Metals Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D002 (Corrosive), D005 (Barium), D006 (Cadmium), D011 (Silver) and without its hazard communication pictogram "Corrosive Liquids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 21**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

3.1.10 Microbiology Laboratory CN-342

EPA RCRA inspector proceeded to inspect this academic laboratory area. Observations at this area rendered no concerns regarding the generation or management of unwanted waste or hazardous wastes.

3.1.11 General Biology Laboratory CN-234

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed two (2) 5-gallon containers (see **Picture No. 22**) at this Satellite Accumulation Area (SAA) as follows:

i. One (1) 5-gallon white container with "Formaldehyde with Methanol Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with a RCRA hazardous waste code "D001" (i.e., ignitable), and with its hazard communication pictograms "Flammable Liquids," as required by RCRA regulations.
ii. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 22**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

3.1.12 General Biology Laboratory CN-236

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed two (2) 5-gallon containers at this Satellite Accumulation Area (SAA) as follows:

i. One (1) 5-gallon white container with "Formaldehyde with Methanol Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with a RCRA hazardous waste code "D001" (i.e., ignitable), and with its hazard communication pictogram "Flammable Liquids," as required by RCRA regulations (see **Picture No. 23**).
ii. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 24**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

3.1.13 Environmental Science Laboratory CN-118

EPA RCRA inspector proceeded to inspect this academic laboratory area. All hazardous wastes were decommissioned and disposed of since the laboratory was under construction for a new research laboratory. Observations at this area rendered no concerns regarding the generation or management of unwanted waste or hazardous wastes.

3.1.14 Environmental Analytical Chemistry Laboratory CN-119

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed two (2) 5-gallon containers at this Satellite Accumulation Area (SAA) as follows:

i. Two (2) 5-gallon white container with "Organic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001" and "D002" (i.e., ignitable, and corrosive) and with its hazard communication pictograms "Flammable and Corrosive Liquids, "as required by RCRA regulations.

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content at the time of the Inspection.

3.1.15 Nanotechnology Chemistry Laboratory CN-115

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed seven (7) 5-gallon containers at this Satellite Accumulation Area (SAA) as follows:

i. One (1) 5-gallon white container with “Organic Aqueous Wastes,” labeled with the words “Hazardous Waste,” and identified with RCRA hazardous waste codes “D001” and “D002” (i.e., ignitable, and corrosive) and with its hazard communication pictograms “Flammable and Corrosive Liquids, “as required by RCRA regulations.
ii. One (1) 5-gallon white container with “Neutralization Solution Wastes,” labeled with the words “Hazardous Waste,” and identified with RCRA hazardous waste code “D002” (i.e., corrosive) and with its hazard communication pictogram “Corrosive Liquids, “as required by RCRA regulations.
iii. One (1) 5-gallon white container with “Inorganic Aqueous Wastes,” labeled with the words “Hazardous Waste,” and identified with RCRA hazardous waste code “D002” (i.e., corrosive) and with its hazard communication pictogram “Flammable Liquids,” as required by RCRA regulations.
iv. One (1) 5-gallon white container with “Solid Wastes” contaminated with laboratory silica trash and desiccant” labeled with the words “Hazardous Waste,” and identified with RCRA hazardous waste code “F003” (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram “Flammable Solids, “as required by RCRA regulations (**No Pictogram**).
v. One (1) 5-gallon white containers with “Spent Non-Halogenated Solvent Wastes,” labeled with the words “Hazardous Waste,” and identified with RCRA hazardous waste codes “D001 (ignitable), D035 (Methyl Ethyl Ketone), F003 and F005 (Non-Halogenated Solvents) but without its hazard communication pictograms “Flammable Liquids, “as required by RCRA regulations (**No Pictogram**).
vi. One (1) 5-gallon white container with “Spent Halogenated Solvent Wastes,” labeled with the words “Hazardous Waste,” and identified with RCRA hazardous waste codes “D001 (ignitable) D002 (corrosive), D021 (Chlorobenzene), D022 (Chloroform), F002, F003 and F005 (Halogenated Solvents) and without its hazard communication pictogram “Flammable Liquids, “as required by RCRA regulations (**No Pictogram**).
vii. One (1) 5-gallon white container with “Heavy Metals Aqueous Solution Wastes,” labeled with the words “Hazardous Waste,” and identified with RCRA hazardous waste codes “D002 (Corrosive), D005 (Barium), D006 (Cadmium), D011 (Silver) and without its hazard communication pictogram “Corrosive Liquids, “as required by RCRA regulations (**No Pictogram**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

3.2 CHEMISTRY STORAGE WAREHOUSE AREA CN-006

EPA RCRA inspector proceeded to inspect this Chemistry Storage Warehouse area. Ms. Idenisse Rivera, Laboratory Technician, served as the UPR Rio Piedras Campus's representative and escort. Ms. Rivera emphasized that UPR Rio Piedras uses the “Flinn Compatible Chemical Family Storage System,” which

was developed for classifying and safely storing chemicals recommended by the National Institute for Occupational Safety and Health (NIOSH) in the "Academic Chemistry Laboratory Safety Guide." As suggested by NIOSH chemical reagents are arranged and segregated by chemical compatible families.

The EPA Inspector observed the following at this location:

i. The warehouse stores numerous chemical reagents to supply the general chemistry, analytical chemistry, physicochemical, organic, inorganic, environmental, biology, and chemical instrumental laboratories, teaching classrooms with cabinets used for temporary storage of chemical reagents, and research and development laboratories managed under the Flinn Laboratory Management Plan.
ii. The Organic Chemical Reagent section has multiple cabinets with numerous organic reagent materials, which many are new and dedicated for laboratory experiments (see **Picture No. 25**). There were also some old, discarded or not-in-use chemical reagents generated at or returned from the laboratories that were identified and inventoried for final disposal as Laboratory Pack. In addition, the storage of these "Chemical Reagents" was conducted following Flinn's safety protocols and compatibility characteristics (Flammable, Corrosives, Reactive and Toxics) to minimize the possibility of a fire, explosion, or any chemical violent reaction.
iii. The Inorganic Chemical Reagent section has multiple cabinets with numerous inorganic reagent materials, which many are new and dedicated for laboratory experiments (see **Picture No. 26**). There were also some old, discarded or not-in-use chemical reagents generated at or returned from the laboratories that were identified and inventoried for final disposal as Laboratory Pack. The storage of these "Chemical Reagents" was conducted following Flinn's safety protocols and compatibility characteristics (Flammable, Corrosives, Reactive and Toxics) to minimize the possibility of a fire, explosion, or any chemical violent reaction.

Observations at this area rendered no concerns regarding the generation or management of unwanted waste or hazardous wastes.

3.3 BUILDINGS AND LAND DEPARTMENT (OFICINA PARA LA CONSERVACIÓN DE LAS INSTALACIONES UNIVERSITARIAS-OCIU)

The Buildings and Land Department (OCIU) houses the carpentry, wood & cabinets shop, steel metal shop, plumbing, air conditioning repair shop, painting shop, electrical and light repair shop, light automobile mechanic services, and physical maintenance and cleaning departments which supports all Campus' activities. This building also houses various warehouses for raw material products and equipment replacement parts. Ms. Lymari Orellana from the Health, Occupational and Environmental Safety Office, served as the UPR Rio Piedras Campus' representative.

3.3.1 Universal Waste Storage Area

EPA RCRA inspector proceeded to inspect the Universal Waste (UW) Storage Area which stores spent fluorescent-lamps, batteries, ballasts, high-density halogen bulbs, sodium lamps, LED light cards, electrical pig tails, and emergency flooding light bulbs for the lighting maintenance of Campus Buildings and open

areas. The universal wastes are stored in a stainless-steel outdoor trailer. Universal wastes that were stored in this area were mainly universal waste – lamps and universal waste – batteries. The universal waste lamps stored in this area contained non-green tipped and green-tipped bulbs, however majority of the bulbs were non-green tipped.

The EPA Inspectors observed the following at this location:

i. Two (2) 55-gallon black steel drums without lids (open) containing "Ballast" which were removed from aluminum frames. None of the drums were clearly labeled with the words, "Universal Waste-Mercury Containing Equipment," or dated (see **Picture No. 27**).
ii. Two (2) 2'- Dia cylindrical cardboard "open" packing over twenty (20) 4-foot spent fluorescent lamps, both open and labeled with the words, "Universal Waste," and dated with their accumulation start dates of June 17, and June 18, 2024, respectively (see **Picture No. 28**).
iii. One (1) square cardboard box (1'x1'x 2') "open" packing over forty (40) 2-foot spent fluorescent lamps labeled with the words, "Universal Waste," and dated with their accumulation start dates of June 17, 2024 (see **Picture No. 29**).
iv. Two (2) square cardboard boxes (1'x1'x 2') "open" packing over twenty (20) spent spiral led light bulbs and curved led bulbs labeled with the words, "Universal Waste," nor dated with their accumulation start dates (see **Picture No. 30**).
v. Three (3) square cardboard box (1'x1'x 2') "open" packing over ten (10) spent high-density halogen bulbs labeled with the words, "Universal Waste," nor dated with their accumulation start dates (see **Picture No. 31**).

EPA Inspector stated that any spent fluorescent lamp that is broken or shows evidence of breakage, leakage, or damage that could cause the release of mercury or other hazardous constituents to the environment must immediately be cleaned up and placed in containers pursuant to 40 CFR § 273.13(d)(2). We also stated that mercury-containing ballast must be managed in a way that prevents releases of any universal waste or component of a universal waste to the environment and must be placed in a container as a universal waste mercury-containing equipment that shows evidence of leakage, spillage, or damage that could cause leakage must immediately be cleaned up and placed in appropriate containers pursuant to 40 CFR §273.13(c)(1).

In addition, EPA Inspector stated that each drum containing mercury-containing equipment must be labeled or marked clearly with the words, "Universal Waste-Mercury Containing Equipment," "Waste Mercury-Containing Equipment," or "Used Mercury-Containing Equipment." Similarly, each lamp or a container or package in which lamps are contained must be labeled or marked clearly with the words, "Universal Waste-Lamp(s)," or "Waste Lamp(s)," or "Used Lamp(s)."

At the time of the RCRA Inspection, there were various "open" drums, cardboard boxes packing fluorescent lamps and high-density halide bulbs without control or containment, showing evidence of possibly breakage, leakage, and damage that caused releases of mercury or other hazardous constituents to the area at the Universal Waste Storage Area, not managed as per 40 CFR § 273.13(d)(2).

3.3.2 Mechanic Shop

Light mechanic repairs and preventive maintenance to vehicles fleet is performed at this Mechanic Shop. Services at this Mechanic Shop mainly include used oil and spent oil filter changes, and batteries' replacement, among other light repair jobs. Oil and filter changes are part of the vehicle's preventive maintenance program. Used oil is placed in 55-gallon drums and disposed of by a local used oil collector company (i.e., Veolia Environmental Services). At the time of the Inspection, EPA Inspector met with Mr. Ruben Rodriguez, Shop Supervisor. Ms. Orellana informed that the quantity of used oil generated at the facility is relatively small and depends on the numbers of units in service. Used Oil impacted materials are disposed of as domestic garbage. Mr. Orellana indicated that the quantity of used oil impacted materials generated at the facility was unknown. No hazardous waste determination has been made on the used oil impacted materials before disposal of and mixed with their solid waste. Approximately ten (10) used oil filters are generated from vehicles' preventive maintenance program monthly. Used oil filters are not punctured and/or crushed, but they are hot drained between 24 - 48 hours before been disposed of with the local used oil collector company.

EPA RCRA inspector proceeded to inspect this Mechanic Shop Area and observed the following at this location:

i. Two (2) 55-gallon black drum closed with used oil, not marked with the words, "Used Oil" (see **Picture No. 32**).
ii. One (1) 55-gallon blue drum open on top with spent used oil filters impregnated with used oil not marked with the words, "Used Oil."
iii. One (1) yellow drum funnel with used oil residues not marked with the words, "Used Oil" (see **Picture No. 32**).

3.3.3 Carpentry Wood Shop

The Carpentry Wood Shop provides carpentry jobs and maintenance to Campus Buildings and open areas. The paints, thinners and aerosol cans present in this area were still in use. There was no hazardous waste present at the time of the inspection. The shop operator stated that paint brushes are cleaned with thinner, the thinner waste is collected in 5-gallon containers and disposed of as “Hazardous Wastes,” by OPASO officials and not dumped down the drain. Observations at this area rendered no concerns regarding the generation or management of unwanted waste or hazardous wastes.

3.3.4 Plumbing Shop

The Plumbing Shop provides plumbing jobs and maintenance to Campus Buildings and open areas. At the time of the Inspection, EPA Inspector met with Mr. Efrain Castro, Shop Supervisor. The shop is used to repair University plumbing and store supplies needed for repairs. In the back of the shop in a storage area there a cabinet storing various bottles of Dry Drain Treatment, and Liquid Drain Opener all still in use. Observations at this area rendered no concerns regarding the generation or management of unwanted waste or hazardous wastes.

3.3.5 Welding Shop

The Welding Shop provides iron welding jobs and maintenance to Campus Buildings and open areas. At the time of the Inspection, EPA Inspector met with Mr. Jose Pabón, Shop Supervisor. There were various gas cylinders outside that were properly restrained, as a best management practice and safety protocols. A 5-gallon white container with mineral spirits was observed in a tray area. Mr. Pabón stated that he uses the mineral spirits to clean parts, components, and tools; the cleaning process is done by hand over the sink, the residual waste gets collected in the container and later disposed of as "Hazardous Wastes," by OPASO officials and not washed down the sink (see **Picture No. 33**). There was also one (1) 1-gallon pail with wallboard compound to be discarded as "Hazardous Wastes," and pick up by OPASSO officials (see **Picture No. 34**). Observations at this area rendered no concerns regarding the generation or management of unwanted waste or hazardous wastes.

3.4 GENERAL STUDIES DEPARTMENT BUILDING ("DR. DOMINGO MARRERO NAVARRO - DMN)

This building houses over ten (10) general studies laboratories in the areas of physical science, which integrates chemistry, biology, physics and earth sciences, teaching classrooms with cabinets used for the storage of chemical substances, chemical storage areas, and the storage room for the accumulation of chemical hazardous and toxic materials. This building also houses numerous hazardous waste satellite accumulation areas managed under 40 CFR § 262.15 – "Satellite Accumulation Area Regulations for Small and Large Quantity Generators." Ms. Orellana, EH&S Officer, from OPASO and Mr. German Gomez, Laboratory Technician, served as the UPR Rio Piedras Campus' representatives and escorts.

3.4.1 Physical Science Laboratory DMN-411

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed the following at this Satellite Accumulation Area (SAA):

i. Two (2) 5-gallon white containers with "Heavy Metals Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D002 (Corrosive), D005 (Barium), D006 (Cadmium), D011 (Silver) and with its hazard communication pictogram "Corrosive Liquids," as required by RCRA regulations. However, one of the containers did not have posted its hazard communication pictogram (**No Pictogram**) (see **Picture No. 35**).
ii. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 36**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential

releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

3.4.2 Physical Science Laboratory DMN-416

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed the following at this Satellite Accumulation Area (SAA):

i. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 37**).
ii. One (1) 1-Liter white container with "Heavy Metals Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and identified as Cupper Sulfate hazardous waste solution. The container was not properly identified with its hazard communication pictogram "Corrosive Liquids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 38**).
iii. One (1) 1-Liter white container with "Heavy Metals Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and identified as Cupper Sulfate, Iron and Acetic Acid hazardous waste solution. The container was not properly identified with its hazard communication pictogram "Corrosive Liquids," as required by RCRA regulations (**No Pictogram**) (see **Picture No. 38**).
iv. One (1) 1-Liter white container with "Heavy Metals Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and identified as Cupper Oxide hazardous waste solution. The container was not properly identified with its hazard communication pictogram "Corrosive Liquids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 38**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

3.4.3 Physical Science Laboratory DMN-412 (Chemical Storage Cabinet Area)

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed the following at this Satellite Accumulation Area (SAA):

i. One (1) 5-gallon white container with "Heavy Metals Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D002 (Corrosive), D005 (Barium), D006 (Cadmium), D011 (Silver) and with its hazard communication pictogram "Corrosive Liquids," as required by RCRA regulations. However, one of the containers did not have posted its hazard communication pictogram (**No Pictogram**) (see **Picture No. 39**).

ii. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 39**).

iii. At this laboratory the following chemical reagents were stored in a blue cabinet identified as "Corrosive," and included hydrochloric acid, acetic acid anhydrous, sulfuric acid, acetic acid glacial, iron oxide, silicon tetrachloride, tetrachlorosilane, tetraethyl orthosilicate (i.e., a combustible reagent and can be ignited by potential ignition sources) among other unknown corrosive solvents. Some bottles of acid, flammable and reactive solvents were stored together and seemed very old, very dry, and potentially unstable; the bottles also had leaking plastic lids, contained moisture, labels vanished, which introduced the possibility of violent chemical reaction, fumes generation and potential explosion. EPA Inspector stated that Acetic Anhydride was not compatible with Hydrochloric Acid and should not be stored together where they can be inadvertently mixed or where a spill or leak can cause danger. (see **Picture No. 40**).

iv. Other chemical reagents were stored in a yellow cabinet identified as "Flammable," and included Methanol, Ethyl Alcohol, Acetone, Formaldehyde (i.e., vapor from formalin solution is flammable and an explosion hazard when exposed to flame or heat) along with other oils and Magnesium Silicone ("Non-Flammable") (see **Picture No. 41**).

v. At this laboratory the following chemical reagents were found stored in a black cabinet including strontium choride (toxic and corrosive), arsenic acid (corrosive and very toxic), sodium hydroxide (strong base), potassium chloride (toxic), and ammonium sulfate (i.e., a toxic substance that may decompose upon heating to produce corrosive and/or toxic fumes if accidently mixed with oxidizers like potassium chloride, potassium nitrate there is an explosion hazard during fire) among many other chemical reagents stored together in an incompatible manner where they can be inadvertently mixed or where a spill or leak can cause danger or explosion (see **Picture No. 42**).

EPA Inspector noted that containers were not in good conditions or properly sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection. In addition, EPA Inspector indicated that the storage of chemical reagents at laboratory cabinets was conducted without following any safety protocols or compatibility characteristics of the reagents failing to minimize the possibility of a fire, explosion, or any chemical violent reaction.

3.4.4 Physical Science Laboratory DMN-415 (Physics Storage Warehouse Area)

EPA RCRA inspector proceeded to inspect this academic laboratory area. Observations at this area rendered no concerns regarding the generation or management of unwanted waste or hazardous wastes.

3.4.5 Physical Science Laboratory DMN-414

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed the following at this Satellite Accumulation Area (SAA):

i. One (1) 5-gallon white container with "Heavy Metals Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D002 (Corrosive), D005 (Barium), D006 (Cadmium), D011 (Silver) and with its hazard communication pictogram "Corrosive Liquids," as required by RCRA regulations (see **Picture No. 43**).
ii. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 43**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

3.4.6 Physical Science Laboratory DMN-413

EPA RCRA inspector proceeded to inspect this academic laboratory area. The EPA Inspector observed the following at this Satellite Accumulation Area (SAA):

i. One (1) 5-gallon white container with "Heavy Metals Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D002 (Corrosive), D005 (Barium), D006 (Cadmium), D011 (Silver) and with its hazard communication pictogram "Corrosive Liquids," as required by RCRA regulations (see **Picture No. 44**).
ii. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 44**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

3.4.7 Biological Science Laboratory DMN-423-B

EPA RCRA inspector proceeded to inspect this academic laboratory area. At the time of the Inspection,

EPA Inspector met with Mr. Julio Iglesias, Laboratory Technician. The EPA Inspector observed the following at this Satellite Accumulation Area (SAA):

i. One (1) 5-gallon white container with "Ethidium Bromide Gel Wastes," labeled with the words "Hazardous Waste," and not identified with its RCRA hazardous waste code nor its hazard communication pictogram as required by RCRA regulations (**No Pictogram**) **(**see **Picture No. 45**).
ii. One (1) 5-gallon white container with "Ethidium Bromide Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and not identified with its RCRA hazardous waste code nor its hazard communication pictogram as required by RCRA regulations (**No Pictogram**) **(**see **Picture No. 46**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

3.5 BIOLOGY RESEARCH DEPARTMENT (DR. JULIO GARCÍA DÍAZ – JGD)

The Biology Building has two (2) stories and fifteen (15) investigation research laboratories. Ms. Lymari Orellana served as the UPR Rio Piedras Biology Department' representative and escort.

3.5.1 Molecular Cellular Research Laboratory JGD-220

EPA RCRA inspector proceeded to inspect this academic laboratory area. At the time of the Inspection, EPA Inspector met with Dr. Jose Garcia Arrarás, Director of the Molecular Cellular Research Laboratory. The EPA Inspector observed the following at this Satellite Accumulation Area (SAA):

i. One (1) 5-gallon white container with "Formaldehyde with Methanol Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001" (Ignitable) and "F003" (Non-Halogenated Solvents), and with its hazard communication pictogram "Flammable Liquids," as required by RCRA regulations (see **Picture No. 47**).
ii. One (1) 5-gallon white container with "Dimethyl Sulfide, Ethanol, Dimethyl Sulfoxide, and Picric Acid," labeled with the words "Hazardous Waste," and not identified with its RCRA hazardous waste code nor its hazard communication pictogram as required by RCRA regulations (**No Pictogram**) (see **Picture No. 48**).
iii. One (1) 5-gallon white container with "Formamide and Paraformaldehyde Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with its RCRA hazardous waste code "F003" (Non-Halogenated Solvents), but not its hazard communication pictogram as required by RCRA regulations (**No Pictogram**) (see **Picture No. 49**).
iv. One (1) 5-gallon white container with "Silver Nitrate," labeled with the words "Hazardous Waste," and not identified with its RCRA hazardous waste code nor its hazard communication

pictogram as required by RCRA regulations (**No Pictogram**) (see **Picture No. 50**).

v. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 51**).

vi. One (1) 5-gallon white container with "Solid Wastes - Trizol" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was not properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 52**).

vii. One (1) 5-gallon white container with "Laminillas - Microscope Slides," labeled with the words "Hazardous Waste," and not identified with its RCRA hazardous waste code nor its hazard communication pictogram as required by RCRA regulations (**No Pictogram**) (see **Picture No. 53**).

viii. At this laboratory the following chemical reagents were stored together inside a hood cabinet including various bottles of hydrochloric acid "Corrosive," acetic acid anhydrous and glacial, and an expired picric acid "Danger" bottle. EPA Inspector stated that Acetic Anhydride (Glacial) was not compatible with Hydrochloric Acid and should not be stored together where they can be inadvertently mixed or where a spill or leak can cause danger (see **Picture No. 54**).

ix. As indicated by EPA Inspector, picric acid (2-hydroxy-1,3,5-trinitrobenzene, CAS Number 88-89-1) can be a useful laboratory reagent; however, dry picric acid is a shock-sensitive explosive capable of releasing energy on a level like dynamite. As observed by EPA Inspector, the expired picric acid was surrounded by various corrosive such as acetic acid anhydrous and/or glacial acid, hydrochloric acid among other reactive reagents. Although, the picric acid was not solidified, but expired, it was stored without following any safety protocols or compatibility characteristics of the reagents failing to minimize the possibility of a fire, explosion, or any chemical violent reaction (see **Picture No. 55**).

It was determined by EPA Inspector that the expired picric acid represented a potential of fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. As an immediate response, Ms. Lymari Orellana from OPASO requested quick respond quotation from Veolia Environmental Services for the removal and proper disposal of the expired Picric Acid since would be no longer used in the laboratory. The expired Picric Acid was removed by Veolia Environmental Services next morning under an emergency respond action (Manifest 002383243 VES) (see **Picture No. 56**).

In general, EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

4 FACILITY WALKTHROUGH (DAY 2 – JUNE 28, 2024)

4.1 PESTICIDE WAREHOUSE AREA

The Pesticide Warehouse is located near by a parking area and is used to store insecticide, fungicide, and herbicide products regulated under Department of Agriculture and EPA Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) which provide pesticide provisions to protect applicators, consumers, and the environment. At the time of the Inspection, EPA Inspector met with Mr. Jose Rodriguez, Warehouse Supervisor, and FIFRA licensed specialist. The warehouse seemed clean, organized, secured and under the control of the operator. All pesticide materials were well documented, in good conditions, dated and identified according to characteristic properties (see **Pictures No. 57** and **No. 58**).

Table No. 1 summarizes the inventory of pesticide products stored at the Pesticide Warehouse area as requested by EPA Inspector.

Table No. 1 – Pesticide Inventory at the Pesticide Warehouse – June 28, 2024
(Ref. University of Puerto Rico Rio Piedras OPASO June 2024)

Name	Use/EPA #	Manufacturing Company	Physical Condition	GHS		
				Word of Caution	Classes of Dangers	Pictograms
Advion Cockroach gel bait	Insecticide EPA# 100-1484	Syngenta	Gel	Attention (Warning)	Skin sensitizer	
Alpine Cockroach gel bait	Insecticida EPA# 499-507	BASF	Gel	No word of warning	There are no danger indications	It does not have
All-Pro Permethrine	Insecticide EPA# 769-983	Value Garden	Solid	Danger	Health Hazard	
Alligare	Insecticide EPA# 81927-55	Alligare	Liquid	Danger	Health Hazard	
Alpine WSG	Insecticide EPA# 499-51	BASF	Solid	Danger	Health Hazard	
Altosid IGR (Zoecon Altosid Pro-G)	Insecticide EPA# 2724-451	Wellmark	Solid	Danger	Health hazard	
Amine 4D Weed killer	Herbicide	Nufarm	Amber Liquid	Danger	Corrosive	

Artic 3.2 EC	Insecticide EPA# 1381-187	Winfield	Amber Liquid	Attention (Warning)	Irritating	
Brandt Neutra Clean	Cleaner	Brandt	Liquid	Danger	Corrosive	
BTI Briquets (Summit Mosquito Dunks)	Larvicide EPA# 6218-47	Summit Chemical	Solid	Attention (Warning)	Irritating	It does not have
Confront	Herbicide EPA# 62719-92	Dow AgroSciences	Liquid	Danger	Flammable Toxic Sensitizer	
Criterion	Insecticide EPA# 432-1318	Bayer	Solid	Attention (Warning)	Acute toxicity Irritating	
Deltadust	Insecticide EPA# 432-772	Bayer	Liquid	No word of warning	There are no danger indications	It does not have
Demand CS	Insecticide EPA# 100-1061	Syngenta	Líquido	Attention (Warning)	Health hazard	
Entech Fog	Insecticide EPA# 40391-4	Entech	Liquid	Danger	Danger to health and the environment	
FenvaStar Plus	Insecticide EPA# 71532-26-91026	LG Life Science America	Liquid	Danger	Toxic Flammable Danger to health and the environment	
Glyphosate (grass and weed killer)	Herbicide EPA# 84009-12 86068-3-84009	Ragan and Massey	Liquid	Attention (Warning)	Toxic Irritant	
Gly Star Plus	Herbicide EPA# 42750-61	Albaugh	Liquid	Attention (Warning)	Toxic Irritant	
InTice	Insecticide EPA# 73079-7	Rockwell Labs	Solid	No word of warning	There are no danger indications	It does not have
Lambdastar CS	Insecticide EPA# 71532-33-91026	LG Life Science America	Liquid	Attention (Warning)	Danger to health and the environment	
Nutra Clean MT	Limpiador de piso	ZEP Corp	Liquid	No word of warning	There are no danger indications	It does not have
NyGuard IGR	Insecticide	MGK	Liquid Gel	Attention	Danger to health	

	EPA# 1021-1603			(Warning)	and the environment	
Optigard Ant Gel Bait	Insecticide EPA# 100-1260	Syngenta	Gel	No word of warning	There are no danger indications	It does not have
Phantom	Termicide Insecticide EPA# 241-392	BASF	Liquid	Danger	Acute Toxicity	
Phantom Pressurized	Insecticide EPA# 241-392	BASF	Aerosol	Danger	Flammable Toxic	
Pt Pro-control Formula 2	Insecticide EPA# 499-512	BASF	Aerosol	Danger	Flammable Danger to health and safety atmosphere	
PT Wasp Freeze	Insecticide EPA# 499-550	BASF	Aerosol	Danger	Aspiration hazard	
Siesta (Fire Ant Bait)	Insecticide EPA# 7969-232	BASF	Solid	Attention (Warning)	Sensitizer Danger to health and environment	
Suspend Polyzone	Insecticide EPA# 432-1514	Bayer	Liquid	Attention (Warning)	Irritating	
Talon / Weatherblock	Rodenticide EPA # 100-1050	Syngenta	Solid	No word of warning	There are no danger indications	It does not have
Tempo Scultra	Insecticide EPA# 432-1363	Bayer	Liquid	Attention (Warning)	Acute Toxicity (oral)	
Termidor SC	Termicide Insecticide EPA# 7969-210	BASF	Liquid	Attention (Warning)	Acute Toxicity	
Trapper Glue	Trampa para el control de roedores	Bell Laboratories		No word of warning	There are no danger indications	It does not have
Vendatta Cockroach gel	Insecticida EPA# 1021-2593	MGK	Liquid Gel	Attention (Warning)	Danger to health and the environment	

EPA RCRA Inspector proceeded to inspect the Pesticide Warehouse Area and requested Mr. Jose Rodriguez, FIFRA licensed, to prepare an inventory of the stored materials (June 2024) and the following was observed at this location:

i. Pesticides products in good condition, secured, and in scheduling to be used in the university campus as inventoried.

ii. The inventory was indicated that all pesticide materials were approved by EPA and the Department of Agriculture, updated, no banned, no expired, and managed according to federal regulations.
iii. Pesticide products in good condition would be transferred and used in the UPR Campus Experimental Station.
iv. Pesticide products that expired, out of the market for which there is no use will be disposed of with the Health, Occupational and Environmental Safety Office (OPASO) for hazardous waste determination and characterization.

4.2 90-DAY CENTRAL HAZARDOUS WASTE STORAGE AREA

EPA RCRA Inspector proceeded to inspect the 90-Day Central Hazardous Waste Storage area which used to house all non-hazardous and hazardous wastes collected at the Campus. This 90-Day Central Storage Area was in a parking area and in an outdoor steel containment shed. The shed was equipped with secondary containment and climate control. Ms. Orellana, EH&S Officer from OPASO, served as the UPR Rio Piedras Campus' representative and stated that the storage shed has not been used in approximately 10 years. There was no hazardous waste present in the shed at the time of the inspection and was used to store spill prevention materials and emergency equipment in cased of a spill incident in the campus (see **Picture No. 59**). There was an additional steel containment shed located to the left of the 90-Day Central Storage Area that was used for maintenance virgin material storage. There was no hazardous waste present in this shed at the time of the inspection.

Observations at this area rendered no concerns regarding the generation or management of unwanted waste or hazardous wastes.

4.3 PAINT WAREHOUSE AREA

The Paint Warehouse area provides painting jobs and maintenance to Campus Buildings and open areas (i.e., parking and sidewalks). At the time of the Inspection, EPA Inspector met with Mr. Wilfredo Nuñez, Warehouse Supervisor.

The EPA Inspector observed the following at this location:

i. Approximately fifty-six (56) 5-gallon pails seemed clean, organized, secured and under the control of the supervisor. All paints were well documented, in good conditions, dated and identified as “Lanco – Marking Coat” water-based paint (see **Picture No. 60**). As observed, most of the paint pails were in good conditions and water solvent based. Therefore, no hazardous waste characteristics or determination may be needed on the contents to all the 5-gallon paint pails at the Paint Warehouse.
ii. It was noted that the practice to dispose of used brushes when them are cleaned up with solvent thinner, and allow them to dry, and then dispose them of as domestic garbage was not permitted at the campus according to Ms. Orellana, EH&S Officer from OPASO. This could be considered as illegal treatment of hazardous wastes.

At the time of the Inspection, EPA Inspector recommended to the Paint Warehouse Supervisor to have available the Safety Data Sheet (SDS) for the type of paints (i.e., solvents, oil, and water base) being in use at the Campus, and to have knowledge and control of their content by implementing inventories of paint material in use to avoid paint waste being dumped into the environment.

It was explained to Ms. Orellana that clean brushes with thinner and allowing them to dry and then disposed of as domestic garbage could be considered illegal treatment. EPA Inspector added that on-site treatment and disposal of hazardous waste without a permit or interim status is a potential violation of both statutory and regulatory requirements. EPA Inspector explained that treatment means any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume. If paint brushed are cleaned up with solvent thinner, these discarded brushes are considered hazardous wastes which are being treated on-site. Ms. Orellana, EH&S Officer from OPASO, emphasized that the practice to clean up brushes with solvent thinner, allow them to dry, and then dispose them of as domestic garbage was not permitted at the campus.

Observations at this area rendered no concerns regarding the generation or management of unwanted waste or hazardous wastes.

4.3.1 Cleaning Products Warehouse Area

EPA RCRA Inspector proceeded to inspect the Cleaning Products Warehouse area which stores cleaning products for the sanitation and maintenance of Campus Buildings. Mr. Wilfredo Nuñez, Warehouse Supervisor, served as the UPR Rio Piedras Campus' representative and escort. EPA Inspector requested the inventory of product purchased that has historically been used for cleaning purposes in the Campus.

Table No. 2 summarizes the inventory of cleaning products and hazardous chemical solvents stored in the Cleaning Product Warehouse area.

Table No. 2 – Cleaning Products Inventory at the Cleaning Products Warehouse – June 28, 2024
(Ref. University of Puerto Rico Rio Piedras OPASO June 2024)

Product Name	Manufacturing Company	Physical Condition	GHS		
			Word of Caution	Classes of Dangers	Pictograms
Airlift Tropical	Spartan Chemical	Liquid	No word of warning	There are no danger indications	It does not have
Antiseptic Skin Cleanser	Kimberly Clark Corp.	Liquid	No word of warning	There are no danger indications	It does not have

Clorox (Regular Bleach)	The Clorox Company	Liquid	Danger	Corrosive Irritant	
DMQ Dam Mop Neutral (concentrated)	Spartan Chenical	Liquid	Danger	Corrosive Irritant	
DMQ Dam Mop Neutral (diluted)	Spartan Chenical	Liquid	No word of warning	There are no danger indications	It does not have
Glass Cleaner (Biorenewables)	Spartan Chemical	Liquid	No word of warning	There are no danger indications	It does not have
HALT	Spartan Chemical	Liquid	Danger	Corrosive Irritant	
HALT (Prepared Solution)	Spartan Chemical	Liquid	No word of warning	There are no danger indications	It does not have
Hospicide Hospital Spray Desinfectant	Prime Source	Aerosol	Danger	Flammable	
Husky 430 crème cleaser	Canberra Corporation	Liquid	Danger	Corrosive Irritant	
NABC Non Acid	Spartan Chemical	Liquid	Attention (Warning)	There are no danger indications	It does not have
Odor Counteractan	Gasco Industrial	Liquid	No word of warning	There are no danger indications	It does not have
Peroxy (concentrated)	Spartan Chenical	Liquid	Attention (Warning)	Irritante	
Peroxy (diluted)	Spartan Chenical	Liquid	No word of warning	There are no danger indications	It does not have
Spraybuff	Spartan Chemical	Liquid	No word of warning	There are no danger indications	It does not have
Step Down	Spartan Chenical	Liquid	Danger	Corrosive Irritant	
Supra Wash	Supra Products	Liquid	No word of warning	There are no danger indications	It does not have
The Fixx	Spartan Chenical	Liquid	No word of warning	There are no danger indications	It does not have
Topped Fresh Odor	JM Depot Inc.	Liquid	Attention (Warning)	There are no danger	It does not have

				indications	
TNT Foaming	Spartan Chemical	Aerosol	Danger	Flammable	

It was observed by the EPA Inspector that many of the cleaning solvent products were concentrated and contained hazardous substances as active ingredients (see **Picture No. 61)**. After thorough evaluation of the products' Safety Data Sheets (SDSs), some of the cleaning products could be potentially hazardous to the environment if disposed of inappropriately. As stated by Ms. Orellana, EH&S Officer from OPASO at the time where cleaning operations were undertaking, many of the cleaning solvents were diluted as indicated in the product instructions and placed directly on surfaces to clean or to disinfect surfaces or floors. Many of the cleaning material impacted such as rags with solvents were disposed of with domestic garbage as well as left over from non-used products. EPA Inspector instructed Mr. Wilfredo Nuñez to continue training his employees in the proper management and disposal of these potentially hazardous wastes (i.e., contaminated rags). EPA Inspector reiterated that products containing hazardous substances as active ingredients, and as specified in the product's SDSs, must be managed in a manner to avoid the disposal into the environment as a hazardous waste. Additionally, hazardous waste determinations must be made before residual wastes or impacted materials are disposed of as solid waste.

It was also observed that the list products used at the shop were non-biodegradable products such as stripper furniture, oil cleaning, bowl cleaning, bacteria control, and degreasers (i.e., waxes) were applied on floors, bathrooms, common areas throughout the Campus. It was stated by Mr. Wilfredo Nuñez that most of the inventory of products is always in use, and that expired products, if any, are disposed of as hazardous waste with OPASO such as peroxy (concentrated), DMQ Dam Mop Neutral (concentrated) stripper remover wax, Step Down and degreasers for stains (see **Picture No. 62)**. EPA Inspector stated that hazardous waste determination must be performed on discarded solid waste from cleaning operations identified throughout the Campus before its final disposition.

4.4 SWIMMING POOL AREA

EPA RCRA Inspector proceeded to inspect the Swimming Pool Area which is used asa the Health and Physical Fitness Center Facility for teaching and practicing swimming styles and surviving skill in water. Mr. Hector Betancourt, Swimming Pool Supervisor, served as the UPR Rio Piedras Campus' representative and escort.

EPA Inspector were looking for existing conditions and control of chlorine gas cylinders which was considered a hazardous chemical of concern located in the swimming pool area. In a brief description, chlorine gas is primarily a respiratory irritant. In sufficient concentration, the gas irritates the mucous membranes, the respiratory tract, and the eyes. In extreme cases difficulty in breathing may increase to the point where death can occur from respiratory collapse or lung failure. The characteristic, penetrating odor of chlorine gas usually gives warning of its presence in the air. Also at high concentrations, it is visible as a greenish yellow gas.

Mr. Hector Betancourt explained that no chorine gas is used at the at the swimming pool area instead all choline treatment is based on solid dosage of Sodium Chloride (NaCl) by a Pulsar 4 System (see **Picture No. 63**). The Pulsar 4 System controls and applies chemicals as needed to the pool water on a routine basis. This system in which the operator brings all the chemicals and feed the tanks, and therefore, there is a chemical storage room at the swimming pool area for the continuous maintenance of the pool water (see **Picture No. 64**). EPA Inspector requested the inventory of product purchased that has historically been used for choline treatment based on solid dosage of Sodium Chloride at the swimming pool area in the Campus.

Table No. 3 summarizes the inventory of choline treatment products and hazardous chemicals stored in at the Swimming Pool Area in the Campus.

Table No. 3 – Choline Treatment Products and Hazardous Chemicals Inventory at the Swimming Pool Area
June 28, 2024
(Ref. University of Puerto Rico Rio Piedras OPASO June 2024)

Product Name	Manufacturing Company	Physical Condition	GHS		
			Word of Caution	Classes of Dangers	Pictograms
Pulsar pH Down (+4)	Innovative Water Care	Solid	Danger	Corrosive	
Pulsar plus Calcium Hypochlorite Briquettes	Arch Chemicals Inc.	Solid Briquettes	Danger	Corrosive Oxidizer	
Pulsar Sunscreen	Arch Chemicals Inc.	Gel	Attention (Warning)	Corrosive Irritant	
Sodium bicarbonate	Tronox	Solid	No word of warning	There are no danger indications	It does not have

Muriatic Acid (Hydrochloric Acid)	Agua Gard Allied Universal Corp.	Liquid	Danger	Corrosive	

Observations at this area rendered no concerns regarding the generation or management of unwanted waste or hazardous wastes.

4.5 ORNAMENT AND CONSERVATION SHOP

The Ornament and Conservation Shop provides maintenance and preventive services to Campus green areas. At the time of the Inspection, EPA Inspector met with Mr. Benjamin Caraballo Villegas, Shop Supervisor.

EPA RCRA Inspector proceeded to inspect this Ornament and Conservation Shop Area. The EPA Inspector observed the following at this location:

i. Approximately nine (9) 5-gallon red containers with gasoline for the trimmers, movers, golf cars and other gardening machines which uses gasoline to operate equipment parts (see **Picture No. 65**).
ii. Approximately eight (8) 5-gallon yellow containers with diesel for the trimmers, movers and other gardening machines which uses gasoline to operate equipment parts (see **Picture No. 65**).

EPA Inspector recommended to keep good housekeeping practices to avoid spills (apparently of oils, diesel, or gasoline) on the floor. No hazardous waste determination has been made on the solid waste mixed with rags impregnated with oils, diesel, or gasoline as observed inside this shop.

4.6 PREFORMING ART BUILDING

The Art Building was inaccessible (locked) at the time of the inspection. The Art Building was not in operation due to summer season.

4.7 CHEMISTRY, BIOLOGY, PHYSICS, AND ENVIRONMENTAL RESEARCH BUILDING ("FACUNDO BUESO")

The Research Building has four (4) stories and forty-seven (47) investigation research laboratories. This building houses the chemistry, biology, physics, and environmental research laboratories, teaching classrooms with cabinets used for the storage of chemical reagents, a chemical storage area, and hazardous waste satellite accumulation areas (SSA) located in most laboratories managed under the Laboratory Management Plan. Ms. Lymari Orellana from the Health, Occupational and Environmental

Safety Office, served as the UPR Rio Piedras Campus' representative. Since this building houses numerous laboratories, a map depicting laboratory locations and personnel in charge was requested to the Department Director to minimize the complexity of the compliance inspection.

4.7.1 Biosensor Research for Health Applications Laboratory FB-140

EPA RCRA Inspector proceeded to inspect this Biosensor Research laboratory area. At the time of the Inspection, EPA Inspector met with Dra. Ramonita Diaz, Research Laboratory Supervisor. The EPA Inspector observed six (6) 5-gallon containers and four (4) 1-Liter bottles inside a blue cabinet at this Satellite Accumulation Area (SAA) as follows:

Satellite Accumulation Area (SAA) No. 1

i. Six (6) 5-gallon white containers containing radioactive waste of "Uranyl Acetate," being stored inside a blue cabinet labeled with the words "Hazardous Waste," and not identified with RCRA hazardous waste codes nor its hazard communication pictograms as required by RCRA regulations. There was one (1) container with its RCRA hazardous waste codes "F003" (i.e., solids contaminated with non-halogenated solvents and Uranyl) (**No Pictogram**) (see **Picture No. 66**).
ii. Four (4) 1-Liter white bottles containing radioactive waste of "Uranyl Acetate," being stored inside a blue cabinet labeled with the words "Hazardous Waste," and not identified with RCRA hazardous waste codes nor its hazard communication pictograms as required by RCRA regulations (**No Pictogram**) (see **Picture No. 66**).

As observed by EPA Inspectors, most of the waste stored in this cabinet consisted of Uranyl Acetate radioactive-corrosive wastes generated by this Biosensor Research laboratory. EPA Inspector stated that a certified Radiation Safety Officer is needed at the Campus for the proper management of these radioactive wastes, and they should also contact the Department of Energy (DOE) for regulatory requirements. EPA Inspector also advised to contact the Nuclear Regulatory Commission (NRC) to request how all these radioactive wastes should be removed from UPR Rio Piedras Campus for the proper management and final disposition as "Hazardous Wates" mixed with "Radioactive Wastes."

The EPA Inspector proceeded to inspect another Satellite Accumulation Area (SAA) and observed four (4) 5-gallon containers inside a bone white cabinet at this as follows (see **Picture No. 67**):

Satellite Accumulation Area (SAA) No. 2

i. One (1) 5-gallon white container with "Organic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001" and "D002" (i.e., ignitable, and corrosive) and with its hazard communication pictograms "Flammable and Corrosive Liquids, "as required by RCRA regulations.

ii. One (1) 5-gallon white container with "Inorganic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and with its hazard communication pictogram "Flammable Liquids," as required by RCRA regulations.
iii. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents) and properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations.
iv. One (1) 5-gallon white container with "Neutralization Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and with its hazard communication pictogram "Corrosive Liquids, "as required by RCRA regulations.
v. One (1) 1-Liter white bottles containing sharp "Syringes," contaminated with spent alcohol being stored on top of a bone white cabinet labeled with the words "Hazardous Waste," and not identified with its RCRA hazardous waste code nor its hazard communication pictogram as required by RCRA regulations (**No Pictogram**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

4.7.2 Cellular Culture Virology Research Laboratory FB-136

EPA RCRA Inspector proceeded to inspect this Cellular Culture Virology Research laboratory area. At the time of the Inspection, EPA Inspector met with Dr. Author Tinoco, Research Laboratory Supervisor. The EPA Inspector observed two (2) 5-gallon containers placed on a black tray at this

Satellite Accumulation Area (SAA) as follows:

i. One (1) 5-gallon white container with "Solid Waste" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents) and with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (see **Picture No. 68**).
ii. One (1) 1-Liter white container with "Heavy Metals Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D002 (Corrosive), D005 (Barium), D006 (Cadmium), D011 (Silver) and with its hazard communication pictogram "Corrosive Liquids, "as required by RCRA regulations (see **Picture No. 68**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, properly identified with their RCRA hazardous waste codes and posted with

their hazardous communication pictograms at the time of the Inspection.

4.7.3 Electrochemistry Research Laboratory FB-101-A (Lithium Batteries)

EPA RCRA Inspector proceeded to inspect this Electrochemistry Research laboratory area. At the time of the Inspection, EPA Inspector was informed that Dr. Wu was the Research Laboratory Supervisor. The EPA Inspector observed Satellite Accumulation Areas (SAAs) as follows:

Satellite Accumulation Area (SAA) No. 1

i. Four (4) 1-Liter white bottles containing "Lithium Wastes," inside a pressurized chamber on top of a bench working station labeled with the words "Hazardous Waste," and not identified with RCRA hazardous waste codes nor its hazard communication pictograms as required by RCRA regulations (**No Pictogram**) (see **Picture No. 69**).

Satellite Accumulation Area (SAA) No. 2

i. One (1) 5-gallon white container containing "Spent Lithium Batteries Wastes," on top of a bench labeled with the words "Hazardous Waste," identified with RCRA hazardous waste codes "D001" and "D003" (i.e., ignitable, and reactive) and with its hazard communication pictogram "Flammable," as required by RCRA regulations (see **Picture No. 70**).

Satellite Accumulation Area (SAA) No. 3

i. One (1) 5-gallon white container containing "Zinc Chloride Electrodes" inside an extractor hood of a cabinet labeled with the words "Hazardous Waste," identified with RCRA hazardous waste codes "D002" (i.e., corrosive) and with its hazard communication pictogram "Corrosive," as required by RCRA regulations (see **Picture No. 71**).
ii. One (1) 5-gallon white container containing "Cadmium Solid Wastes" inside an extractor hood of a cabinet labeled with the words "Hazardous Waste," identified with RCRA hazardous waste code "D006" (i.e., toxic) and with its hazard communication pictogram "Flammable," as required by RCRA regulations (see **Picture No. 71**).
iii. One (1) 5-gallon white container containing "Lithium Phosphate and Sulfured Aqueous Wastes" inside an extractor hood of a cabinet labeled with the words "Hazardous Waste," identified with RCRA hazardous waste codes "D001" and "D003" (i.e., ignitable, and reactive) and with its hazard communication pictogram "Flammable," as required by RCRA regulations (see **Picture No. 71**).
iv. One (1) 1-Liter white bottles containing sharp "Syringes," contaminated with spent alcohol being stored inside an extractor hood of a cabinet labeled with the words "Hazardous Waste," and not identified with its RCRA hazardous waste code but posted with its hazard communication pictogram "Flammable," as required by RCRA regulations (see **Picture No. 71**).

EPA Inspector observed in all Satellite Accumulation Areas that a container holding a hazardous waste that is incompatible with any waste or other materials accumulated nearby in other containers must be separated from the other materials or protected from them by any practical means. In addition, EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

4.7.4 Materials Science Research Laboratory FB-204 & FB-205

EPA RCRA Inspector proceeded to inspect this Materials Science Research laboratory area. At the time of the Inspection, EPA Inspector met with Ms. Nerica Hernandez, and Ms. Junellie Cruz, both laboratory technicians. The EPA Inspector observed various Satellite Accumulation Areas (SAAs) as follows:

Satellite Accumulation Area (SAA) No. 1 (FB-205)

i. One (1) 5-gallon white container with "Organic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001" and "D002" (i.e., ignitable, and corrosive) and with its hazard communication pictograms "Flammable and Corrosive Liquids, "as required by RCRA regulations (see **Picture No. 72**).
ii. One (1) 5-gallon white container with "Neutralization Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and with its hazard communication pictogram "Corrosive Liquids, "as required by RCRA regulations (see **Picture No. 72**).
iii. One (1) 5-gallon white container with "Spent Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001 (ignitable) D002 (corrosive), D021 (Chlorobenzene), D022 (Chloroform), F002, F003 and F005 (Halogenated Solvents) and with its hazard communication pictogram "Flammable Liquids, "as required by RCRA regulations (see **Picture No. 72**).
iv. One (1) 5-gallon white container with "Spent Non-Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001 (ignitable), D035 (Methyl Ethyl Ketone), F003 and F005 (Non-Halogenated Solvents) and with its hazard communication pictogram "Flammable Liquids, "as required by RCRA regulations (see **Picture No. 72**).
v. One (1) 1-Liter white container with "Heavy Metals Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D002 (Corrosive), D005 (Barium), D006 (Cadmium), D011 (Silver). The container did not have its hazard communication pictogram "Corrosive Liquids, "as required by RCRA regulations (**No Pictogram**) (see **Picture No. 73**).

Satellite Accumulation Area (SAA) No. 2 (FB-205)

i. One (1) 55gallon blue drum with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents) and properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (see **Picture No. 74**).

Satellite Accumulation Area (SAA) No. 3 (FB-204)

i. One (1) 5-gallon white container containing "Spent Lithium Batteries Wastes," on top of a bench labeled with the words "Hazardous Waste," identified with RCRA hazardous waste codes "D001" and "D003" (i.e., ignitable, and reactive) and with its hazard communication pictogram "Flammable," as required by RCRA regulations (see **Picture No. 75**).
ii. One (1) 5-gallon white container containing sharp "Syringes," contaminated with spent alcohol being stored inside an extractor hood of a cabinet labeled with the words "Hazardous Waste," identified with its RCRA hazardous waste code "D001," (i.e., ignitable), and with its hazard communication pictogram "Flammable," as required by RCRA regulations (see **Picture No. 75**).
iii. One (1) gallon white container containing "Carbon Black Graphite Wastes," nearby a blue cabinet labeled with the words "Hazardous Waste," and not identified with RCRA hazardous waste codes nor its hazard communication pictograms as required by RCRA regulations (**No Pictogram**) (see **Picture No. 75**).
iv. One (1) 5-gallon white container containing "Used Oil," below a bench table and not properly labeled with the words "Used Oil," as required by RCRA regulations (**No Used Oil Label**) (see **Picture No. 76**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

4.7.5 Materials Characterization Research Center FB-267-A

EPA RCRA Inspector proceeded to inspect this Materials Characterization Research Center laboratory area. At the time of the Inspection, EPA Inspector met with Ms. Mildred Rivera Research Laboratory Supervisor. The EPA Inspector observed various Satellite Accumulation Areas (SAAs) as follows:

Satellite Accumulation Area (SAA) No. 1

i. One (1) 5-gallon white container with "Organic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001" and "D002" (i.e., ignitable, and corrosive) and with its hazard communication pictograms "Flammable and

Corrosive Liquids, "as required by RCRA regulations (see **Picture No. 77**).

ii. One (1) 5-gallon white container with "Spent Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001 (ignitable) D002 (corrosive), D021 (Chlorobenzene), D022 (Chloroform), F002, F003 and F005 (Halogenated Solvents)" and with its hazard communication pictogram "Flammable Liquids, "as required by RCRA regulations (see **Picture No. 77**).

iii. One (1) 5-gallon white container with "Spent Non-Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001 (ignitable), D035 (Methyl Ethyl Ketone), F003 and F005 (Non-Halogenated Solvents)" and with its hazard communication pictogram "Flammable Liquids, "as required by RCRA regulations (see **Picture No. 77**).

iv. One (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents). The container was properly identified with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (see **Picture No. 77**).

v. One (1) 5-gallon white container containing "Used Oil," on a mat placed on the floor and not properly labeled with the words "Used Oil," as required by RCRA regulations (**No Used Oil Label**) (see **Picture No. 78**).

Nearby the SSA there were two (2) High Performance Liquid Chromatography (HPLC) equipments that run different quality tests. When tests are completed all chemical reagents and material tested are collected in containers (i.e., satellite areas). Most of the waste generated from HPLCs is spent methanol/water and acetonitrile/water, formic acid/methanol/water, EDTA (i.e., Ethylenediaminetetraacetic acid disodium salt dihydrate) which are used as mobile phases of spent solvents.

<u>Satellite Accumulation Area (SAA) No. 2</u>

i. One (1) 5-gallon white container with a spent mobile phase "HPLC" (ACN/Water/ETOH 90/10) connected to a high-performance liquid chromatography (HPLC) labeled with the words "Hazardous Waste," not identified with RCRA hazardous waste code "D001" (ignitable) nor with its hazard communication pictogram "Flammable Liquids," as required by RCRA regulations (**No Pictogram**) (see **Picture No. 79**).

ii. One (1) 3-gallon white container with a spent mobile phase "HPLC" (ACN/Water/ETOH 90/10) connected to a high-performance liquid chromatography (HPLC) not labeled with the words "Hazardous Waste," not identified with RCRA hazardous waste code "D001" (ignitable) nor with its hazard communication pictogram "Flammable Liquids," as required by RCRA regulations (No **Hazardous Waste Label No Pictogram**) (see **Picture No. 80**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential

releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms at the time of the Inspection.

On June 28, 2024, EPA Inspector proceeded to inspect the Chemical Reagents Storage Area (Metal Brown Cabinet and Yellow Cabinet) located in the Materials Characterization Research Center laboratory area which is used to store chemical reagents used in the performance of research experiments mainly in the characterization of material properties.

At the time of the RCRA Inspection, EPA Inspector observed numerous expired chemicals (since before 1999), discarded, contaminated, various unused chemical reagents, deteriorated and stored for a very long time (i.e., over a year or more) in shelves without any physical means to protect each other from incompatibility of waste characteristics. As observed by EPA Inspector there were corrosive, flammable, reactive, toxic and poison chemical wastes reagents. According to Ms. Mildred Rivera Research Laboratory Supervisor, all these chemical reagents were donated to the university and were not in use and stored for a long period of time in this area and never declared as "solid waste," or notified to the Health, Occupational and Environmental Safety Office (OPASO). There was no hazardous waste determination being performed on abandoned, expired, not in use, discarded hazardous chemical waste inventory before its final disposal nor have been managed under the Flinn Laboratory Management Plan.

As observed by EPA Inspector, there were no Safety Data Sheets (SDSs) available at the storage area for most of the expired, abandoned, not in use chemical reagents that should be inventoried for final disposition. It was recommended by EPA Inspector that SDSs should be evaluated to determine the proper characterization and determination of the expired and discarded solid waste. Among the chemical reagents identified from a safety distance stored without segregation included Ethyl Alcohol (2008), 1, 4 Dioxane, Tetrahydrofuran (1999), Ethyl Acetate (2008), Reagent alcohol (2003), Hydrochloric acid solution (2016), Ethyl ether (2013), 1-Chlorobutane, Ethylenediamine, Acetic Acid Anhydrous, Potassium Hydroxide, Sodium Sulfate Anhydrous, Potassium Sulfate, Tetrabutylammonium hydroxide solution (2022), Formaldehyde, and various 4-Liter bottles HPLC containing flammable and combustible liquids which were no longer intended to be used (see **Pictures No. 81, and 82**).

It was determined by EPA Inspector that there was an actual or potential of fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

Table No. 4 depicts the inventory of chemical reagents recorded during EPA Inspection provided by Ms. Lymari Orellana from the Health, Occupational and Environmental Safety Office (OPASO) to request quotation from Veolia Environmental Services for final disposition.

Table No. 4 – Chemical Reagents Inventory at the Materials Characterization Research Center Laboratory – June 28, 2024

Chemical Reagent Name	Estimated Quantity	Company	Expiration Date	Batch #	Quantity Number	Location
Lauryl Sulfate	500g	Fisher	2022	166057	2	FB-267-A
Sodium Citrate Dihydrate	500g	Fisher	2022	1655275	1	FB-267-A
Chloroacetic acid	100g	Sigma Aldrich	2022	SHBH8227	1	FB-267-A
Tetrahydrofuran	1L	Fisher	2007	063711-12	1	FB-267-A
Chloroacetic acid	500g	Fisher	2022	172478	1	FB-267-A
Glycine	500g	Fisher	2018	154737	1	FB-267-A
DL-Tropic Acid	25g	TCI	2022	QUSEO	1	FB-267-A
Ethylenediaminetetraacetic Acid Disodium Salt	500g	Fisher	2022	171513	1	FB-267-A
Potassium Hydroxide	500g	Fisher	2022	172339	2	FB-267-A
Sodium Sulfate Anhydrous	1kg	Fisher	2022	65769	4	FB-267-A
Sodium Sulfate Anhydrous	500g	Fisher	2022	154775	4	FB-267-A
Sodium Sulfate Anhydrous	500g	Fisher	2022	154776	4	FB-267-A
Potassium Sulfate	250g	Sigma Aldrich	2022	SLBV8782	1	FB-267-A
Tetrabutylammonium hydroxide solution	1L	Sigma Aldrich	2022	BCCB1941	1	FB-267-A
Ethyl Alcohol absolute	4L	Acros	MFg date-5/6/2008	B0515086	1	FB-267-A
1, 4 Dioxane	4L	Fisher	2015	128226	1	FB-267-A
Tetrahydrofuran	2L	Sigma-Aldrich	Quality control -May 1999	01249EU	1	FB-267-A
Ethyl Acetate	4L	Fisher	MFg date-2/5/2008	76766	1	FB-267-A
Reagent alcohol	4L	Fisher	MFg date-10/1/2003	031213	1	FB-267-A
Hydrochloric acid solution	2L	Fluka	2016	SHBD8492V	2	FB-267-A

Hydrochloric acid solution	2L	Fisher	2017	158557	2	FB-267-A
Ethyl ether	4L	Fisher	2013	117044	1	FB-267-A
1-Chlorobutane	2L	Sigma-Aldrich	*Request Disposal	MKBN3993V	2	FB-267-A

4.7.6 Ecological Research Laboratory FB-253 ("ECOLAB")

EPA RCRA Inspector proceeded to inspect this Ecological Research laboratory area. At the time of the Inspection, EPA Inspector met with Dr. Larry Diaz, Research Laboratory Supervisor. The EPA Inspector observed three (3) 5-gallon containers 4 inside a cabinet at this Satellite Accumulation Area (SAA) as follows:

Satellite Accumulation Area (SAA) No. 1

i. One (1) 5-gallon white container with "Organic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste codes "D001" and "D002" (i.e., ignitable, and corrosive) and with its hazard communication pictograms "Flammable and Corrosive Liquids, "as required by RCRA regulations (see **Picture No. 83**).
ii. One (1) 5-gallon white container with "Inorganic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "D002" (i.e., corrosive) and with its hazard communication pictogram "Flammable Liquids, "as required by RCRA regulations (see **Picture No. 83**).
iii. One (1) 5-gallon white container with "Solid Waste" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified with RCRA hazardous waste code "F003" (i.e., solids contaminated with non-halogenated solvents) and with its hazard communication pictogram "Flammable Solids, "as required by RCRA regulations (see **Picture No. 83**).

EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, properly identified with their RCRA hazardous waste codes and posted with their hazardous communication pictograms at the time of the Inspection.

At this laboratory the following chemical reagents, just to name a few, were found stored in a blue cabinet: formaldehyde (toxic and flammable), hydrogen peroxide (oxidizer), sodium hydroxide (strong base), pyridine (toxic), and ammonium acetate among many other chemical reagents stored together in an incompatible manner where they can be inadvertently mixed or where a spill or leak can cause danger or explosion (see **Picture No. 84**).

Ms. Lymari Orellana emphasized that UPR Rio Piedras uses the "Flinn Compatible Chemical Family

Storage System," which was developed for classifying and safely storing chemicals recommended by the National Institute for Occupational Safety and Health (NIOSH) in the "Academic Chemistry Laboratory Safety Guide." As suggested by NIOSH chemical reagents are arranged and segregated by chemical compatible families. Nevertheless, this laboratory was not implementing the Flinn Laboratory Management Plan.

In general, EPA Inspector observed at the Satellite Accumulation Areas the list of names and telephone numbers in case of an emergency at visible locations, specifically, nearby the hazardous waste storage areas, cabinets, and satellite areas. There were telephones in place and two-way communication system. In additon, the UPR Rio Piedras Campus is equipped with alarm systems, sprinkler systems, and extinguishers nearby areas where hazardous wastes were stored.

5 DOCUMENTS REVIEW

The following documents were reviewed as required by the RCRA Program after the walkthrough inspection and on follow-up e-mails with the requested information:

5.1 MANIFEST RECORDS AND LAND DISPOSAL RESTRICTION FORMS (LDR)

Manifests and associated LDRs for all incoming and outgoing shipments for the last three years were reviewed in hard and electronic copies. Most of the hazardous waste are sent by Veolia Environmental Services, Inc. to a destination in Flanders, and Middlesex, New Jersey USA. It seemed that UPR Rio Piedras Campus is a Large Quantity Generator since it generates more than 2,000 pounds of hazardous waste every month and disposed of with Veolia Environmental Services, Inc. All appeared to be properly maintained and in compliance.

Table No. 5 summarizes some monthly Manifests and Land Disposal Restriction provided by UPR Rio Piedras Campus.

Table No. 5 - MANIFEST RECORDS AND LAND DISPOSAL RESTRICTION

Manifest No.	Date	Quantity (Lbs)	Manifest No.	Date	Quantity (Lbs)
Year 2024 (May)					
002066608VES	05/06/2024	361	**002066610VES**	05/06/2024	10
002066609VES	05/06/2024	280	**002065900VES**	05/08/2024	1,220
Year 2024 (March)					
002065757VES	01/26/2024	1,1240	**002065885VES**	03/04/2024	600
002065884VES	03/04/2024	580	**002065793VES**	03/22/2024	260
Year 2024 (April)					
002065882VES	04/01/2024	75	**002065882VES**	04/01/2024	335

002067212VES	04/23/202435	35	**002067149VES**	04/30/2024	8

5.2 WASTE ANALYSIS

A Full RCRA analysis was reviewed from Veolia Capitol Environmental Services, Inc. during charactering and profiling hazardous waste at the UPR Rio Piedras Campus and described in the Land Disposal Restriction Notification Certification Forms. Veolia Environmental Services, Inc. prepared a Detail Report containing information about Toxic Characteristic Leaching Procedure (Test Method SW 1311) tests, and other analytical methods or knowledge of the waste including universal wastes, used oils, and coolants disposal. All wastestreams generated by the UPR Rio Piedras Campus were identified, classified, tested, codified, and disposed of as required by the land disposal restrictions (LDRs). The Waste Analysis Plan submitted by Veolia Environmental Service Inc. appeared to be in compliance.

5.3 BIENNIAL REPORT

The Hazardous Waste Report for 2023 was submitted electronically on February 21, 2024, in RCRA Info Site. The Biennial Report described all the wastestreams generated and managed by the Facility including waste flammable liquids such as ethyl/isopropyl alcohol mix from laboratories (D001), formaldehyde and methanol mix from laboratory (D001, F003), fixer and developer solution (hazardous} from photo laboratory (D007), organic aqueous wastes (D001, D002), inorganic aqueous Wastes (D002), spent non-halogenated solvent wastes (D001, D035, F003, F005), Solid Wastes waste (F003), lab pack chemical from laboratory (U-listed) (0001. 0002, D003, 0018, 0022. 0038, F001. F002, F003, U002, U007. U031, U044, U052, U080, Ul08, Ul22. U129, Ul33, Ul34, Ul62. U188, U197, U211, U240) among many other waste streams. It appeared to be properly documented and in compliance.

5.4 PERSONNEL TRAINING RECORDS

UPR Rio Piedras Campus provided a Record of Training for the academic staff associated with the "Management of Chemical Wastes in Laboratories," including the "*Appropriate Management of Hazardous Waste in Laboratories (40 CFR § 261-262), the Hazard Communication Standard and the Globally Harmonized System for Classifying and Communicating the Hazards of Chemicals (29 CFR § 1910.1200), and the Substance Exposure Standards Chemistry in Laboratories (29 CFR § 1910.1450)"* for the management of hazardous wastes for researchers and students (June 13, 2024). All training sessions are offered monthly for all personnel working in laboratories and other university shops. The record documentation of the of university detailed the kind of training, date, and completion status taken by professors, researchers, students, and EH&S personnel during 2024. Also, on August 25, 2023, UPR Rio Piedras Campus offered another training session regarding the management of hazardous waste in Satellite Accumulation Areas.

5.5 WEEKLY LOG RECORDS

All weekly logs records for daily and weekly inspections at the Satellite Accumulation Areas (SAAs) and hazardous waste container storage areas were reviewed and found to comply.

5.6 WASTE MINIMIZATION

Pursuant to 40 CFR § 262.27, large quantity generator must have a program in place to reduce the volume and toxicity of waste generated to the degree it is economically practicable for the method of treatment, storage, or disposal currently available which minimizes the present and future threat to human health and the environment. The university did not have a Waste Minimization Plan (WMP) at the UPR Rio Piedras Campus, and therefore, it was found not to be in compliance.

5.7 JOB TITLE & DESCRIPTION RECORDS

Pursuant to 40 CFR § 262.17(a)(7)(iv), large quantity generators must provide for review a job title for each position at the Facility related to hazardous waste management, and the name of the employee filling each job. In addition, it must provide a written job description for each position including the requisite skill, education, or other qualifications, and duties of the UPR Rio Piedras Campus's personnel assigned to each position. Information provided appeared to be properly maintained and in compliance.

5.8 AIR EMISSIONS STANDARD RECORDS

Pursuant to 40 CFR § 262.17(a)(1)(i) referring to 40 CFR Part § 265 Subpart AA, BB, and CC – All Facility record for accumulation of hazardous waste in container related to the RCRA air emission requirements were requested. According to by Ms. Lymari Orellana from the Health, Occupational and Environmental Safety Office (OPASO) stated that UPR Rio Piedras Campus does not have to comply with 40 CFR Part 265 Subparts CC of RCRA requirements for the managment and control of air emissions of hazardous waste stored in containers since all campus containers had design capacities less than 0.1 m^3 (26.4 gallons) in accordance with 40 CFR § 265.1087(b)(1)(i). All RCRA requirements pursuant to RCRA Subpart CC Air Emissions Standard Controls for containers was not applicable to UPR Rio Piedras Campus.

5.9 CONTINGENCY AND EMERGENCY PREPAREDNESS PLAN

There was a Contingency Plan for Hazardous Waste of the UPR Rio Piedras Campus, dated June 2024, which included and Emergency Plan: Spill of hazardous materials and/or hazardous wastes releases and outlines the procedures and activities required for the prevention of, and response to, hazardous material emergency at the UPR Rio Piedras Campus. In general, the purpose of the plan is to train UPR-Rio Piedras personnel to manage and mitigate the possible effects and/or damage caused by emergencies related to chemical substances and/or hazardous waste This document is aimed at presenting the necessary measures to save lives and avoid damage when responding, during and after these emergencies. These measures establish a system that allows

staff and UPR-RP to recover and return to normal in a reasonable time. The procedures described have been designed to minimize the possible risks to public health, safety, and the environment in the event of explosions, fires or any sudden or unplanned release or spill of hazardous substances and/or hazardous waste or their constituents to the air, soil, or surface water. RCRA Quick Reference Guides (QRGs) were provided as required for Large Quantity Generators (LQG) of hazardous waste pursuant 40 CFR § 262.262.

As observed the Contingency Plan for Hazardous Waste of the UPR Rio Piedras Campus did not provide for any attempt to make arrangements with the local police department, fire department, other emergency response teams, emergency response contractors, equipment suppliers and local hospitals, taking into account the types and quantities of hazardous wastes handled at the UPR Rio Piedras Campus. No arrangements were made with the Local Emergency Planning Committee.

6 CLOSING MEETING (DAY 2 – JUNE 28, 2024)

A closing meeting was held at the end of the final day of EPA Inspection at the Occupational and Environmental Safety Office (OPASO). I met with Mr. Jorge Ramos, OPASO Director, and Ms. Lymari Orellana, OPASO Specialist I to conduct a closing meeting. I indicated that the purpose of the closing meeting is to inform the Facility's representatives about the RCRA observations. I indicated to Mr. Ramos and Ms. Orellana that I wanted to discuss some EPA's observations before I can reach a full compliance determination of the RCRA program. Based on EPA Inspection findings, I discussed the following topics that needed campus consideration:

i. EPA Inspector identified some solid waste stored at the Facility without a proper hazardous waste determination or characterized, as "Hazardous Waste," or "Non-Hazardous Waste." EPA Inspector reiterated that the Materials Characterization Research Center FB-267-A, EPA Inspector observed numerous expired chemicals (since before 1999), discarded, contaminated, various unused chemical reagents, deteriorated and stored for a very long time (i.e., over a year or more) in shelves without any physical means to protect each other from incompatibility of waste characteristics.
ii. EPA Inspector observed containers holding chemical reagents ranging from used oil, various acids and spent solvents to formaldehyde, old and expired chemicals, such as picric acid, in an unsafe manner at the Molecular Cellular Research Laboratory JGD-220.
iii. EPA Inspector observed containers containing radioactive waste of "Uranyl Acetate," generated by this Biosensor Research laboratory and being stored inside a blue cabinet labeled with the words "Hazardous Waste," and not identified with RCRA hazardous waste codes nor its hazard communication pictograms as required by RCRA regulations EPA Inspector stated that a certified Radiation Safety Officer is needed at the Campus for the proper management of these radioactive wastes, and they should also contact the Department of Energy (DOE) for regulatory requirements. EPA Inspector also advised to contact the Nuclear Regulatory Commission (NRC) to request how all these radioactive wastes should be removed from UPR Rio Piedras Campus for the proper management and final disposition as "Hazardous Wates" mixed with "Radioactive Wastes."

iv. EPA Inspector observed in all Satellite Accumulation Areas that a container holding a hazardous waste that is incompatible with any waste or other materials accumulated nearby in other containers must be separated from the other materials or protected from them by any practical means.
v. EPA Inspector found various containers located in the SAAs that must be marked or labeled with the words "Hazardous Waste," and must include an indication of the hazards of the content such as ignitable, corrosive, reactive, or toxic or a hazard communication pictogram.
vi. Facility must develop a Waste Minimization Plan to reduce the volume and toxicity of waste generated to the degree it is economically practicable for the method of treatment, storage, or disposal currently available which minimizes the present and future threat to human health and the environment.
vii. EPA Inspector identified some cardboard boxes with spent fluorescent lamps that were not labeled with the with the words, "Universal Waste-Lamp(s)," and prevent them from brokage.
viii. EPA Inspector identified some drums and containers with Used Oil that were not properly labelled with the words, "Used Oils," some were open, and needed to comply with used oil filter requirements.
ix. EPA Inspector indicated that UPR Rio Piedras Campus must describe arrangements agreed to with the local police department, fire department, other emergency response teams, emergency response contractors, equipment suppliers, local hospitals or, if applicable, the Local Emergency Planning Committee regarding the Contingency Plan for Hazardous Waste as required by RCRA regulations.

As observed by EPA Inspector in various storage areas the UPR-Rio Piedras Campus has failed to store compatible chemical reagents to avoid any detrimental event that may pose a human threat or environmental impact. It was stated on many occasions by EPA Inspector that chemicals did not appear to be segregated by compatibility, and that shelving was not self-contained to prevent chemical leaks or spillage from incompatible chemical reagent containers. In the Material Characterization Research Center, EPA determined that there was an actual or potential of fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

7 COMPLIANCE ASSISTANCE

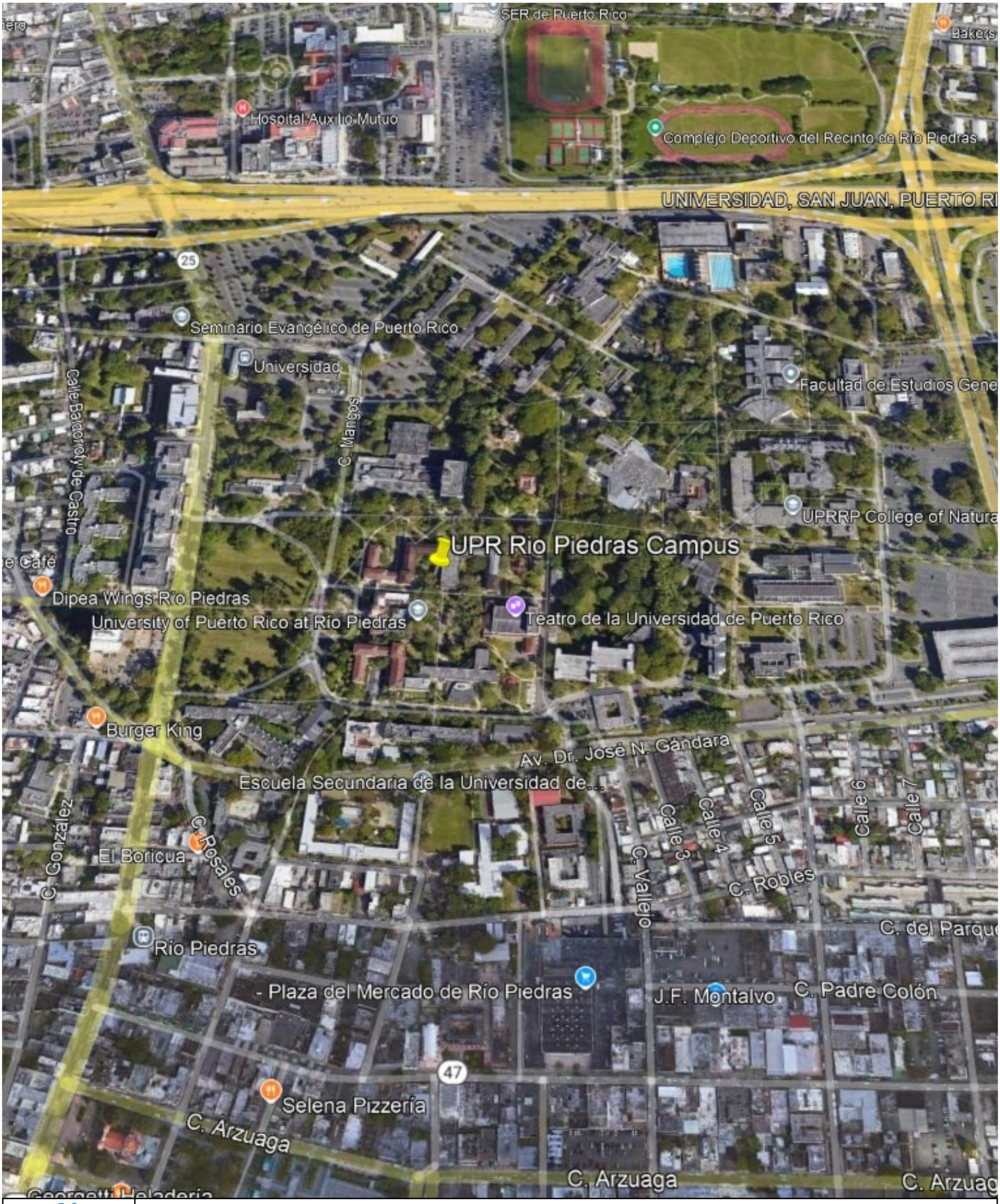
EPA Inspector during the walkthrough the compliance areas discussed with UPR-Rio Piedras Campus' representatives the specific RCRA program regulations that apply to the University Campus, and how to stay in compliance in case they decide to minimize or recover waste streams and implement waste minimization/pollution prevention procedures as required by RCRA.

8 CONCLUSION & FOLLOW-UP ACTIONS

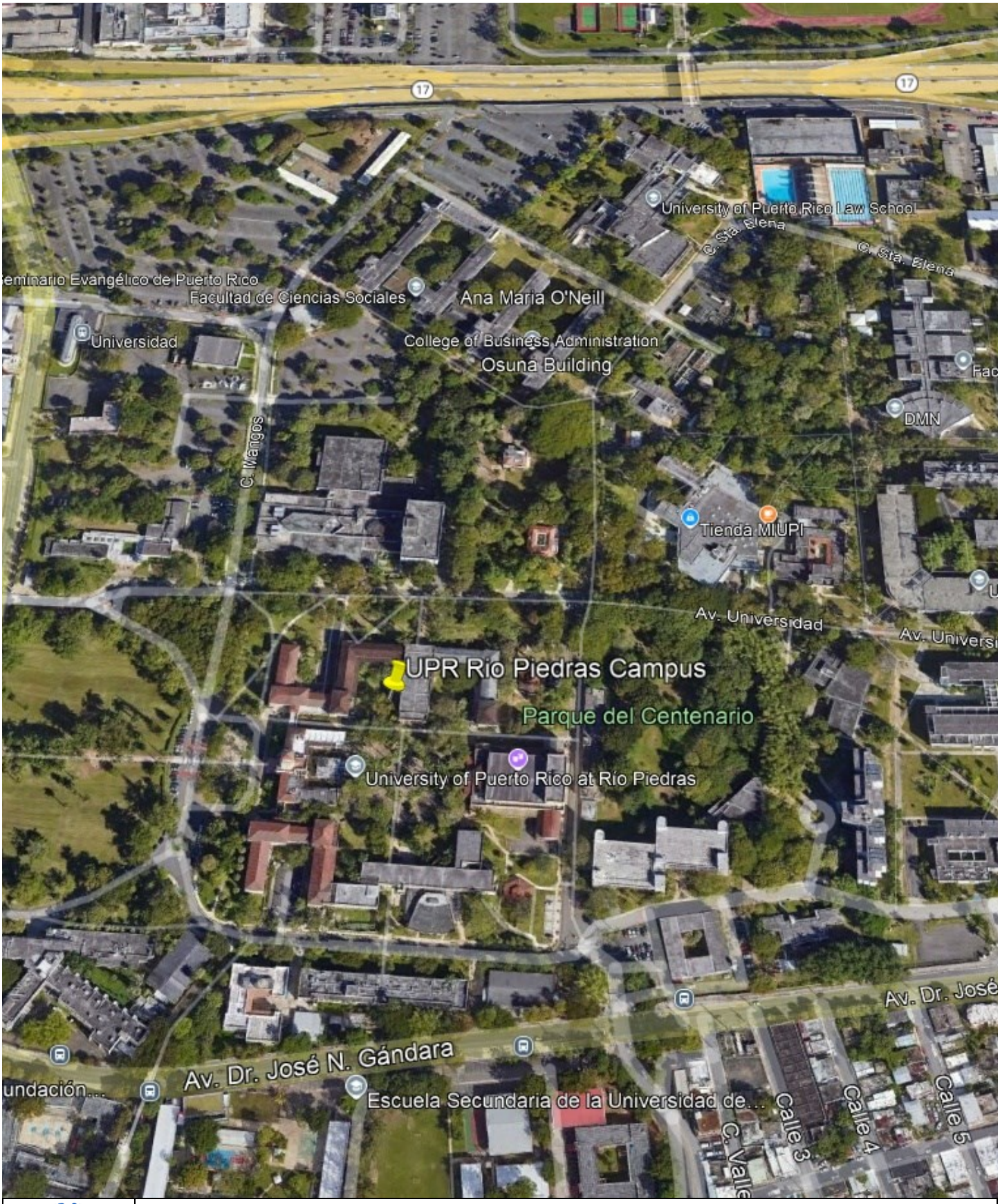
After responding to EPA's observations, inspection of regulated areas and completion of a document session, EPA determined that the hazardous waste management program at UPR-Rio Piedras Campus was not satisfactory as required by the RCRA program, and that potential violations on applicable hazardous waste regulations were found.

9 ATTACHMENTS

I. Figure 1-Facility Location Map and Figure-2 Aerial Photograph
II. Photolog and Camera Roll (include all pictures taken during the inspection)

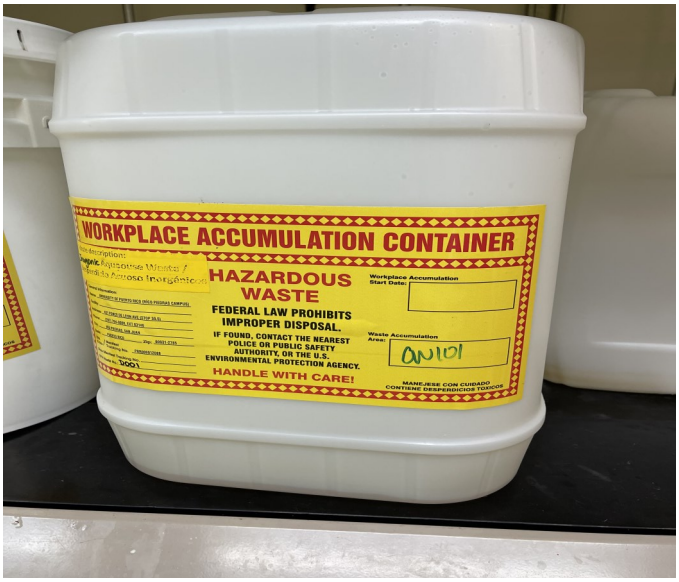


Title: **Figure 1: University of Puerto Rico—Rio Piedras Campus, Puerto Rico - Location Map**	
EPA ID: **PRR000012088**	Project: **CEPD-RCRA-24-0442**



Title: **Figure 2: University of Puerto Rico –Rio Piedras Campus, Puerto Rico - Aerial Photo**	
EPA ID: **PRR000012088**	Project: **CEPD-RCRA-24-0442**

Picture 1 - UPR NATURAL SCIENCES - At the Lab CN-101, there was one (1) 5-gallon white container with "Organic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA codes "D001" and "D002" and with its hazard pictograms as "Ignitable, and Corrosive" as required by RCRA.

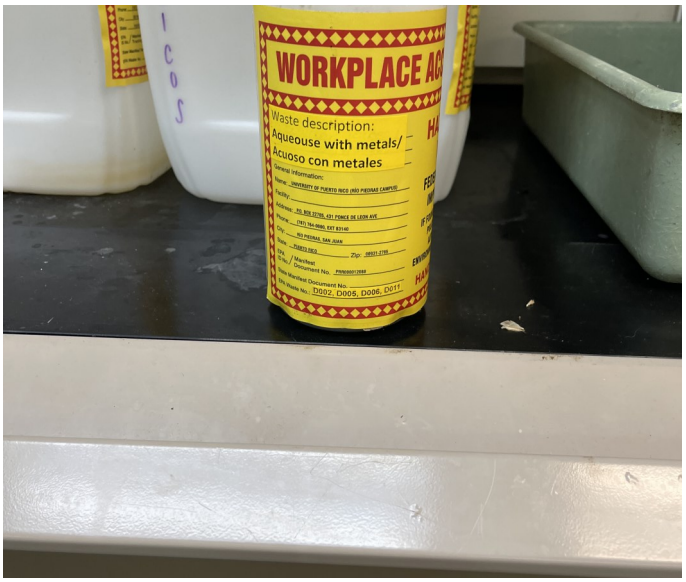


Picture 2 - UPR NATURAL SCIENCES - At the Lab CN-101, there was one (1) 5-gallon white container with "Inorganic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with a RCRA code "D002"and not with its hazard communication pictogram "Corrosive Liquids, "as required by RCRA.

Picture 3 - UPR NATURAL SCIENCES - At the Lab CN-101, there was one (1) 5-gallon white container with "Spent Non-Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA codes and with its hazard communication pictogram "Flammable Liquids."

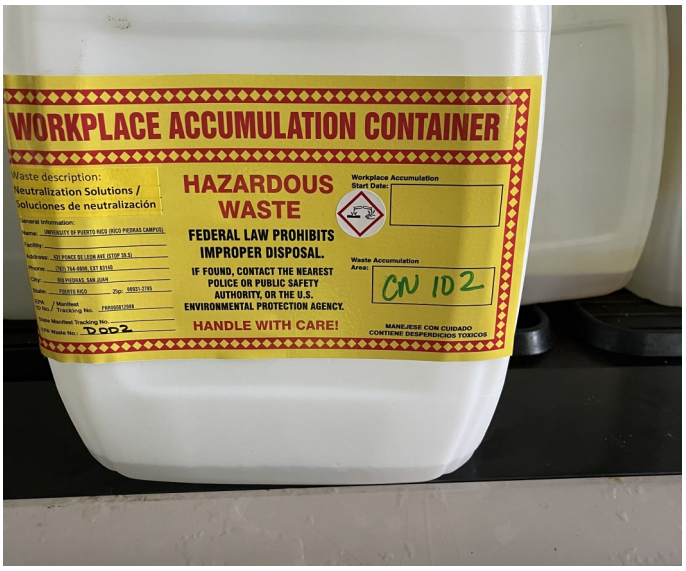
Picture 4 - UPR NATURAL SCIENCES - At the Lab CN-101, there was one (1) 5-gallon white container with "Solid Waste" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified as "F003" and not identified with its pictogram "Flammable Solids."

EPA United States Environmental Protection Agency	Title: **UPR Rio Piedras Campus, Rio Piedras, Puerto Rico**	Pictures taken by: **Eduardo Gonzalez** **June 27–28, 2024**
	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	

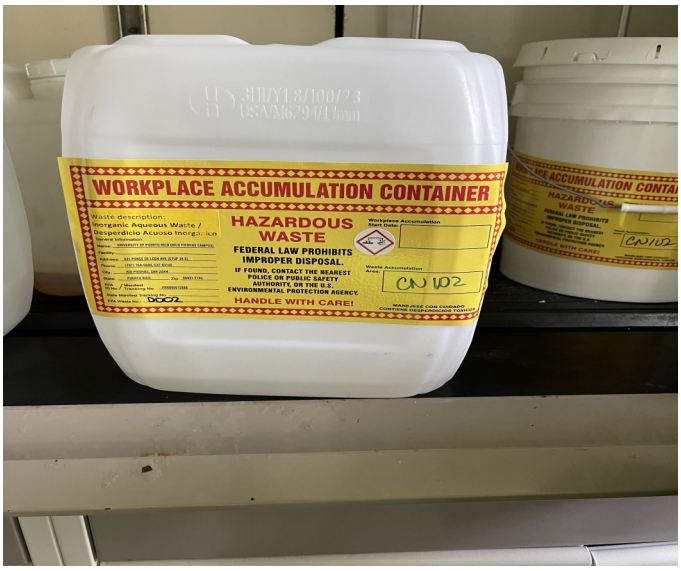


Picture 5 - UPR NATURAL SCIENCES - At the Lab CN-101, there was one (1) 1-liter white container with "Heavy Metals Aqueous Solution Wastes," labeled as "Hazardous Waste," and identified with RCRA codes D002, D005 (Barium), D006 (Cadmium), D011 (Silver) and with its pictogram "Corrosive."

Picture 6 - UPR NATURAL SCIENCES - At the Lab CN-102, EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms.

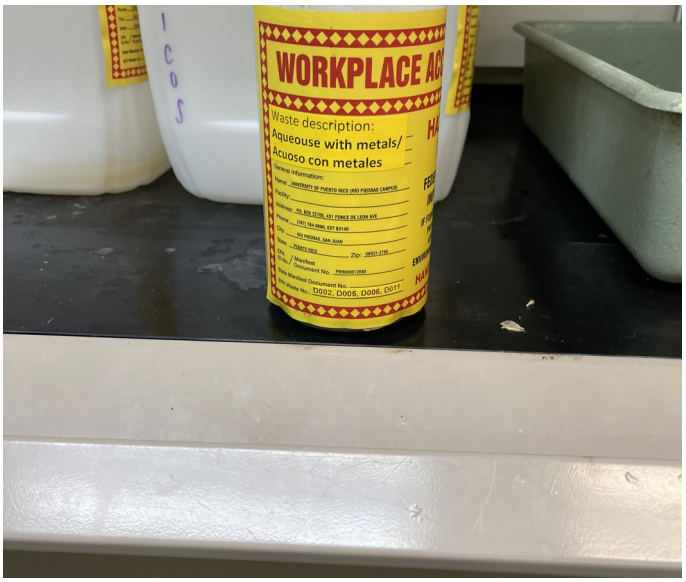


Picture 7 - UPR NATURAL SCIENCES - At the Lab CN-102, there was one (1) 5-gallon white container with "Neutralization Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA code "D002" (i.e., corrosive) and with its hazard communication pictogram "Corrosive Liquids."



Picture 8 - UPR NATURAL SCIENCES - At the Lab CN-102, there was one (1) 5-gallon white container with "Inorganic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with a RCRA code "D002"and not with its hazard communication pictogram "Corrosive Liquids, "as required by RCRA.

EPA United States Environmental Protection Agency	Title: **UPR Rio Piedras Campus, Rio Piedras, Puerto Rico**	Pictures taken by: **Eduardo Gonzalez** **June 27–28, 2024**
	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	



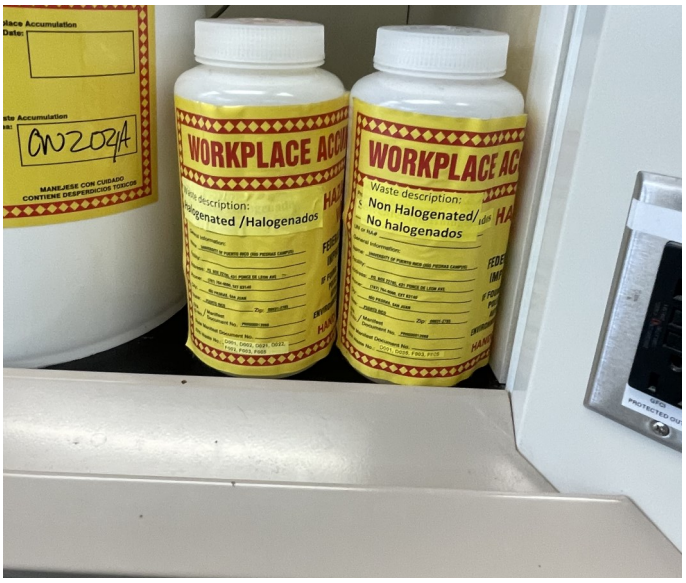
Picture 9 - UPR NATURAL SCIENCES - At the Lab CN-104, EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms.

Picture 10 - UPR NATURAL SCIENCES - At the Lab CN-104, there was one (1) 5-gallon white container with "Organic Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with RCRA codes "D001" and "D002" and with its hazard pictograms as "Ignitable, and Corrosive" as required by RCRA.

Picture 11 - UPR NATURAL SCIENCES - At the Lab CN-204A, EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms.

Picture 12 - UPR NATURAL SCIENCES - At the Lab CN-204A, there was one (1) 5-gallon white container with "Inorganic Aqueous Wastes," and one (1) 5-gallon white container with "Solid Waste" both labeled with the words "Hazardous Waste," but not identified with their hazard pictograms.

United States Environmental Protection Agency	Title: **UPR Rio Piedras Campus, Rio Piedras, Puerto Rico**	Pictures taken by: **Eduardo Gonzalez** **June 27–28, 2024**
	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	



Picture 13 - UPR NATURAL SCIENCES - At the Lab CN-204A, there were two (2) 1-liter white containers with "Spent Non-Halogenated Solvent Wastes," labeled with the words "Hazardous Waste," and identified with RCRA codes and but not their hazard communication pictograms "Flammable Liquids."

Picture 14 - UPR NATURAL SCIENCES - At the Lab CN-204B, EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms.

Picture 15 - UPR NATURAL SCIENCES - At the Lab CN-204B, EPA Inspector noted varius containers with "Spent Non-Halogenated Solvent Wastes," "Spent Halogenated Solvent Wastes,"and "Heavy Metals Wastes," labeled with the words "Hazardous Waste," but not posted with hazard pictograms.

Picture 16 - UPR NATURAL SCIENCES - At the Lab CN-203A, EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms.

EPA United States Environmental Protection Agency	Title: **UPR Rio Piedras Campus, Rio Piedras, Puerto Rico**	Pictures taken by: **Eduardo Gonzalez** **June 27–28, 2024**
	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	

Picture 17 - UPR NATURAL SCIENCES - At the Lab CN-203B, EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms.

Picture 18 - UPR NATURAL SCIENCES - At the Lab CN-303, EPA Inspector noted varius containers with "Organic and Inorganic Solvens,""Heavy Metals Wastes," and "Solid Wastes," labeled with the words "Hazardous Waste," but not posted with hazard pictograms.

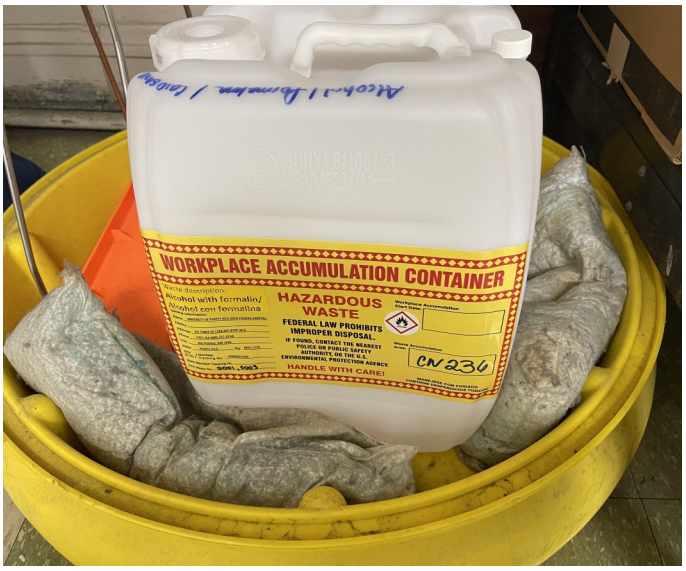
Picture 19 - UPR NATURAL SCIENCES - At the Lab CN-303, EPA indicated that storage of chemical reagents at laboratory cabinets was conducted without following any safety protocols or compatibility characteristics of the reagents failing to minimize the possibility of a fire, explosion, or any violent reaction.

Picture 20 - UPR NATURAL SCIENCES - At the Lab CN-303, EPA also indicated that chemical reagents did not appear to be segregated by compatibility, and that shelving was not self-contained to prevent chemical leaks or spillage from incompatible waste containers.

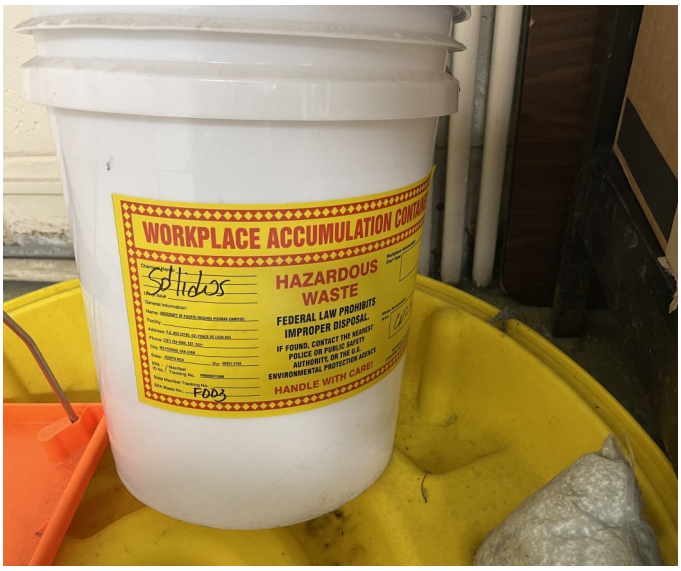
EPA United States Environmental Protection Agency	Title: **UPR Rio Piedras Campus, Rio Piedras, Puerto Rico**	Pictures taken by: **Eduardo Gonzalez** **June 27–28, 2024**
	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	

Picture 21 - UPR NATURAL SCIENCES - At the Lab CN-301, EPA Inspector noted that containers were in good conditions and sealed to secure of any potential releases of waste content, however, some containers were not properly identified nor posted with their hazardous communication pictograms.

Picture 22 - UPR NATURAL SCIENCES - At the Lab CN-234, EPA Inspector noted that the container with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," but not identified with its hazard communication pictogram "Flammable Solids."



Picture 23 - UPR NATURAL SCIENCES - At the Lab CN-236, there was one (1) 5-gallon white container with "Formaldehyde with Methanol Aqueous Wastes," labeled with the words "Hazardous Waste," and identified with a RCRA code "D001" and with its hazard communication pictogram "Flammable Liquids."



Picture 24 - UPR NATURAL SCIENCES - At the Lab CN-236, there was one (1) 5-gallon white container with "Solid Wastes" contaminated with laboratory silica trash" labeled with the words "Hazardous Waste," and identified with RCRA F003, but was not identified with its hazard on pictogram "Flammable Solids."

EPA United States Environmental Protection Agency	Title: **UPR Rio Piedras Campus, Rio Piedras, Puerto Rico**	Pictures taken by: **Eduardo Gonzalez** **June 27–28, 2024**
	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	

Picture 25 - UPR NATURAL SCIENCES - At the Lab CN-006, EPA Inspector observed the storage of these "Organic Chemical Reagents" conducted following Flinn's safety protocols and compatibility characteristics to minimize the possibility of a fire, explosion, or any chemical violent reaction.

Picture 26 - UPR NATURAL SCIENCES - At the Lab CN-006, EPA Inspector observed the storage of these "Organic Chemical Reagents" conducted following Flinn's safety protocols and compatibility characteristics to minimize the possibility of a fire, explosion, or any chemical violent reaction.

Picture 27 - UPR BUILDINGS AND LAND DEPARTMENT - At the UW area there were two (2) 55-gallon black steel drums without lids (open) containing "Ballast" which were removed from aluminum frames. None of the drums were clearly labeled with the words, "Universal Waste-Mercury Containing Equipment."

Picture 28 - UPR BUILDINGS AND LAND DEPARTMENT - At the UW area there were two (2) 2'- Dia cylindrical cardboard "open" packing over twenty (20) 4-foot spent fluorescent lamps, both open and labeled with the words, "Universal Waste"and dated with their accumulation start dates of June 17 and 18, 2024.

EPA United States Environmental Protection Agency	Title: **UPR Rio Piedras Campus, Rio Piedras, Puerto Rico**	Pictures taken by: **Eduardo Gonzalez** **June 27–28, 2024**
	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	

Picture 29 - UPR BUILDINGS AND LAND DEPARTMENT - At the UW area there was one (1) square cardboard box (1'x1'x 2') "open" packing over forty (40) 2-foot spent fluorescent lamps labeled with the words, "Universal Waste," and dated with their accumulation start date of June 17, 2024.

Picture 30 - UPR BUILDINGS AND LAND DEPARTMENT - At the UW area there were two (2) square cardboard boxes (1'x1'x 2') "open" packing over twenty (20) spent spiral led light bulbs and curved led bulbs labeled with the words, "Universal Waste," not as "Universal Waste-Mercury Containing Equipment," nor dated.

Picture 31 - UPR BUILDINGS AND LAND DEPARTMENT - At the UW area there were three (3) square cardboard box (1'x1'x 2') "open" packing over ten (10) spent high-density halogen bulbs labeled with the words, "Universal Waste," nor dated with their accumulation start dates .

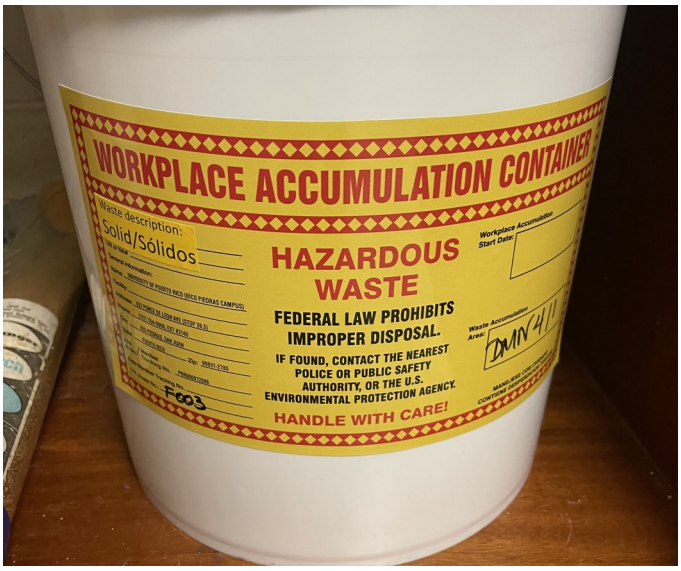
Picture 32 - UPR MECHANIC SHOP - At the Mechanic Shop area, there were two (2) 55-gallon black drum closed with used oil, and one drum funnel with used oil residues not marked with the words, "Used Oil."

EPA United States Environmental Protection Agency	Title: **UPR Rio Piedras Campus, Rio Piedras, Puerto Rico**	Pictures taken by: **Eduardo Gonzalez** **June 27–28, 2024**
	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	

Picture 33 - UPR Welding Iron Shop - At the Welding Shop area, there was one (1) 5-gallon white container with mineral spirits used to clean parts, components, and the residual waste gets collected in the container and later disposed of as "Hazardous Wastes," by OPASO.

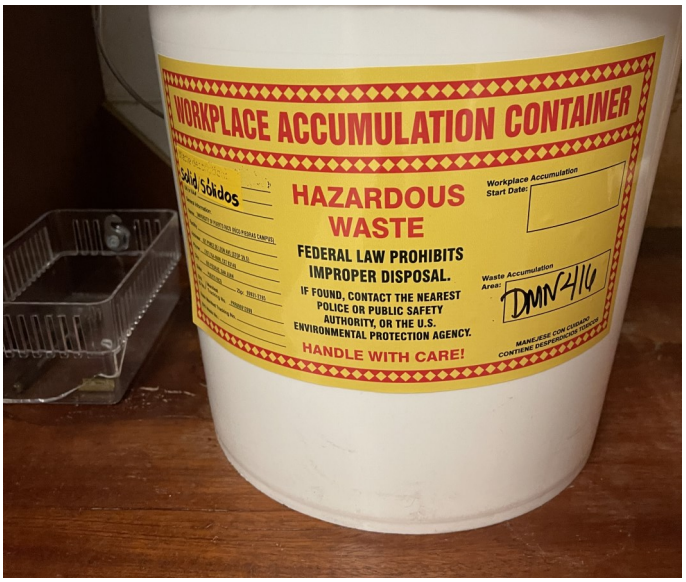
Picture 34 - UPR Welding Iron Shop - At the Welding Shop area, there was one (1) 1-gallon pail with wallboard compound to be discarded as "Hazardous Wastes," and pick up by OPASO officials.

Picture 35 - UPR GENERAL STUDIES - At the Lab DMN-411, there were two (2) 5-gallon white containers with "Heavy Metals Aqueous Solution Wastes," labeled as "Hazardous Waste," and identified with RCRA codes D002, D005 (Barium), D006 (Cadmium), D011 (Silver) and with its pictograms "Corrosive."

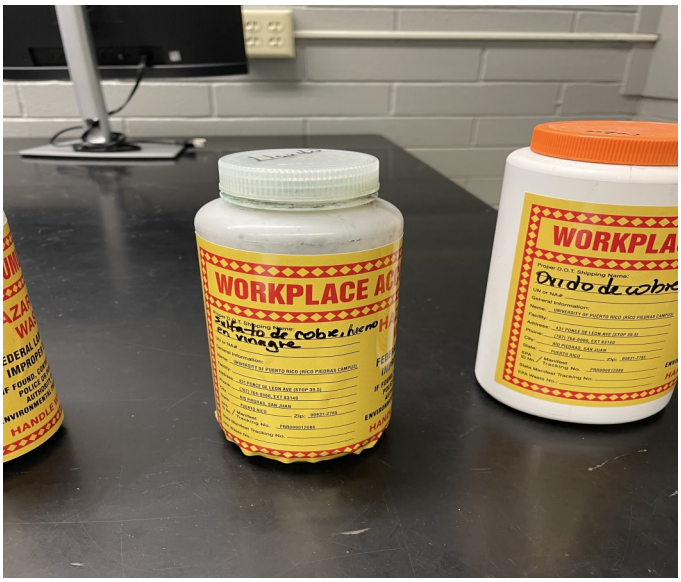


Picture 36 - UPR GENERAL STUDIES - At the Lab DMN-411, there was one (1) 5-gallon white container with "Solid Waste" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified as "F003" and not identified with its pictogram "Flammable Solids."

EPA United States Environmental Protection Agency	Title: **UPR Rio Piedras Campus, Rio Piedras, Puerto Rico**	Pictures taken by: **Eduardo Gonzalez** **June 27–28, 2024**
	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	



Picture 37 - UPR GENERAL STUDIES - At the Lab DMN-416, there was one (1) 5-gallon white container with "Solid Waste" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified as "F003" and not identified with its pictogram "Flammable Solids."



Picture 38 - UPR GENERAL STUDIES - At the Lab DMN-416, there were three (3) 1-Liter white container swith "Heavy Metals Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and identified as Cupper Sulfate, Iron and Acetic Acid s not identified with its hazard pictogram as "Corrosive Liquids."

Picture 39 - UPR GENERAL STUDIES - At the Lab DMN-412, there were two (2) 5-gallon white containers with "Heavy Metals Aqueous Solution Wastes," and "Solid Wastes," labeled as "Hazardous Waste," and not identified with its pictograms "Corrosive Liquids," or "Flammable Solids ."

Picture 40 - UPR GENERAL STUDIES - At the Lab DMN-412, chemical reagents were stored in a blue cabinet identified as "Corrosive," and included hydrochloric acid, acetic acid anhydrous, sulfuric acid, acetic acid glacial, without any safety protocols or compatibility characteristics of the reagents.

EPA United States Environmental Protection Agency	Title: **UPR Rio Piedras Campus, Rio Piedras, Puerto Rico**	Pictures taken by: **Eduardo Gonzalez** **June 27–28, 2024**
	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	

Picture 41 - UPR GENERAL STUDIES - At the Lab DMN-412, chemical reagents were stored in a yellow cabinet identified as “Flammable,” and included Methanol, Ethyl Alcohol, Acetone, Formaldehyde (i.e., a flammable and an explosion hazard) along with other oils and Magnesium Silicone (“Non-Flammable”).

Picture 42 - UPR GENERAL STUDIES - At the Lab DMN-412, chemical reagents were found stored in a black cabinet including strontium choride (toxic and corrosive), arsenic acid (corrosive and very toxic), sodium hydroxide (strong base), potassium chloride (toxic), and ammonium sulfate in an incompatible manner.

Picture 43 - UPR GENERAL STUDIES - At the Lab DMN-414, there were two (2) 5-gallon white containers with “Heavy Metals Aqueous Solution Wastes,” and “Solid Wastes,” labeled as “Hazardous Waste,” one identified with its pictogram “Corrosive Liquids," and not the other as “Flammable Solids.”

Picture 44 - UPR GENERAL STUDIES - At the Lab DMN-413, there were two (2) 5-gallon white containers with “Heavy Metals Aqueous Solution Wastes,” and “Solid Wastes,” labeled as “Hazardous Waste,” one identified with its pictogram as “Corrosive Liquids," and not the other as “Flammable Solids.”

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Title:

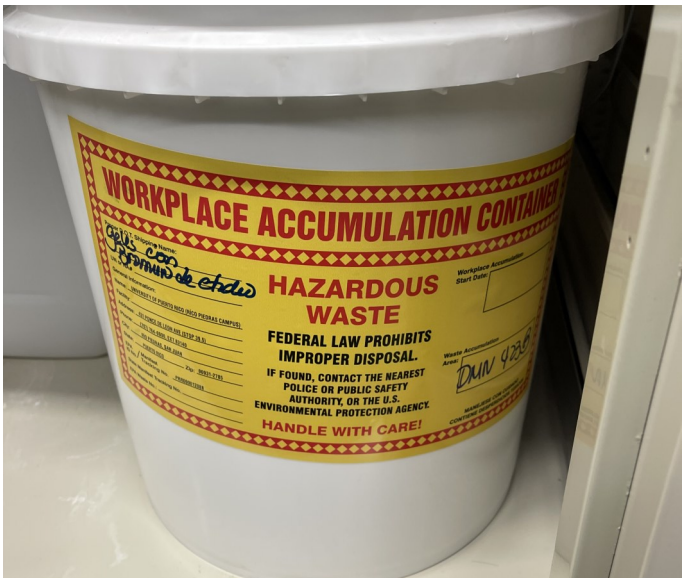
UPR Rio Piedras Campus, Rio Piedras, Puerto Rico

EPA ID: **PRR000012088**

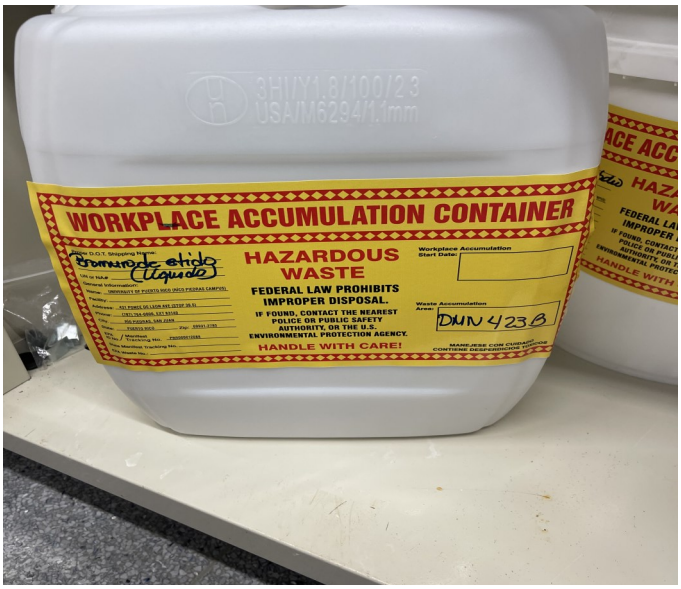
Project: **CEPD-RCRA-24-0442**

Pictures taken by:

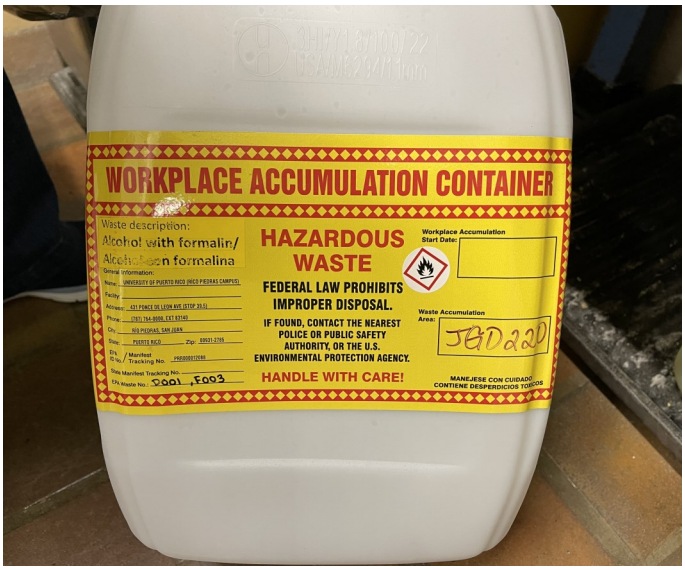
Eduardo Gonzalez
June 27–28, 2024



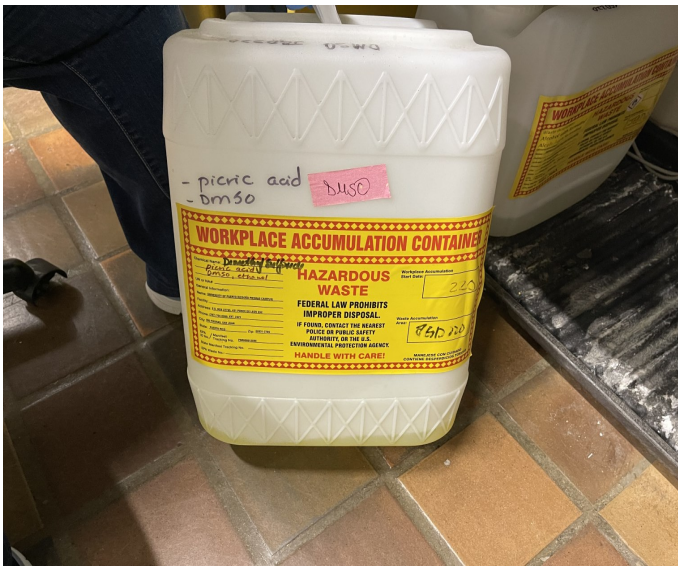
Picture 45 - UPR GENERAL STUDIES - At the Lab DMN-423-B, there was one (1) 5-gallon white container with "Ethidium Bromide Gel Wastes," labeled with the words "Hazardous Waste," and not identified with its RCRA code nor its hazard communication pictogram as required by RCRA regulations.



Picture 46 - UPR GENERAL STUDIES - At the Lab DMN-423-B, there was one (1) 5-gallon white container with "Ethidium Bromide Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and not identified with its RCRA code nor its hazard communication pictogram as required by RCRA.

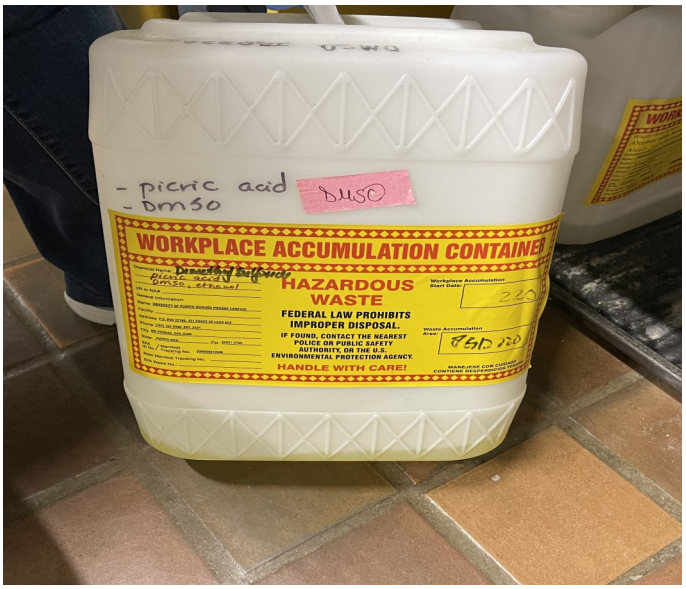


Picture 47 - UPR BIOLOGY DEPARTMENT - At the Lab JGD-220, there was one (1) 5-gallon white container with "Formaldehyde with Methanol Aqueous Wastes," labeled with the words "Hazardous Waste," identified with RCRA codes "D001" and "F003," and its hazard pictogram as "Flammable Liquids."

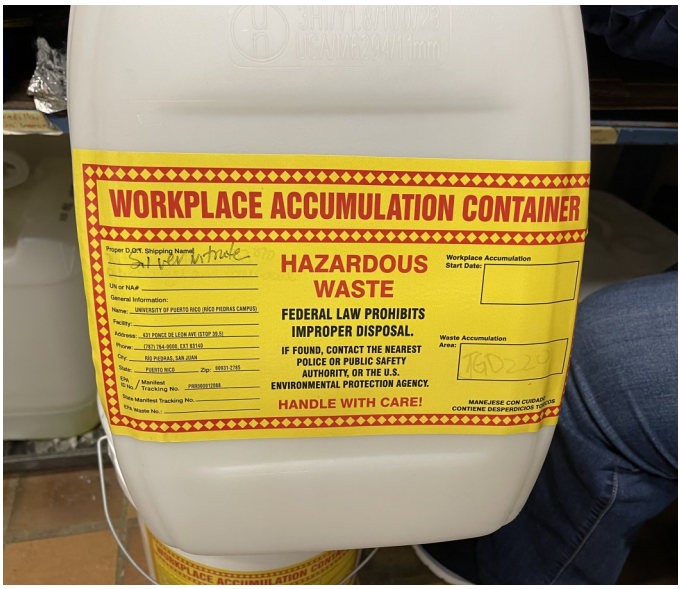


Picture 48 - UPR BIOLOGY DEPARTMENT - At the Lab JGD-220, there was one (1) 5-gallon white container with "Dimethyl Sulfide, Ethanol, Dimethyl Sulfoxide, and Picric Acid," labeled as "Hazardous Waste," and not identified with its RCRA hazardous waste code nor its hazard communication pictogram.

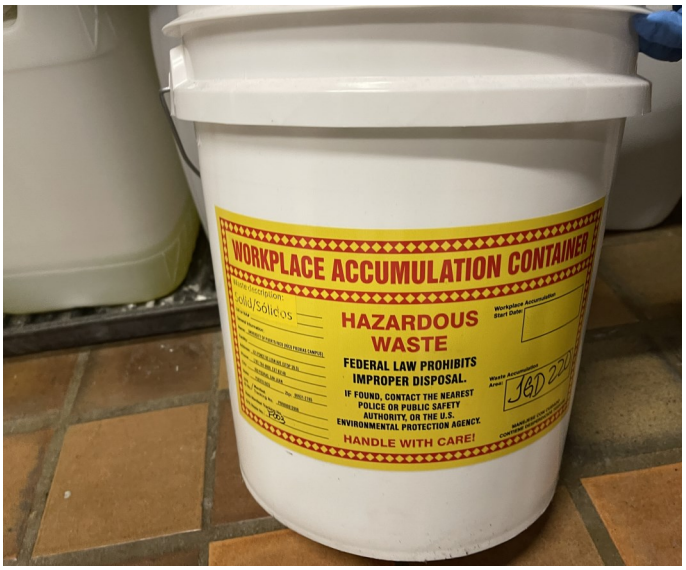
United States Environmental Protection Agency	Title: **UPR Rio Piedras Campus, Rio Piedras, Puerto Rico**	Pictures taken by: **Eduardo Gonzalez** **June 27–28, 2024**
	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	



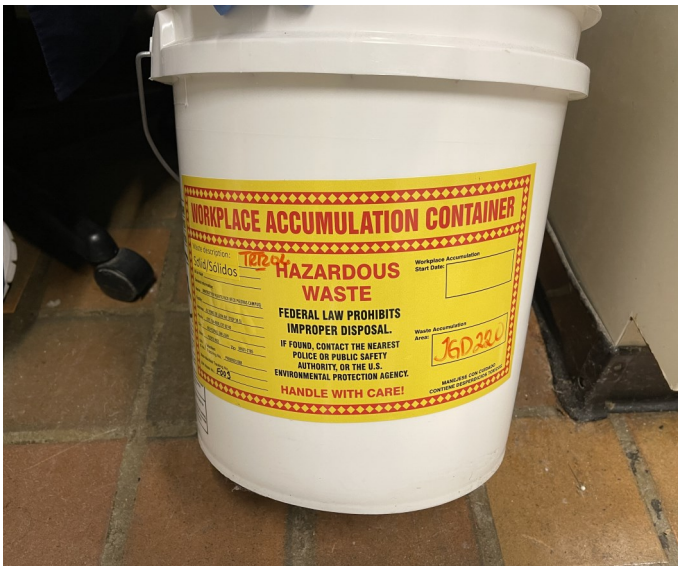
Picture 49 - UPR BIOLOGY DEPARTMENT - At the Lab JGD-220, there was one (1) 5-gallon white container with "Formamide and Paraformaldehyde Aqueous Wastes," labeled as "Hazardous Waste," and identified with its RCRA hazardous waste code "F003," but not its hazard communication pictogram.



Picture 50 - UPR BIOLOGY DEPARTMENT - At the Lab JGD-220, there was one (1) 5-gallon white container with "Silver Nitrate," labeled with the words "Hazardous Waste," and not identified with its RCRA hazardous waste code nor its hazard communication pictogram as required by RCRA regulations.

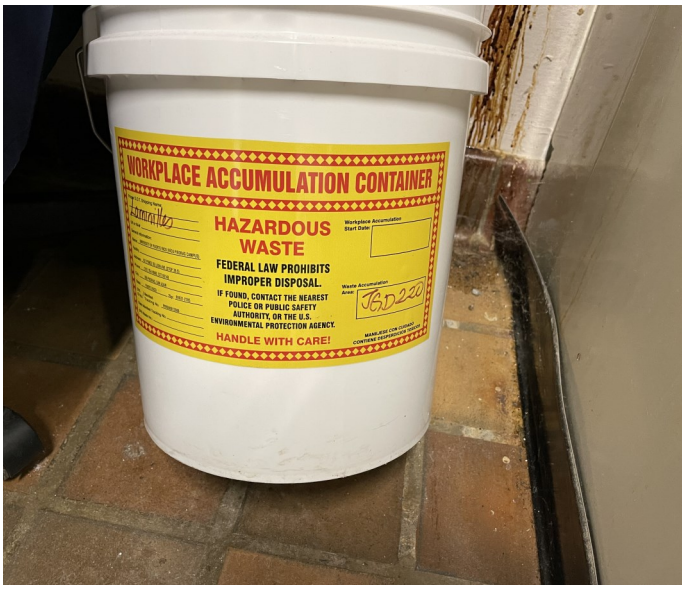


Picture 51 - UPR BIOLOGY DEPARTMENT - At the Lab JGD-220, there was one (1) 5-gallon white container with "Solid Waste" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified as "F003" and not identified with its pictogram "Flammable Solids."



Picture 52 - UPR BIOLOGY DEPARTMENT - At the Lab JGD-220, one (1) 5-gallon white container with "Solid Waste-Trizol" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," and identified as "F003" and not identified with its pictogram "Flammable Solids."

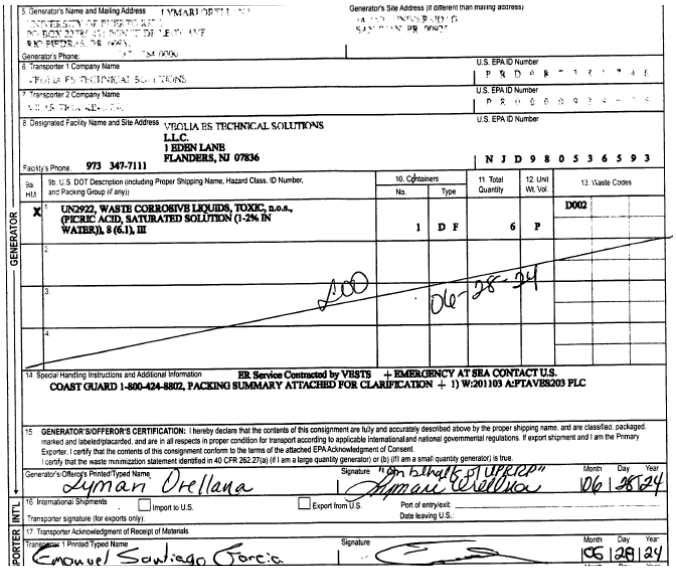
EPA United States Environmental Protection Agency	Title: **UPR Rio Piedras Campus, Rio Piedras, Puerto Rico**	Pictures taken by: **Eduardo Gonzalez** **June 27–28, 2024**
	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	



Picture 53 - UPR BIOLOGY DEPARTMENT - At the Lab JGD-220, there was one (1) 5-gallon white container with "Laminillas - Microscope Slides," labeled with the words "Hazardous Waste," and not identified with its RCRA hazardous waste code nor its hazard communication pictogram as required by RCRA.

Picture 54 - UPR BIOLOGY DEPARTMENT - At the Lab JDG 220 chemical reagents were stored together inside a hood cabinet including various bottles of hydrochloric acid "Corrosive," acetic acid anhydrous and glacial, and an expired picric acid bottle which are incompatible and should not be stored together.

Picture 55 - UPR BIOLOGY DEPARTMENT - At the Lab JGD-220, there was one (1) 4-Liter container with expired picric acid that was surrounded by various corrosive such as acetic acid anhydrous and/or glacial acid, hydrochloric acid stored without following any safety protocols or compatibility characteristics.



Picture 56 - UPR BIOLOGY DEPARTMENT - At the Lab JGD-220, it was requested by Ms. Lymari Orellana from OPASO that the expired Picric Acid be removed by Veolia Environmental Services next morning under an emergency respond action (Manifest 002383243 VES).

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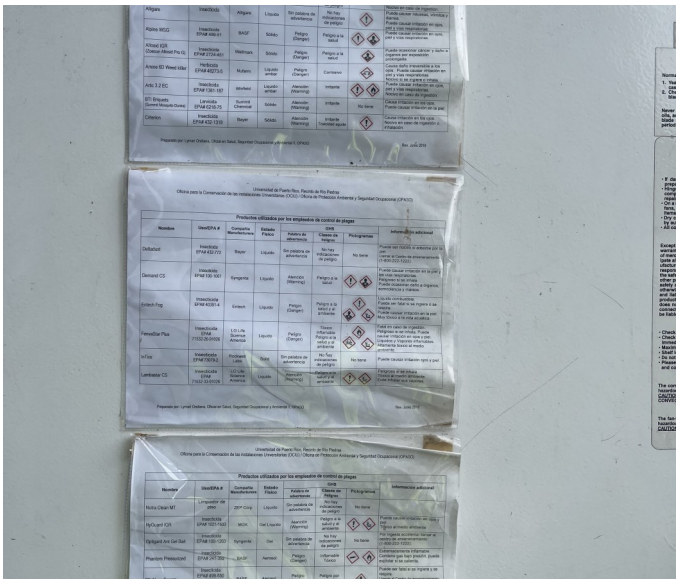
	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	

Picture 57 - UPR PESTICIDE WAREHOUSE - At Pesticide Warehouse seemed clean, organized, secured, and under the control of the operator.



Picture 58 - UPR PESTICIDE WAREHOUSE - At the Pesticide Warehouse pesticide materials were well documented, in good conditions, dated and identified according to characteristic properties as required by FIFRA.

Picture 59 - UPR 90-DAY CENTRAL HAZARDOUS WASTE STORAGE - At the 90-Day Central Storage Area there was not any hazardous waste present in the shed at the time of the inspection and was used to store spill prevention materials and emergency equipment.

Picture 60 - UPR PAINT WAREHOUSE - At the Paint Warehouse there were approximately fifty-six (56) 5-gallon pails seemed clean, organized, secured and under the control of the supervisor. All paints were well documented, in good conditions, dated and identified as "Lanco – Marking Coat."

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	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	

Picture 61 - UPR CLEANING PRODUCTS WAREHOUSE - At the Cleaning Products Warehouse there were many of the cleaning solvent products were concentrated and contained hazardous substances as active ingredients.

Picture 62 - UPR CLEANING PRODUCTS WAREHOUSE - At the Cleaning Products Warehouse the inventory of products is always in use, and that expired products, if any, are disposed of as hazardous waste with OPASO such as peroxy (concentrated), DMQ Dam Mop Neutral (concentrated) among others.

Picture 63 - UPR SWIMMING POOL AREA - At the Swimming Pool Area no chorine gas is used at the at the swimming pool area instead all choline treatment is based on solid dosage of Sodium Chloride (NaCl) by a Pulsar 4 System.

Picture 64 - UPR SWIMMING POOL AREA - At the Swimming Pool Area there was a chemical storage room for the swimming pool for the continuous maintenance of the pool water.

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	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	

Picture 65 - UPR ORNAMENT AND CONSERVATION SHOP - At the Ornament and Conservation Shop area there were approximately nine (9) 5-gallon red and eight yellow container with gasoline or mixture (diesel) for the trimmers, movers and other gardening machines to operate equipment parts.

Picture 66 - UPR BIOSENSOR RESEARCH FOR HEALTH LABORATORY - At the Lab FB-140, there were Six (6) 5-gallon white containers containing radioactive waste of "Uranyl Acetate," being stored inside a blue cabinet labeled with the words "Hazardous Waste," and not identified with RCRA codes nor its pictograms.

Picture 67 - UPR BIOSENSOR RESEARCH FOR HEALTH LABORATORY - At the Lab FB-140, there were another Satellite Accumulation Area (SAA) with four (4) 5-gallon containers inside a cabinet labelled as "Organic Aqueous Wastes," "Inorganic Aqueous Wastes," "Solid Wastes,"and "Neutralization Solution Wastes."

Picture 68 - UPR CELLULAR CULTURE VIROLOGY LABORATORY - At the Lab FB-136, there were two (2) 5-gallon containers with "Solid Waste" and "Heavy Metals Aqueous Solution Wastes," labeled as "Hazardous Waste," identified with RCRA codes and its hazard communication pictograms.

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	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	

Picture 69 - UPR ELECTROCHEMISTRY RESEARCH LABORATORY - At the Lab FB-101-A, there were four (4) 1-Liter bottles with "Lithium Wastes," inside a pressurized chamber labeled as "Hazardous Waste," not identified with RCRA codes nor its hazard communication pictograms.

Picture 70 - UPR ELECTROCHEMISTRY RESEARCH LABORATORY - At the Lab FB-101-A, there was one (1) 5-gallon white container with "Spent Lithium Batteries Wastes," labeled as "Hazardous Waste," identified with RCRA codes "D001" and "D003" and with its hazard communication pictogram "Flammable."

Picture 71 - UPR UPR ELECTROCHEMISTRY RESEARCH LABORATORY - At the Lab FB-101-A, there were three (3) 5-gallon containers with "Zinc Chloride Electrodes," "Cadmium Solid Wastes", Lithium Phosphate and Sulfured Wastes" and one (1) 1-Liter with "Syringes," contaminated with alcohol as "Hazardous Wastes."

Picture 72 - UPR MATERIALS SCIENCE RESEARCH LABORATORY - At the Lab FB-205, there were four (4) 5-gallon containers with "Organic Solvents," "Non-Halogenated", "Halogenated Wastes, "Neutralization Waste," all labeled as Hazardous Wastes, RCRA codes and hazard communication pictograms.

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	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	

Picture 73 - UPR MATERIALS SCIENCE RESEARCH LABORATORY - At the Lab FB-205, there was one (1) 1-Liter white container with "Heavy Metals Aqueous Solution Wastes," labeled with the words "Hazardous Waste," and identified with RCRA codes "D002, D005, D006, D011 and with no pictogram.

Picture 74 - UPR MATERIALS SCIENCE RESEARCH LABORATORY - At the Lab FB-205, there was one (1) 55-gallon blue drum with "Solid Wastes" contaminated with laboratory silica trash and desiccant" labeled with the words "Hazardous Waste," identified with RCRA "F003" and pictogram "Flammable Solids."

Picture 75 - UPR MATERIALS SCIENCE RESEARCH LABORATORY - At the Lab FB-204, there were three (3) 5-gallon white containers with "Lithium Batteries Wastes," "Syringes," and "Carbon Black Graphite," all labeled as "Hazardous Waste," identified with RCRA codes and one with no pictogram.

Picture 76 - UPR MATERIALS SCIENCE RESEARCH LABORATORY - At the Lab FB-204, there was one (1) gallon white container containing "Used Oil," below a bench table and labeled with the words "Used Oil," as required by RCRA regulations.

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	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	

Picture 77 - UPR MATERIALS CHARACTERIZATION CENTER - At the Lab FB-267-A, there were four (4) 5-gallon containers with "Organic Solvents," "Non-Halogenated", "Halogenated Wastes, "Solid Waste," all labeled as Hazardous Wastes, RCRA codes and hazard communication pictograms.

Picture 78 - UPR MATERIALS CHARACTERIZATION CENTER - At the Lab FB-267-A, there was one (1) 5-gallon white container containing "Used Oil," on a mat placed on the floor and not properly labeled with the words "Used Oil," as required by RCRA regulations.

Picture 79 - UPR MATERIALS CHARACTERIZATION CENTER - At the Lab FB-267-A, there was one (1) 5-gallon white container with mobile phase "HPLC" (ACN/Water/ETOH 90/10) connected to HPLC labeled as "Hazardous Waste," not identified with RCRA code nor with its hazard pictogram "Flammable Liquids."

Picture 80 - UPR MATERIALS CHARACTERIZATION CENTER - At the Lab FB-267-A, there was one (1) 3-gallon white container with a spent mobile phase "HPLC" connected to a HPLC not labeled as "Hazardous Waste," not RCRA code "D001" nor with its hazard communication pictogram "Flammable Liquids."

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	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	

Picture 81 - UPR MATERIALS CHARACTERIZATION CENTER - At the Lab FB-267-A, numerous expired chemicals (1999), discarded, contaminated, unused chemical reagents, deteriorated and stored for a long time in shelves without any physical means to protect each other from incompatibility characteristics.

Picture 82 - UPR MATERIALS CHARACTERIZATION CENTER - At the Lab FB-267-A, there was not hazardous waste determination being performed on abandoned, expired, not in use, discarded hazardous chemical waste inventory before its final disposal nor have been managed under the Flinn Lab Management Plan.

Picture 83 - UPR ECOLOGICAL RESEARCH LABORATORY - At the Lab FB-253, there were three (3) 5-gallon containers with "Organic Solvents," "Inorganic Solvents", and "Solid Waste," all labeled as Hazardous Wastes, RCRA codes and hazard communication pictograms.

Picture 84 - UPR ECOLOGICAL RESEARCH LABORATORY - At the Lab FB-253, chemical reagents were found stored in a blue cabinet including formaldehyde (toxic and flammable), hydrogen peroxide (oxidizer), sodium hydroxide (strong base), pyridine (toxic), and ammonium acetate in an incompatible manner.

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	EPA ID: **PRR000012088** Project: **CEPD-RCRA-24-0442**	