Administrative Policy and Procedure for Hazardous Waste Disposal

1.0 Purpose – To ensure all employees of the Physical Evidence Section are aware of hazardous waste disposal procedures.

2.0 Scope – This policy applies to all employees of the Physical Evidence Section who generate hazardous waste.

3.0 Policy

3.1 In accordance with the North Carolina State Crime Laboratory (State Crime Laboratory) Safety Manual, a hazardous waste determination has been performed in the Physical Evidence Section. The items requiring special handling are included in this procedure.

3.2 Hazardous waste generated by the Physical Evidence Section includes laboratory waste (chemicals and solvents) as identified in the attached disposal guide. The purpose of this guide is to assist Section personnel with hazardous waste regulatory requirements and ensure that Federal and State requirements are satisfied. Employees with questions concerning waste disposal procedures should contact the Section Safety Officer or the Laboratory Safety Officer.

4.0 Hazardous Waste Management Procedures:

4.1 Each Physical Evidence Section employee shall properly dispose of all used and unused chemicals and solutions.

4.2 Laboratory sink drains shall not be used for the disposal of hazardous materials and other chemical waste, except as specifically identified in this guide.

4.3 Every attempt shall be made to separate hazardous waste from bio-hazardous waste. If this is not possible, it is possible to dispose of hazardous waste in biohazard waste containers.

4.4 Concentrated acids and bases shall not be flushed down the Laboratory drain at any time unless previously neutralized. However, for solutions which have a pH between 3 and 12, do not contain any known hazardous or toxic materials, or otherwise meet the definition of a characteristic waste, the solution may be disposed of by flushing down the Laboratory drain. Working solutions of acids may be neutralized by the addition of dilute base, such as sodium hydroxide, while working solutions of bases may be neutralized by the addition of dilute acid, such as hydrochloric acid. The pH of a solution is to be determined using a calibrated pH meter or suitable litmus paper.

4.5 Empty Containers - Generally, empty bottles or containers are not considered hazardous waste. These containers shall be rinsed in the sink to remove any remaining residue, the labels removed or defaced, and the bottles disposed of in an appropriate trash container. Containerized liquids shall not be disposed of in the general Laboratory trash.

4.5.1 Empty containers of acutely hazardous material (e.g., cyanide), referred to as a P-listed material by the EPA, shall be triple-rinsed and the rinsate collected and disposed of as hazardous waste. After the container has been triple rinsed and the labels removed or defaced, they may be disposed of directly into a trash container.

4.5.2 Empty bottles containing residues of flammable solvents, such as methanol, that are hazardous only on the basis of their flammable characteristic, shall be rinsed out and the rinsate discharged down the Laboratory drain. This disposal is permitted only if, during the rinsing process, the flammable is diluted with sufficient water to eliminate the flammable characteristic prior to disposal.

4.6 The contents of each waste container shall be clearly identified. The waste container shall be kept closed at all times, except when adding waste. Waste containers shall be filled to ¾ capacity to prevent the buildup of excessive vapor pressure and to allow adequate room for expansion. When the waste container is filled to ¾ capacity, it shall be placed in the Section's Hazardous Waste Storage Area.

4.7 The appropriate personal protective equipment (i.e., gloves, chemical splash goggles) shall be used and skin contact shall be avoided when working with chemicals. Whenever possible, all processes are to be performed in a chemical fume hood.

5.0 Disposal Guide for Trace Unit Reagents

Waste	Components	RCRA Code	Disposal Procedure
Lead Standard	Lead 5 % nitric acid	D008 D002	Properly label for hazardous waste disposal. Rinse empty containers and place in a trash container.
Barium Standard	Barium 5 % nitric acid	D005 D002	Properly label for hazardous waste disposal. Rinse empty containers and place in a trash container.
Antimony Standard	Antimony 5 % nitric acid	 D002	Properly label for hazardous waste disposal. Rinse empty containers and place in a trash container.
Perkin Elmer 6100 Setup Solution	Barium Lead 5 % nitric acid	D005 D008 D002	Adjust to a pH > 3 and dispose of down the drain with excess water. Rinse empty containers and place in a trash container
Lutetium Standard	Lutetium 5 % nitric acid	 D002	Adjust to a pH > 3 and dispose of down the drain with excess water. Rinse empty containers and place in a trash container
Indium Standard	Indium 5 % nitric acid	 D002	Adjust to a pH > 3 and dispose of down the drain with excess water. Rinse empty containers and place in a trash container
GSR Standard (Stock Solution)	Barium Lead Antimony 10 % nitric acid	D005 D008 D002	Properly label for hazardous waste disposal. Rinse empty containers and place in a trash container.
QC2 (Stock Solution)	Barium Lead Antimony 10 % nitric acid	D005 D008 D002	Properly label for hazardous waste disposal. Rinse empty containers and place in a trash container.
Dual detector Solution	Barium Antimony Lutetium Lead Indium 1 % nitric acid	D005 D008 D002	Properly label for hazardous waste disposal. Rinse empty containers and place in a trash container.
GSR Internal Standard	Lutetium Indium 10 % nitric acid	 D002	Adjust to a pH > 3 and dispose of down the drain with excess water. Rinse empty containers and place in a trash container
Nitric acid solutions (Concentrated, 10 %, 5 % 1 %)		D002	Adjust to a pH> 3 and dispose of down the drain. Rinse empty containers and place in the a trash container
Chloride CE solution	Barium chloride Water		Dispose of down the drain with excess water. Rinse empty containers and place in a trash container

Waste	Components	RCRA Code	Disposal Procedure
Perchlorate CE solution	Potassium perchlorate Water		Dispose of down the drain with excess water. Rinse empty containers and place in a trash container
Nitrate CE solution	Ammonium nitrate Water		Dispose of down the drain with excess water. Rinse empty containers and place in a trash container
Sulfate CE solution	Potassium sulfate Water		Dispose of down the drain with excess water. Rinse empty containers and place in a trash container
Nitrite CE solution	Sodium nitrite Water		Dispose of down the drain with excess water. Rinse empty containers and place in a trash container
Chlorate CE solution	Sodium chlorate Water		Dispose of down the drain with excess water. Rinse empty containers and place in a trash container
Thiosulfate CE solution	Sodium thiosulfate Water		Dispose of down the drain with excess water. Rinse empty containers and place in a trash container
Thiocyanate CE solution	Potassium thiocyanate Water		Dispose of down the drain with excess water. Rinse empty containers and place in a trash container
Acetone		F003 U002 D001	Small amounts may be evaporated. Larger quantities shall be labeled and placed in the hazardous waste storage for disposal. Remove cap from empty containers and allow to dry. Place empty containers in a trash container.
Methanol		F003 U154 D001	
Carbon disulfide		F005 P002	
Chloroform		D002 U044	
Methylene chloride		F002 U080	
Ethyl ether		F003 U117 D001	
Ethyl acetate		F003 U112	
Petroleum ether		D001	
Diphenylamine color test solution	Diphenylamine Sulfuric acid	D002	Adjust to a pH> 3 and dispose of down the drain. Rinse empty containers and place in a trash container.

Waste	Components	RCRA Code	Disposal Procedure
Nessler's Reagent	Potassium hydroxide Potassium iodide Mercuric iodide Water	D002	Adjust to a pH < 12 and dispose of down the drain. Rinse empty containers and place in a trash container.
HPLC waste	Acetonitrile 0.1 % Formic Acid	U003 D002	Evaporate the acetonitrile. Adjust to a pH > 3 and dispose of down the drain. Rinse empty containers and place in a trash container.
Pump Oil			Properly label for hazardous waste disposal. Place empty containers in a trash container.

6.0 Disposal Guide for Firearms Unit Reagents

Waste	Components	RCRA Code	Disposal Procedure
Acetic Acid Solutions (glacial, 15 %)		D002	Adjust to a pH> 3 and dispose of down the drain. Rinse empty containers and place in a trash container.
Greiss Paper Solution	Sulfanilic Acid Alpha-naphthol Water Methanol	D001	Unused solution may be flushed down the Laboratory drain. Used Griess Paper shall be dried and disposed of as biohazard waste due to potential contact with body fluids. Rinse empty containers and place in a trash container.
Nitrite Swabs	Sodium nitrite Water 15 % Acetic acid		Swabs shall be dried thoroughly. Properly label as hazardous waste for disposal.
Sodium rhodizonate solution (pH 6)	Sodium rhodizonate Water		Unused solution may be flushed down the Laboratory drain. Rinse empty containers and place in a trash container.
Buffer Solution (2.8 pH)	Sodium bitartrate Tartaric acid Water		Adjust to a pH> 3 and dispose of down the drain. Rinse empty containers and place in a trash container.
Hydrochloric Acid Solutions (concentrated, 5 %)		D002	Adjust to a pH> 3 and dispose of down the drain. Rinse empty containers and place in a trash container.
Acidic Ferric Chloride Solution (pH 4-6)	Ferric Chloride Hydrochloric Acid Water	D002 D002	Unused solution may be flushed down the Laboratory drain. Rinse empty containers and place in a trash container.
Ferric Chloride Solution (pH 6)	Ferric Chloride Water	D002	Unused solution may be flushed down the Laboratory drain. Rinse empty containers and place in a trash container.
Fry's Reagent (pH 2)	Cupric Chloride Hydrochloric Avid	D002	Properly label for hazardous waste disposal ("Corrosive Chemical Waste: Fry's and Turner's Solutions"). Rinse empty containers and place in a trash container.

Waste	Components	RCRA Code	Disposal Procedure
Sodium Hydroxide Solutions (concentrated, 10 %, 10N, 2N)		D002	Adjust to a pH < 12 and dispose of down the drain. Rinse empty containers and place in a trash container.
Nitric Acid Solutions (Concentrated, 25 %)		D002	Adjust to a pH> 3 and dispose of down the drain. Rinse empty containers and place in the a trash container
Turner's Reagent (pH 2)	Cupric chloride Hydrochloric acid Ethanol Water	 D002 D001	Properly label for hazardous waste disposal ("Corrosive Chemical Waste: Fry's and Turner's Solutions"). Rinse empty containers and place in a trash container.
Acetone		D001	Small amounts may be evaporated. Larger quantities shall be labeled and placed in the hazardous waste storage for disposal. Remove cap from empty containers and allow to dry. Place empty containers in a trash container.
Birchwood Casey Brass Cartridge Case Cleaner (concentrated, 5 %)		D002	Adjust to a pH> 3 and dispose of down the drain. Rinse empty containers and place in the a trash container
Swabs / Gun Cleaning Patches – used for cleaning and serial number restoration			Swabs shall be dried thoroughly. Properly label for hazardous waste disposal ("Hazardous Waste" and "May Contain Lead").
Gun Oil and Cleaner			Properly label for hazardous waste disposal ("Hazardous Waste" and "May Contain Lead").
Fired bullets and cartridge cases			Store fired bullets and cartridge cases in metal containers marked either "Lead," "Fired Bullets" or "Fired Cartridge Cases" and turn over to State surplus.

Revision History		
Effective Date	Version Number	Reason
12/11/2015	1	Original ISO document. Created by combining information from the Trace Evidence Unit's Administrative Policy and Procedure for Hazardous Waste Disposal and the Firearms Unit's Administrative Policy and Procedure Manual.