Lab Director Approval: Mark Tolbert / 08/19/2021

QA Manager Approval: Jeffrey Moore / 08/19/2021

EPD Laboratory Waste Management Standard Operating Procedures
(Contingency & Spill Prevention, Control and Countermeasure Plan per 40CFR265.52)

Access to this SOP shall be available within the laboratory for reference purposes; the official copy of this SOP resides on the official Georgia EPD website at https://epd.georgia.gov/about-us/epd-laboratory-operations. Printed copies of this SOP will contain a watermark indicating the copy is an uncontrolled copy.

1.0 Scope and Application

1.1 The EPD Laboratory is committed to providing the highest quality analytical data while managing laboratory generated wastes in accordance with all Federal and State regulatory requirements. This Standard Operating Procedure (SOP) provides guidance to all levels of laboratory staff in the generation, minimization, storage, disposal, and record requirements for laboratory generated wastes. This SOP is used with the EPD Laboratory Chemical Hygiene and Fire Plan that include additional instruction on waste handling and safety procedures required at the EPD Laboratory. The following sections present the waste management practices at the EPD Laboratory located at 5804 Peachtree Corners East, Norcross GA 30092:

- Waste Management Policy
- Staff Responsibility
- Waste Determination
- Waste Container Labeling
- Accumulation and Storage of Wastes
- Emergency and Spill Response Procedures
- Laboratory Waste Inspections and Audits
- Staff Training
- Shipping and Transfer of Hazardous Waste or Material
- Waste Minimization
- Record Requirements and Retention

2.0 Waste Management Policy

2.1 The EPD Laboratory management and staff are committed to following the waste management requirements and practices presented in this SOP. The requirements of this SOP are overseen by the Laboratory Director, Quality Assurance Manager, Laboratory Managers and Sample Custodian and are applicable to all EPD Laboratory staff members. Each staff member plays a critical role in ensuring laboratory-generated wastes are handled safely and in accordance with the requirements of this SOP. Waste handling practices not in accordance with this SOP or in conflict with Federal and/or State requirements should be brought to the

attention of laboratory management immediately.

3.0 Staff Responsibility

3.1 Laboratory Director- Responsible for over all oversight and compliance with the requirements of this SOP as well as Federal and State waste management practices within the EPD Laboratory. Conducts new employee and annual waste handling training for current employee on waste handling requirements. Notifies local emergency responders of the types of hazardous waste generated and stored at the EPD Laboratory along with the possible health concerns from exposure to generated wastes. Ensures emergency evacuation routes are posted in each laboratory and office area.

3.2 Quality Assurance Manager- Conducts an annual review of waste management SOP and initiates required updates. Distributes Manager copies of the Waste Management SOP. Ensures correct version of SOP is distributed to laboratory managers.

3.3 Laboratory Sample Custodian/Laboratory Safety Officer - Conducts annual audits on overall compliance with waste management SOP requirements as well as Federal and State regulations. The Lab Sample Custodian submits a report on the audit findings to the Laboratory Director. Conducts weekly and quarterly inspections on laboratory waste activities. Advise laboratory managers on quarterly inspections. Monitors waste accumulations and records waste volumes in logbook. Monitors waste storage time and ensures storage limits are not exceeded. Initiates and coordinates transport and disposal of laboratory wastes. Maintains waste manifests and other disposal documentation where necessary. Updates waste profiles as necessary.

3.4 Laboratory Managers- Responsible for implementing the requirements of the Waste Management SOP in each laboratory. Maintains staff training documentation. Distributes controlled copies of the SOP within each laboratory. Ensures the most recent version is maintained in staff member method SOP book. Ensures their laboratory remains in compliance with SOP requirements along with Federal and State requirements. Laboratory Managers are responsible for ensuring sufficient spill kit material is present in their laboratories to contain and dispose of up to one gallon of hazardous material. Inspects spill kits, reagent, and waste transfer equipment on a quarterly basis. Inventories and obtains additional spill kit material as necessary to maintain sufficient inventory.

3.5 Laboratory Supervisors, Scientists, and Technicians- Responsible for following the requirements of the Waste Management Plan. Informs laboratory mangers of noncompliance issues. Evaluates waste streams from new methods and notifies laboratory manager. Maintains satellite collection in laboratory areas, ensures waste is properly stored, and the 55 gallon waste storage limit is not exceeded.

4.0 Waste Determination

4.1 Acutely Hazardous Waste (P-Listed Wastes)- In the laboratory, this type of waste could be an unused chemical listed in the “P” code wastes or remains from a spill, see appendix A to this SOP. Laboratory staff must insure that at no more than 1 liter or 1 Kg of acutely hazardous waste is accumulated in the laboratory room at one time.

4.2 Various hazardous and non-hazardous wastes are generated throughout the EPD Laboratory

during the preparation and analysis of environmental samples. Each waste generated must be characterized and a determination made to the proper storage and disposal of the waste. Generally, wastes will fall into one or more of the following six categories. At this time no acute or P-listed hazardous wastes 40CFR 261.33 are present at the EPD Laboratory.

4.2.1 Ignitable Wastes- are any liquid with a flashpoint less than 140°F, or any non-liquid that is capable of causing a fire through friction, absorption of moisture, or spontaneous chemical change that creates a hazard when ignited. Compressed gases as described in 49 CFR 173.300 are also considered ignitable wastes. Examples of ignitable wastes at the EPD Laboratory are spent solvents used in the extraction of samples for organic contaminates in the Organic, GC/MS, and Inorganic Laboratories. These wastes will have a waste code of D001. These wastes are disposed of in the mixed solvent waste stream.

4.2.2 Waste Solvents, solvent mixtures and calibration/solvent mixtures- include mixtures of solvents that are used for the extraction of organic contaminants. Many of these waste streams are also included in the ignitable waste category; however the primary solvent in use at the EPD Laboratory, methylene chloride, is not ignitable. This waste stream is segregated from the ignitable waste stream at the EPD Laboratory. These wastes include the waste codes F001 through F005 and D001.

4.2.3 Corrosive Wastes- include acids, bases, or mixtures of chemicals having a pH less than or equal to 2 or greater than or equal to12.5. Examples of these waste streams at the EPD Laboratory include- acid preserved samples in the Metals, Inorganic, GC/MS, and Organic Laboratories, and sample digestates in the Metals and Inorganic Laboratories. All corrosive waste streams have the waste code D002. These wastes, providing there are no other toxic, hazardous, or NPDES exceedances, are neutralized and disposed to the sanitary sewer.

4.2.4 Heavy Metals and Inorganics- waste materials are considered hazardous if the extract from a representative sample of the waste has any of the characteristic concentrations presented in 40 CFR parts 262. The only waste stream meeting these criteria at the EPD Laboratory would come from samples analyzed to establish hazardous characterization or WPCP samples. Exceedance limits for sewer disposal of this type of waste are listed in Table 6.1 and Table 6.2. Samples under chain of custody are not considered hazardous until it is necessary to dispose of the sample (40CFR261.4(d)). Waste codes for these wastes are D004 through D011.

4.2.5 Reactive Wastes- includes materials or mixtures that are unstable and could react violently or explode when it comes in contact with water or generates toxic gases or vapors when mixed with water. Cyanide and sulfide wastes are also considered reactive when exposure to pH conditions between 2 and 12.5 is possible. Sources of reactive compounds at the EPD Laboratory include chromic acid, cyanides, sulfides, permanganates, and hypochlorites. These sources are only expected in the case of expired chemical reagents. All reactive wastes have the waste code D003.

4.2.6 Microbiological Wastes- includes cultures and stocks of potentially infectious agents. These infectious agents include any organism, virus, or bacteria that causes disease or an adverse health impact to humans or the environment. Infectious organisms are identified in the CDC's Manual for Biosafety in the Microbiological and Biomedical Laboratories. The EPD Laboratory retains nine different microorganisms that are included in the CDC Manual for Biosafety Level 1 and 2, see Table 4.1.

Also included in this waste category are culture media, and clean up materials that have been exposed to organisms, viruses, or bacteria. Culture dishes, flasks, transfer devices, inoculation loops, test tubes, foam stoppers and other laboratory equipment should be considered microbiological waste until sterilized. Once sterilized these wastes may be disposed of in the trash or poured down sink drains to the sanitary sewer.

Table 4.1
Organisms used it the Microbiology Lab

	Microorganism	ATCC #	Biosafety Level	Section
1	Enterobacter aerogenes	13048	1	Bacteriology
2	Enterobacter cloacae	23355	1	Bacteriology
3	Escherichia coli	25922	1	Bacteriology
4	Klebsiella pneumoniae	13883	2	Bacteriology
5	Proteus hauseri	13315	2	Bacteriology
6	Pseudomonas aeruginosa	27853	2	Bacteriology
7	Staphylococcus aureus	25923	2	Bacteriology
8	Cryptosporidium parvum	--	2	Protozoan
9	Giardia lamblia	--	2	Protozoan

5.0 Waste Accumulation and Storage

5.1 Signage- All areas where hazardous waste is generated or stored must have emergency posting near the telephone with the following information 40CFR262.34(d) (5)(ii)(A):

- Name of emergency contact and backup
- Telephone numbers for emergency contacts
- Fire, Police, and emergency medical telephone number
- National Hazardous Response Call Center telephone number
- Location of fire extinguishers, fire alarms and spill control equipment

5.2 Satellite Accumulation Areas- A generator of hazardous waste may accumulate as much as 55 gallons of hazardous waste or one quart of acutely hazardous waste in containers at or near any point of generation where waste is initially accumulated. These areas are known as satellite accumulation areas per 40 CFR parts 262.34(c)(1). Satellite accumulation areas are maintained in the fume hood or by the laboratory bench where sample preparation or analytical activities are carried out and considered under the control of a Scientist. All satellite accumulated wastes are evaluated and placed into the appropriate waste drum or treated and discharged to the sanitary sewer.

Several waste streams, both hazardous and non-hazardous are generated each day in the EPD Laboratory. Waste streams are specific to the analytical methods conducted throughout the laboratory. Each laboratory section maintains several satellite collection areas where laboratory work is conducted. These satellite collection areas are always located in the same room and in as close proximity as possible to the generation of the waste. Laboratory Managers, Supervisors, and Scientists, under the guidance of laboratory management, collect all hazardous waste in satellite collection containers. Wastes are segregated based on the type of waste and possibility of reaction with other chemicals. The following table presents the current list of known waste streams and approximate monthly volumes at the EPD Laboratory.

Table 5.2
Laboratory Waste Types
(Subject to change as necessary)

Waste Stream Profile	Approximate Monthly Volume	Primary Waste Code	Waste Stream Components	Additional Codes
Mixed Solvent	20 Kg	D001, F003	Acetone Ethyl Ether Ethyl Acetate Hexane Isopropyl Alcohol Methanol Methyl Tertiary Butyl Ether Petroleum Ether Isooctane Pentane Water	U002 U117 U112 D001 D001 U154 D001 D001 D001 D001
Chlorinated Solvent Waste	25 Kg	D001, F002	Chloroform Isopropyl Alcohol Methylene Chloride Water	U044 D001 U080
Pyridine Cyanide Waste	0.25 Kg	D038	Barbituric Acid Pyridine Cyanide Water	U196 P030 D003
COD Vials	2 Kg	D009	Sulfuric Acid Chromium Mercury Sulfate Silver Sulfate Chromic Acid	D002 D007 D009 D011 D003
NH_3 Analysis Waste	40 Kg	D002	Sodium Phenolate	P280
TKN Analysis Waste	40 Kg	D002	Sulfuric Acid	D002
Acetonitrile	5 Kg	D001	Acetonitrile Water	U009

Waste Stream Profile	Approximate Monthly Volume	Primary Waste Code	Waste Stream Components	Additional Codes
TCLP Extract Waste *	5 Kg		Water Acetic Acid Hydrochloric Acid Nitric Acid	 D002 D002 D002

(*)- A final report of any TCLP extract must be provided to the Sample Custodian prior to the addition of any TCLP extract to the TCLP Waste Storage Drum.

5.3 Satellite Accumulation Containers and Labeling- Containers must be compatible with the waste being stored in the container. In most cases at the EPD Laboratory, an empty solvent bottle or plastic carboy may be used if labeled properly. The following guidelines are recommended for choosing the correct container:

- Use the appropriate sized container for routine sample analysis
- Use containers compatible with waste
- Segregate hazardous chemical waste in separate containers
- Use secondary containment
- Always use protective containment carrier when moving waste from laboratory to storage drum.
- Containers must be securely closed with a cap except when wastes are being added

Proper labeling must be present on each satellite accumulation container and includes the following:

- "Hazardous Waste"
- Chemical Name of Waste
- Room Number Container Assigned to
- Storage Date if Transferred to Hazardous Waste Storage Building

Method generated waste may be kept in a beaker during sample preparation procedures and as soon as practical is poured into the satellite accumulation container.

Automatic waste collection from instrument systems requires strict monitoring to ensure there is no possibility of collected waste escaping to the environment. Instrument systems within the EPD Laboratory include liquid chromatography, sequential flow analyzers, and inductively coupled plasma instruments. Waste collection containers are emptied as necessary and after neutralization are disposed of to the sanitary sewer if no contaminants will exceed the discharge limits at the sewer outfall (see Table 6.1). The following guidelines are recommended for these systems:

- Collection systems must be constructed to prevent the release of waste to the environment.
- Collected waste volume must be monitored to ensure sufficient system capacity for each day's activities.
- Additional care to ensure sufficient capacity is necessary when systems are scheduled for overnight operation.

Waste oil containers must be properly labeled and contain the following information:

- "Used Oil"

- Type of Oil
- Room Number Container Assigned to
- Storage Date if Transferred to Hazardous Waste Storage Building

5.4 Large Capacity Storage Drums- - Containers must be compatible with the waste being stored in the container. Drums must have the following information placed on the side of the drum.

- The words "Hazardous Waste"
- The accumulation start date
- The name of the contents of the drum

5.5 Fluorescent lamps -at the EPD laboratory are maintained by CBRE. CBRE service engineers collect and dispose of all fluorescent lamps in accordance with State and Federal regulations.

5.6 Storage Times- the initial date of use must be clearly recorded on each drum used for storage of waste. Drums of the wastes profiled above may remain in the hazardous waste storage room for no more than 180 days if the treatment/disposal facility is less than 200 miles from the EPD Laboratory. Waste may be stored on site for 270 days if the waste treatment/disposal facility is more than 200 miles from the EPD Laboratory. Laboratory policy requires that all wastes be shipped to a treatment/disposal facility two times each year. A letter is on file from MKC stating that the treatment/disposal facility currently used is more than 200 miles from the EPD Laboratory.

5.7 Laboratory Reagents- Laboratories should make every effort to purchase reagents in a volume that will be fully utilized prior to the expiration date of the reagent. Expired reagents with a chemical hazard rating of one or two are disposed of in the trash. Expired reagents with a chemical hazard rating two or greater or are known to be hazardous are stored in the laboratory as a satellite accumulated waste until lab pack disposal by a waste handler. A storage area should be identified in each laboratory. Care must be taken to avoid the storage of incompatible waste types in close proximity to each other.

5.8 The total quantity of waste accumulated at a site classified as a small quantity generator (>100kg<1,000kg) may never exceed 6,000kgs.

6.0 Transfer, Disposal and/or Treatment of Laboratory Waste

6.1 Transfer of Laboratory Waste – All primary glass containers of laboratory chemicals and wastes should be placed in a secondary non-breakable container. Non-breakable containers are located in each laboratory area. Laboratory carts may also be used to safely transport chemicals and wastes within the laboratory and to the waste storage building providing the sidewalls on the cart are sufficiently high to contain the total volume of waste being transported. Metal carts with low sidewalls or rails are not to be use at any time to transport liquid wastes in glass containers. All primary containers must be capped prior to transfer.

6.2 Laboratory safety equipment should be worn when transporting waste out of laboratory areas. These include:

- Safety glasses
- Lab coats
- Gloves

Laboratory carts utilized for transporting wastes should be equipped with a laboratory spill kit on the bottom shelf of the cart. Additionally, Staff members involved with the transfer of

wastes should also be familiar with the location of additional spill kits and clean up material.

6.3 Federal, State, and local ordinances- prohibit the discharge of any hazardous waste to the sanitary sewer. All other wastes discharged to the sanitary sewer must meet the NPDES discharge limits for Gwinnett County presented in the following two tables. It is prohibited for any EPD Laboratory staff member to discharge a waste stream to the sanitary sewer if the waste would be considered a hazardous waste according to 40 CFR parts 261 or the waste stream does not meet the NPDES discharge requirements presented in tables 6.1 and 6.2.

The Gwinnett County sewer use permit requires that a notice shall be permanently posted on the user's bulletin board or other prominent place. The notice is to advise all employees to call the Gwinnett County sewer emergency phone number in the event of a discharge of any of the substances enumerated in Appendix B that exceed the limits at the sewer discharge point where laboratory wastewater enters the Gwinnett wastewater sewer lines. Gwinnett County Water Department Emergency can be contacted by telephone at **678-376-7000.** Laboratory Manager and Director should be contacted prior to making any telephone calls to Gwinnett County. Laboratory effluent discharge cannot exceed any of the following limits identified in Tables 6.1 and 6.2 at the sewer discharge point. Laboratory staff must evaluate both waste stream volume and concentration to determine if the waste stream will result in exceedances of the discharge limits. Any questions concerning waste volume and concentration should be addressed to laboratory management.

Table 6.1
Metals and TPH Limits
At The Sewer Discharge

Pollutant	Gwinnett County Local Limits, ug/L	No Business Creek Local Limits, ug/L
Arsenic, total	7.0	7.0
Cadmium, total	6.0	2.0
Chromium, total	216.0	216.0
Copper, total	109.0	109.0
Lead, total	116.0	116.0
Mercury, total	0.1	0.1
Nickel, total	131.0	116.0
Silver, total	231.0	231.0
Zinc, total	1755.0	1755.0
Cyanide, total	18.0	18.0
TPH	20.0	20.0

Table 6.2
Conventional Pollutants Limits
At The Sewer Discharge

Pollutant	Gwinnett County Local Limits, mg/L	No Business Creek Local Limits, mg/L
BOD 5	700	300
TSS	700	350
Total phosphorus	35	35
Ammonia	70	40
Oil and Grease	200	200
pH	<5.5 or >10.5	<5.5 or >10.5

Five of the six laboratory sections in the EPD Laboratory generate waste streams that must be treated on site or removed from the laboratory and transported to an approved treatment facility. These Laboratories include the, GC/MS, Inorganics, Metals, Microbiological, and Organics.

6.4 See Appendix A for Laboratory specific waste streams and disposal requirements.

7.0 Emergency and Spill Response Procedures

7.1 List of Emergency Equipment for Fire Suppression and Spill Control

7.1.1 Emergency Alarm and Warning System- pull boxes located throughout the laboratory.

7.1.2 Portable fire extinguishers- located throughout the laboratory.

7.1.3 Sprinkler System- Heat activated and located throughout the laboratory.

7.1.4 Laboratory Spill Kits (see 7.3 below) including absorbent spill control pillows- located in each laboratory where hazardous waste is generated.

7.1.5 Absorbent spill granular material- located in each laboratory where hazardous waste is generated.

7.1.6 Absorbent spill material containers- located in each laboratory where hazardous waste is generated. Used for removal and storage of used spill control material.

7.1.7 Personal safety equipment- gloves, safety glasses, face shields, lab coats.

7.1.8 Safety Showers- located throughout the laboratory for decontamination of personnel. Additional showers located in the bathrooms on the North end of the laboratory.

7.2 Spill Avoidance

Avoiding laboratory spills in the first place should be a priority for laboratory staff members. Laboratory staff should be vigilant in identifying potential areas for spills and take appropriate action to prevent the escape of hazardous chemicals to the laboratory space and environment. The majority of laboratory spills can be prevented by:

- Laboratory Managers and Supervisors should insist on neat and organized work areas under their supervision.
- Evaluating the potential for spills and being proactive in spill prevention.
- Never transporting more chemical than is necessary. Several trips with smaller amounts are preferable to one trip moving a large quantity.

- Always transfer or move large containers of solvents, acids, bases, and other laboratory chemicals in secondary protective containers.
- When possible, hazardous and dangerous chemicals should be stored in a secondary containment vessel sufficiently large enough to contain the volume of chemical in the primary container.
- Primary containers should be tightly closed or sealed except when removing chemicals.
- Dangerous or hazardous chemicals should be ordered in a size appropriate for the methods. Liters should be ordered rather than gallons when possible. Plastic coated containers should also be obtained when possible.

7.3 Laboratory Spill Kits

Laboratory staff should respond to the majority of laboratory spills with the contents of spill kits provided in each laboratory area where hazardous waste is generated or stored. Laboratory Managers are responsible for ensuring sufficient spill kit material is present in their laboratories. Sufficient spill kit material should be on hand to respond to the release of one gallon of laboratory chemical. Spill kits are located in each laboratory area. The location is noted on the emergency response notification located near the telephone in each laboratory area. Laboratory Managers and Supervisors are required to evaluate the chemicals used in their laboratory area and ensure sufficient spill control material is on hand at all times to control and remove used spill material. At the minimum, spill kits in each laboratory area should include sufficient quantities of the following materials to control and eliminate one gallon of laboratory chemical:

- High Capacity Absorbent Pads- suitable for Acids, Bases, and Flammable Liquids.
- Universal chemical spill powder such as vermiculite- suitable for Acids, Bases, and Flammable Liquids
- Acid and Caustic Neutralizer material (such as Neutrasorb for acids or Neutracite-2 for bases)
- Plastic Scoop or Dust Pan and chemical resistant broom.
- Polyethylene Bags, 5 gallon size for cleanup material
- Nitrile Gloves - several pairs
- Face shields - minimum of two per laboratory area
- Five-gallon plastic buckets with polyethylene bag liner

7.4 Minor Non-emergency Spills

Non-emergency spills are spills of one gallon or less of chemical or waste and meet the following criteria:

- The staff member causing or discovering the spill knows which chemical is involved and is capable of making an informed decision as to the exposure hazard, and is capable of initiating cleanup of the spill.
- The chemical or waste is of limited quantity and exposure and toxicity present only a minor safety or health hazard to staff in the immediate work area.
- Laboratory spill kits are capable of complete confinement of the spill and cleanup.
- Minor non-emergency spills do not require outside (public emergency response such as fire/rescue) assistance.

7.5 Major Emergency Spills

Emergency spills pose a significant threat to health and safety because of either the volume and/or toxicity of the hazardous substance and requires the intervention of public emergency

response such as fire/rescue. These events are characterized by the following:

- The severity of the situation is unknown to the staff member discovering the spill.
- The spill requires the evacuation of the laboratory.
- The spill involves a flammable or explosive solvent of sufficient volume to be an immediate danger to the staff.
- The danger of exposure to the toxic substance is not known by those present.
- The spill is larger than those present believe they can safely contain and dispose.

7.6 Spill Response Procedures for Liquids

In the event of a staff injury, the injured staff member must be assisted out of the spill area first. Only then can the spill be contained and eliminated if the responders understand the toxicity and health effect of the chemical or waste if the waste can be safely contained and removed.

For minor non-emergency spills, small spills involving less than 100mls can be eliminated with paper towels or absorbent material. These types of spills, if they involve a listed hazardous waste, must be lab packed along with other hazardous material and samples. Hazardous cleanup material must be properly labeled as any other hazardous waste (see section 5.2).

7.7 **Minor Non-Emergency Spills or Releases-**

- Evacuate the staff member if injuries are involved.
- If a volatile, flammable material is spilled, immediately warn those present to control sources of ignition and raise fume hood doors to ventilate room.
- Protect floor drains if present.
- Inform other staff members in the room of the spill and the chemical(s) involved.
- For spills 1 liter or more, notify the Emergency Coordinators Mark Tolbert, Carmen Pyles or Jeff Moore at one of the following telephone numbers:

    - **Mark Tolbert 470-585-6983 or 678-248-7388**
    - **Carmen Pyles 678-248-7453**
    - **Jeff Moore 678-248-7387**

- Limit access to the spill area by posting a staff member at the door.
- Always wear gloves and eye protection, dress in additional protective clothing and equipment as necessary.
- Use the spill kit to confine the spill and prevent the spread of the spill by surrounding the spill with the absorbent pillows in the spill kit. Place additional spill pillows directly on top of the spill if it is necessary to absorb all the material.
- Raise the sashes on the hoods in the laboratory to the open position, approximately 18 to 24 inches, to ventilate the room.
- If acids are bases are involved, use the neutralizing chemical in spill kit as appropriate.
- Allow absorbent pillow material to absorb spill, transfer pillows to five-gallon plastic buckets with polyethylene bag liner for transfer to Hazardous Waste Storage Building.
- Ensure the storage container is properly labeled (see sect. 5.2).
- Mop the affected area with soap and water if necessary.

7.8 **Major Emergency Spills or Releases**

- Evacuate the staff member if injuries are involved.
- Inform other staff members in the room of the spill and the chemical(s) involved.

- If a volatile, flammable material is spilled, immediately warn those present to control sources of ignition and raise fume hood sashes to ventilate room. Use activated charcoal in the yellow buckets to absorb volatile/flammable spills.
- Protect floor drains if present.
- Inform Laboratory Manager or Supervisor who will evaluate the situation and sound fire alarm if necessary.
- Notify the Emergency Coordinators Mark Tolbert, Carmen Pyles or Jeff Moore at one of the following telephone numbers:

    - **Mark Tolbert 470-585-6983 or 678-248-7388**
    - **Carmen Pyles 678-248-7453**
    - **Jeff Moore 678-248-7387**

- Evacuate the laboratory according to the Fire Safety Plan and remain outside until Fire Department allows re-entry of the laboratory.
- All laboratory ventilation systems must be left on to ventilate the laboratory and prevent a buildup of flammable vapors.
- Major emergency spills or release will require clean up by a hazardous materials clean up company.
- Notify the **National Response Center at 1-800-424-8802 and the Georgia Emergency Management Authority at 1-800-241-4113** in the event a spill has caused a fire or an explosion that could threaten human health. A removable card with required information is available at each emergency notification placard located near the telephone in each laboratory area. The following information must be communicated to both agencies:
    - Generator identification number-
      GAD981264237
    - Name and telephone number of reporter
      Your Name, 678-248-7383 (main number)
    - Name and address of the facility
      GA Dept. of Natural Resources, EPD Laboratory
      5804 Peachtree Corners East
      Norcross GA 30092
    - Time and type of incident, e.g. release, fire, etc.
    - Name and quantity of material involved
    - The extent of injuries, if any
    - The possible hazards to human health or the environment

7.9 Fire or Explosion

- Locate the nearest fire alarm and pull the handle.
- Attempt to extinguish the fire with portable fire extinguisher if it will not endanger staff members.

7.10 Emergency Coordinator- At all times there must be at least one employee either on the premises or on call with the responsibility of coordinating all emergency response measures. This employee is available to respond to an emergency by reaching the facility within a short period.

7.11 Emergency Equipment- must be cleaned and used material replaced before laboratory

operations can resume.

7.12 Report to EPA Regional Administrator- Any event that requires the implementation of the contingency plan requires a report on the event be sent to the regional EPA Administrator within 15 days. (40CFR265.56) The report must include:

US EPA Region 4 Administrator
Sam Nunn Atlanta Federal Center
61 Forsyth St. SW Atlanta, GA 30303-8960

- Name, address, and telephone number of the owner or operator
- Name, address, and telephone number of the facility
- Date, time and type of incident (e.g. fire, explosion)
- Name and quantity of materials involved
- The extent of injuries, if any
- An assessment of actual or potential hazards to human health or the environment where this is applicable
- Estimated quantity and disposition of the recovered material that resulted from the incident
-

7.13 All letters to the EPA Region 4 Administrator must be routed through the EPD Program Coordination Branch Chief.

8.0 Laboratory Waste Inspections

8.1 Three types of hazardous waste handling and storage reviews are conducted at the EPD Laboratory. The Sample Custodian or their designee conducts weekly inspections of the Hazardous Waste Container Storage Area. Form 1.3 is used for this inspection (see Appendix 1 of this SOP).

8.2 The Sample Custodian or their designee conducts quarterly inspections of all satellite accumulation areas and hazardous waste storage containers. The inspection notes the following, but is not limited to:

- Satellite Accumulation Areas
- Proper Labeling
- Storage Container Closure
- Evidence of Leakage
- Accumulation Dates and Days Since Storage Began
- Adequate Space Between Containers

Form 1.1 is used for this inspection (see Appendix 1 of this SOP). Inspection forms are maintained in the waste handling, storage and transfer files.

8.3 The Sample Custodian conducts comprehensive waste handling and shipping inspections on a quarterly basis. The Laboratory Director conducts an annual inspection of facility requirements for training and emergency contact posting. Table 1.2 in Appendix 1 present the criteria inspected throughout the EPD Laboratory.

9.0 Staff Training

9.1 Laboratory staff members must successfully complete a training program of classroom instruction or on the job training that instructs them in the requirements of this Waste Management Plan. All sections of the Plan must be included in the training. Initial and annual renewal training is conducted by each Laboratory Director. A Microsoft Power Point presentation is available on the laboratory server S: drive under Hazardous Waste Management.

9.2 The training must be directed by the Laboratory Director who is aware of the requirements of the Waste Management Plan including the emergency spill response and cleanup requirements of the plan. Spill Kit Training is conducted by a designee from each laboratory on an annual basis.

9.3 The training program must be designed to ensure that laboratory staff members are able to respond effectively to emergencies by familiarizing themselves with emergency procedures, emergency equipment, and the laboratory alarm system. The training program includes the following elements of the Waste Management Plan.

- Overview of Waste Management at the EPD Laboratory
- Regulatory Requirements for Waste Management
- Staff Responsibility
- Waste Storage and Container Labeling
- Relocation of Solvents, Acids, and Waste within the Laboratory
- Emergency and Spill Response Procedures
- Hazardous Waste and Material Shipping
- Record Requirements

9.4 All laboratory personnel must complete hazardous waste management training within six months of employment. An employee may not work in a position that generates hazardous waste without supervision until the training program has been completed.

9.5 All laboratory personnel must take part in an annual review of the initial training outlined in 6.3.

9.6 All employee training records are maintained in the employee personnel file within each laboratory. Training records for current employees must be maintained indefinitely at the laboratory. Training records for former employees must be maintained for three years.

9.7 All initial and continuing demonstrations must include a review of waste steams generated by the method along with the final disposition of all wastes. The waste streams and disposal requirements are noted on the demonstration form (see initial and continuing demonstration forms).

10 Shipping and Transfer of Hazardous Waste or Material

10.1 Hazardous waste and materials shipping fall under the requirements of US EPA and US DOT. Care must be taken to ensure requirements of both federal agencies are adhered to

when shipping hazardous waste. All activities associated with the shipping and transfer of hazardous waste or material are coordinated and conducted through the office of the Sample Custodian. All other staff members are prohibited from initiating the shipment or transfer of hazardous waste or material. The Sample Custodian's name will appear on all documentation of hazardous wastes as the shipper of record. Department of Transportation requires certification of handlers of hazardous waste shipments. Packaging of hazardous waste must conform to the requirements of Department of Transportation requirements in 49 CFR parts 173, 178.

10.2 Hazardous Materials Classification

A hazardous material is defined as a substance or material that has been determined by the Department of Transportation to be capable of posing an unreasonable risk to health, safety and property. All hazardous Materials must be properly classified by the Sample Custodian. 49 CFR part 173 requires that hazardous waste/materials be classified according to the following table.

Table 10.1
Hazardous Material Classification

Class	Name of Class	49 CFR Section
1.1 - 1.6	Explosives	173.50
2.1 - 2.3	Flammable, non-flammable, or toxic gases	173.115
3	Flammable/combustible liquids	173.120
4.1 - 4.3	Solids that are flammable, spontaneously combustible, or dangerous when wet	173.124
5.1 - 5.2	Oxidizers and organic peroxide	173.127 and 173.128
6.1 - 6.2	Toxic and infectious substances	173.132 and 173.134
7	Radioactive	173.403
8	Corrosives	173.136
9	Miscellaneous hazardous materials	173.140

Department of Transportation UN Codes for the laboratory generated wastes are presented in the table below:

Table 10.2
Laboratory Waste UN Codes

US DOT Chemical Description	UN Code
Waste Acetonitrile	UN1648
Waste Flammable Liquids (Acetone Methanol)	UN1993
Waste Corrosive Liquids, Toxic, N.O.S., Nitric Acid, Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver	UN2922

US DOT Chemical Description	UN Code
Waste Corrosive Liquids, Toxic, N.O.S., (Sulfuric Acid, Mercuric Sulfate)	UN2922
Waste Toxic Liquids, Organic, N.O.S. (Chromic Acid)	UN2810
Waste Toxic Liquids, Organic, N.O.S.	UN2810
Waste Toxic Liquids, Organic, N.O.S. (Methylene Chloride, Chloroform)	UN2810
Waste Toxic Solids, Organic, N.O.S.	UN2811
Flammable Waste, Liquid, N.O.S., Corrosive waste (Pyridine, Sodium Hydroxide)	NA3082 UN2924
Waste Corrosive Liquid, Basic, Inorganic, N.O.S. (Phenolate),8,PGII	UN3266
Waste Corrosive Liquid, Acidic, Inorganic, N.O.S. (Sulfuric Acid)	UN3264

10.3 Hazardous Waste and Material Packaging

A container of hazardous material or waste must always remain closed unless it is necessary to add or remove contents from the container. Closures must be designed in such a manner that under normal conditions it will not allow the escape of the container's contents. Filling limits of each container must not be exceeded. Title 49 part 173.12 presents exceptions to DOT shipping requirements for hazardous wastes. Wastes generated at the EPD Laboratory may be stored and transported by open head drum per part 173.12 (a) or lab packs per part 173.12(b). Most wastes generated at the EPD Laboratory are packaged in 55-gallon metal or plastic drums. Additional smaller drums are utilized when the volume of waste generated would not fill a 55-gallon drum in the storage time allowed.

10.4 Container Labeling

All containers used throughout the EPD Laboratory must be properly labeled at all times. Section 5.3 presents requirements for labeling satellite accumulation storage containers. 55-gallon drums and smaller shipping containers are labeled with the words "Hazardous Waste", the accumulation start date and the name of the contents of the drum. The following information must be present on a drum prior to shipment, 49 CFR 172. This information in most cases is on a hazardous waste shipping label:

- Generator name and complete address
- Generator's EPA identification number
- Manifest document number
- EPA waste number
- Accumulation start date
- Composition of waste material
- Physical state of waste
- Hazardous properties
- Proper shipping name, and UN number

The drum must also include the following statement:

FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY

AUTHORITY OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY

10.5 Inspection of Drums Prior to Shipping

All drums must be inspected by the Sample Custodian prior to pickup by waste disposal contractors. Drum inspection documentation must be maintained with shipment manifests. Inspections must include the following:

- Ensure container is not leaking
- Closures are securely fastened
- Drums are correctly labeled

10.6 Certification for Hazardous Material Shipping

Any persons handling and shipping hazardous materials must attend a hazardous materials handling and shipping course, pass a written test, and obtain certification. At the EPD Laboratory, the Sample Custodian and GCMS Lab Manager are the only people authorized to sign hazardous materials shipping documentation. All hazardous materials, shipping containers and shipping documentation must be reviewed by and signed by the Sample Custodian.

10.7 Exceptions for Shipment of Laboratory Waste

Title 49 parts 173.12 allows for specific packaging exemptions for waste shipments classified as lab packs. Waste materials classed as Class or Division 3, 4.1, 4.2, 4.3, 5.1, 6.1, 8, or 9 are excepted from the specification packaging requirements of subchapter 173 for combination packaging if packaged in accordance with subchapter 173 and transported for disposal or recovery by highway, rail or cargo vessel only. In addition, a generic description from subpart 172.101 tables may be used in place of specific chemical names, when two or more chemically compatible waste materials in the same hazard class are packaged in the same outside packaging.

10.8 Manifest Requirements

All shipments of hazardous waste from the EPD Laboratory must be accompanied by a manifest meeting the requirements of 40CFR part 262. The manifest must be on EPA Form 8700-22 and if necessary EPA Form 8700-22A. The hazardous waste manifest must include the following:

- An EPA approved description of the waste and volume.
- EPA Generator ID Number
- Address of the generator
- The designated facility which is permitted to handle the waste described on the manifest
- An alternate facility which is permitted to handle the waste in the event an emergency prevents delivery of the waste to the primary designated facility
- The signature of the generator of the waste. At the EPD Laboratory this would be the signature of the Sample Custodian
- Signature of the initial transporter of the waste and date of acceptance

10.9 The generator must maintain copies of all waste shipment origination manifests and the final facility acceptance manifest. The acceptance facility must return the signed manifest to the EPD Laboratory within 60 days. If the manifest is not received within 60 days, the regional EPA administrator must be notified. The EPD Laboratory maintains a Hazardous Waste

Pickup Manifest Log of all waste shipments and manifest status. The date and status of the manifest is noted in the comments section.

11 Waste Minimization Certification

11.1 The Georgia EPD Laboratory, a small quantity generator, hereby certifies that a good faith effort has been made to minimize waste generation. The Laboratory has selected the best waste management and minimization practices available to the laboratory and currently affordable.

12 Record Requirements and Retention

12.1 Generators of greater than 100 kilograms but less than 1000 kilograms of hazardous waste in a calendar month are subject to the following record keeping requirements.

- Section 262.40, (c) and (d), recordkeeping
- Section 262.42, (b), exception reporting
- Section 262.43, additional reporting

12.2 A generator must keep a copy of each manifest signed in accordance with Part 262.23(a) for three years or until a signed copy from the designated facility receiving the waste is received. It is the policy of the EPD Laboratory to log and retain all manifests for a period of three years.

12.3 Copies of all test results, waste analyses, or other determination made in accordance with Part 262.11 are retained for a period of three years from the date the waste was sent to a treatment facility. All data associated with testing performed by the EPD Laboratory are maintained in the EPD Laboratory database indefinitely.

12.4 Periods of record retention are automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the EPA Administrator.

12.5 The EPD Laboratory is required to notify the EPA Region 4 Administrator with an exception report in the event a designated facility does not return a signed manifest within 60 days of the date the waste was accepted by the initial transporter. A copy of the originating manifest must be included with the exception report.

12.6 The EPA Region 4 Administrator may request additional reporting from the EPD Laboratory concerning the quantities and disposition of wastes identified or listed in 40 CFR parts 261.

Appendix 1 Tables and Forms

Form 1.1 - Quarterly Inspection Criteria

Georgia Department of Natural Resources
Environmenatal Protection Division Laboratory

Effective Date: 04/05/2018
SOP 6-015 Form 1.1 Rev. 0
Page 1 of 2

Quarterly HazWastes Storage Inspection

Laboratory or Area:

Inspected By: **Date:**

Audit Criteria	CFR Reference				
Satellite Storage/Accumulation Areas		**Y**	**N**	**N/A**	Finding/Comments
1.) Satellite accumulation areas clearly identified?	40CFR262.34(c)(1)				
2.) Is the satellite area at or near the point of generation?	40CFR262.34(c)(1)				
3.) Is the satellite accumulation area out of travel routes or other areas where the containers could be broken or knocked over?					
4.) Is the satellite accumulation area under the control of the laboratory generating the waste?	40CFR262.34(c)(1)				
5.) Hazardous Waste stored in either a satellite accumulation area and/or a separate hazardous waste storage area?	40CFR262.34(c)(1) 40CFR262.34(a)(3)				
6.) Waste containers kept closed except when filling or adding waste?	40CFR265.173				
7.) Waste containers are in good condition (free of leaks, rust, etc.)?	40CFR265.15(4)				
8.) Are hazardous waste containers properly labeled?	40CFR262.3(c)(ii) HWMP 5.3				
9.) Is the satellite accumulation area free of spilled or leaking waste material?	40CFR265.15(4)				
10.) Are used oil containers properly labeled?	HWMP 5.3				
11.) Is the monthly inspection documented?	HWMP 8.1				

S:\Approved Forms\Quarterly HazWaste Inspection.xls

Georgia Department of Natural Resources
Environmenatal Protection Division Laboratory

Audit Criteria	CFR Reference				
Emergency Equipment		**Y**	**N**	**N/A**	Finding/Comments
1.) Are emergency response spill kits available?	40CFR265.15(b)(1)				
2.) Are the spill kit locations easily identifiable?	40CFR265.15(b)(1)				
3.) Are staff members able to identify the location of the spill kit?	HWMP 7.3				
4.) Do the spill kits contain sufficient supplies to contain a 1-gallon spill of waste or solvent?	40CFR265.15(b)(1)				
5.) Are carts used for transporting solvents and acids equipped with a spill kit?	40CFR265.15(b)(1)				
6.) Are secondary containment carriers available for transporting liquid reagents?	HWMP 6.1				

Notes:

Table 1.2 - Annual Inspection Criteria

Audit Criteria	CFR Reference	Finding			
Facility Requirements		Comments	**Y**	**N**	**N/A**
1a.) Does the generator have a training plan in place to ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures?	40CFR262.34(C)(iii) 40CFR265.16(a)(1)				
1b.) Does the facility have a training program to ensure employees are thoroughly familiar with proper waste handling and emergencies?	40CFR265.16(4)(b)				
2.) Does the facility have a documented training program to instruct employees in the requirements of the waste management plan?	40CFR265.16(a)(1)				
3.) Does the facility maintain documentation required by 40CFR265.16 regarding training? ▪ Employee Name ▪ Job Title ▪ Job Description ▪ Training Attendance	40CFR265.16(a)(4)(d)				
4.) Have all employees received hazardous waste management training within 6 months of employment?	40CFR265.16(4)(b)				
5.) Has each employee participated in an annual review of hazardous waste management practices?	40CFR265.169(a)(4)(c)				

Audit Criteria	CFR Reference	Finding			
Facility Requirements		Comments	**Y**	**N**	**N/A**
6.) Are the employees of the facility familiar with the requirements of the plan? Are they able to provide a copy of the plan?	40CFR262.34(C)(iii)				
7a.) Does the facility have emergency information posted near the telephone?	40CFR262.34(d)(5)				
7b.) Is the telephone of the National Response Center available to employees?	40CFR265.56				
8.) Has the facility arranged with local emergency responders to notify them of the generation of hazardous waste and the potential health affects of wastes generated or stored at the facility?	40CFR265.37				
9.) Is the facility maintained and operated to minimize the possibility of a fire, explosion or unplanned release of hazardous waste?	40CFR265.31				
10.) Are spill kits inspected and restocked as necessary? Is documentation of inspection available?	40CFR265.15(b)(1)				
11.) Does the facility maintain sufficient communication, alarm, and fire control equipment?	40CFR265.32				
12.) Is the equipment inspected as necessary to assure proper operation in time of emergency?	40CFR265.33				

Audit Criteria	CFR Reference	Finding			
Facility Requirements		Comments	**Y**	**N**	**N/A**
13.) Do employees have immediate access to an internal alarm or emergency communications device when handling hazardous waste?	40CFR265.34				
14.) Has the facility certified that a good faith effort has been made to minimize waste generation?	40CFR262.27				
15.) Has the facility established reporting requirements and recordkeeping policies?	40CFR262.44				
16.) Have required reports been completed when necessary?	40CFR262.40 (c), (d) 40CFR262.42 (b) 40CFR262.43				

Audit Criteria	CFR Reference	Finding			
Storage Requirements		Comments	**Y**	**N**	**N/A**
1.) Does the container storing the hazardous waste meet US Department of Transportation requirements?	40CFR262.30				
2.) Is the container storing hazardous waste in good condition?	40CFR265.171				
3.) Is the container storing hazardous waste compatible with the waste material? (Solvents in steel drums, acidic or basic solutions in plastic drums)	40CFR265.172				
4.) Does the Generator generate or accumulate more than 1000 kilograms of hazardous waste in a calendar month?	40CFR262				

Audit Criteria	CFR Reference	Finding			
Storage Requirements		Comments	**Y**	**N**	**N/A**
5.) Is the container storing hazardous waste kept securely closed when not in use?	40CFR265.173				
6.) Is the satellite accumulation container storing hazardous waste at or near the point of generation and under the operators control?	40CFR262.34(c)(1)				
7.) Is the volume of hazardous waste stored in the satellite accumulation container less than 55 gal (110 L)?	40CFR262.34(c)(1)				
8.) Is the container storing hazardous waste labeled with the words "Hazardous Waste" and the name of the waste?	40CFR262.34(c)(ii)				
9.) Is sufficient aisle space maintained to allow unobstructed movement of personnel in the event of an emergency?	40CFR265.35				
10.) Has the generator developed a written schedule of inspections?	40CFR265(b)(4)				
11.) Has the generator inspected storage areas for evidence of spills or leakages?	40CFR265.15(4)				
12.) Are storage drums properly labeled with the accumulation start date and the name of the contents?	40CFR262.34(a)(3)				

Audit Criteria	CFR Reference	Finding			
Shipping Requirements		Comments	**Y**	**N**	**N/A**
1.) Has a manifest been created for each type of waste and shipment?	40CFR262.20				

Audit Criteria	CFR Reference	Finding			
Shipping Requirements		Comments	**Y**	**N**	**N/A**
2.) Does the manifest designate one facility, which is permitted to handle the waste described on the manifest?	40CFR262.20 (2) (b)				
3.) Has the manifest been signed by the of the initial transporter and date of acceptance?	40CFR262.22 (2)				
4.) Does the generator of the waste possess a signed copy of the manifest from the treatment facility?	40CFR262.42(2)(b)				
5.) Are the drums associated with the shipment of waste properly labeled?	40CFR262.31 40CFR262.32				
6.) Have the drums associated with the shipment of waste been inspected by the generator and found to be free of leaks?	49CFR173.12(3)				
7.) Have copies of signed manifests from the treatment facility been retained for a minimum of 3 years?	40CFR262.23(a)				

Form 1.3 – Hazardous Waste Container Storage Area Inspection Check List

Georgia Department of Natural Resources
Environmental Protection Division Laboratory

HAZARDOUS WASTE CONTAINER STORAGE AREA INSPECTION CHECK LIST

Day:_____Month:_____Year:_____

Inspections Must Be Conducted Weekly

Instructions: Weekly, place a "Yes" next to all inspection items that meet facility requirements. Place a "No" next to all inspection items that do not meet requirements. Provide specific comments on all "No" marked items. When weekly inspection is completed, the inspector must initial at the bottom of the table. Report all "No" marked items to the appropriate supervisor.

Inspection Item	Acetonitrile	Ammonia	COD	Heavy Metals w/Hg	Heavy Metals	TKN	Mixed Solvent	Chlorinated Solvent	Pyridine	Hex Chrome	Haz Waste Samples
Number of Containers in Unit											
Containers Marked /Labeled Properly											
Containers Dated Properly											
Containers Stored Less Than 180 Days (Note # Days)											
No Leaking or Staining on Container											
Containers Closed with Top or Bung											
No Dents or Corrosion on Container											
Appropriate Aisle Space Maintained											
Containment System Free of Water or Liquids											
Inspectors Initials and date											
Eye Wash Station Checked and Operated											

Shed Temps: Room #1_____°C Room #2_____°CRoom #3_____°C Room #4_____°C

Inspection Comments:_____

Reviewed By:_____ **Date:** _____

EPD Laboratory Waste Management Standard Operating Procedures
Appendix A
(Contingency & Spill Prevention, Control and Countermeasure Plan per 40CFR265.52)

A. Laboratory waste streams and disposal requirements.

A.1 The GC/MS Laboratory provides analysis of drinking water samples and environmental samples. The following wastes are produced from the activities in the GC/MS Laboratory. These wastes are collected from satellite accumulation areas and either disposed as necessary to the sanitary sewer after neutralization and providing the concentration of constituents listed in Table 6.1 and 6.2, of SOP 6-015, would not be exceeded at the discharge point of the laboratory or transferred as needed to the hazardous waste storage building and stored in waste drums. Waste that exceed metals limits in Table 6.1, of SOP 6-015, would be neutralized and disposed of in a Metal's Standard Waste drum in the Metal's Lab.

Table A.1
GC/MS Laboratory Waste Streams

Waste Stream Source	Primary Waste Stream Hazardous Components	Final Laboratory Disposition
Preserved Aqueous Samples for Analysis – 524/624/8260/525	Hydrochloric Acid,	Sanitary sewer after neutralization to pH >5.5 and <10.5.
Method 1311 TCLP Extract * VOCs	Acetic Acid	TCLP waste drum for TCLP failure. Non Hazardous to Sanitary sewer after neutralization to pH >5.5 and <10.5.
TO15 Air Methods Pressurized Air Standards	Volatile organic compounds in Nitrogen	Returned to manufacturer
Volatile Organics Method 8260/624/524 Standards	Methanol	Mixed solvent drum
Volatile Organic Methods 524/624/8260 Autosampler waste	Hydrochloric Acid	Sanitary sewer after neutralization to pH>5.5 and pH<10.5
Semivolatile Organic Method 525 extracts and standards	Ethyl Acetate, Methylene Chloride, Methanol	Chlorinated solvent drum or Mixed solvent drum
Semivolatile	Methylene Chloride	Chlorinated solvent drum

Waste Stream Source	Primary Waste Stream Hazardous Components	Final Laboratory Disposition
Organics Method 8270 Standards and Extracts	Acetone	or Mixed solvent drum
EPA Method TO-13 PAH extracts/PUF cleaning	10% Ether/Hexane	Mixed solvent drum
EPA Method TO-13 PUF Foam Clean-up	10% Acetone/Hexane	Mixed solvent drum
GC/MS Pump Oil	Used petroleum based oil	Recycled
EPA Method TO13, PAH Standards	Hexane Methylene Chloride	Chlorinated solvent drum or Mixed solvent drum

(*)- A final report of any TCLP extract must be provided to the Sample Custodian prior to the addition of any TCLP extract to the TCLP Waste Storage Drum.

A.2 The Inorganics Laboratory provides analysis of drinking water samples and environmental samples. The following wastes are produced from the activities in the Inorganics Laboratory. These wastes are collected from satellite accumulation areas and either disposed as necessary to the sanitary sewer after neutralization and providing the concentration of constituents listed in Table 6.1 and 6.2, of SOP 6-015, would not be exceeded at the discharge point of the laboratory or transferred as needed to the hazardous waste storage building and stored in waste drums. Waste that exceed metals limits in Table 6.1, of SOP 6-015, would be neutralized and disposed of in a Metal's Standard Waste drum in the Metal's Lab.

Table A.2
Inorganics Laboratory Waste Streams

Waste Stream Source	Waste Stream Components	Final Disposition
Alkalinity Analysis Waste	0.02N H_2SO_4	Neutralize and dispose to sanitary sewer, pH >5.5 and <10.
Ammonia Analysis Waste	Sodium Phenolate	Ammonia Waste Drum
Anion/ Fluoride Analysis Waste – EPA 300.0	Potassium Hydroxide. Sodium Carbonate	Neutralize and dispose to sanitary sewer, pH >5.5 and <10.
Aqueous Preserved Samples for Analysis of Inorganic Methods (COD, TKN, NH-3, Nitrate, TOC, Tphos,O&G)	pH < 2	Neutralize and dispose to sanitary sewer, pH >5.5 and <10.

Waste Stream Source	Waste Stream Components	Final Disposition
Soil samples for Cyanide (HW program)	Cyanide, metals and organic, etc.	Lab packed in drum
Aqueous Preserved Samples for Cyanide	pH >12	Cyanide drum if positive for cyanide. If not, Neutralize and dispose to sanitary sewer, pH >5.5 and <10.
BOD reagent waste	50% Sodium Hydroxide Solution, Sulfuric Acid Solution, Winkler titration waste (contains Alkaline-Iodide-Azide, Sulfuric Acid, and Manganous Sulfate Solution)	Neutralize and dispose to sanitary sewer, pH >5.5 and <10.
Bromate/Chlorite Analysis Waste	pH >10	Neutralize and dispose to sanitary sewer, pH >5.5 and <10 with mild acid
Calibration Standards (Low Level)- COD, TKN, NH-3, Nitrate, TOC, Tphos, Ophos, Anions, Fluoride, Bromate, Chlorite	Aqueous Standards containing sulfuric acid	Neutralize and dispose to sanitary sewer, pH>5.5 and <10.
Chlorophyll Analysis Waste	Acetone	Mixed Solvent Drum
Chemical Oxygen Demand (COD) Analysis vials	Mercury Sulfate, Silver Sulfate, Chromium, Chromic Acid	COD waste drum
Color Standards	Hydrochloric Acid, Cobalt and Cobalt Compounds	Dilute to 3 to 5 times the volume with cold water. Neutralize and dispose to sanitary sewer >5.5 and <10. Run water for 5-10 minutes.
Cyanide Analysis Waste	Pyridine, Cyanide, Barbituric Acid, Sodium Hydroxide	Cyanide waste drum
Hexavalent Chromium Analysis Waste and 25 ml vials	Hexavalent Chromium in solution, Potassium pyrosulfate, Magnesium sulfate, 1,5-diphenylcarbohydrazide	Hexavalent Chromium Waste Drum
Nitrate/Nitrite Analysis Columns	Cadmium	Lab Packed in drum

Waste Stream Source	Waste Stream Components	Final Disposition
Nitrate/Nitrite Analysis Waste	Sulfuric Acid, Phosphoric Acid, Sodium Hydroxide	Neutralize and dispose to sanitary sewer, pH >5.5 and <10.
Oil & Grease Analysis Waste	Hexane, Hydrochloric Acid	Mixed Solvent Drum
pH Buffer Reference Standards	Sodium Phosphate, Potassium Phosphate, Potassium Acid Phthalate	Neutralize and dispose to sanitary sewer, pH >5.5 and <10.
Phosphorus and Ortho Phosphorus Analysis Waste	Sulfuric Acid, Sodium Hydroxide	Neutralize and dispose to sanitary sewer, pH >5.5 and <10.
Sulfide Check Reagent and Sample Analysis Waste	HACH Sulfide 2 Reagent (Potassium Dichromate)	Hexavalent Waste Drum
Sulfide Check Standard Waste and Sulfide containing samples	Sodium Hydroxide and Sulfide pH >10	Neutralize under hood, sparge with air, and dispose to sanitary sewer, pH >5.5 and <10 with mild acid
Total Organic Carbon Analysis Waste	Sulfuric Acid, Phosphoric Acid	Neutralize and dispose to sanitary sewer, pH >5.5 and <10.
Total Kjeldahl Nitrogen Analysis Waste	Sulfuric Acid	TKN Waste Drum
pH in Soil and Waste samples	pH<2 or pH>10	Lab packed in drum

A.3 The Metals Laboratory provides analysis of drinking water samples and environmental samples. The following wastes are produced from the activities in the Metals Laboratory. These wastes are collected from satellite accumulation areas and either disposed as necessary to the sanitary sewer after neutralization and providing the concentration of constituents listed in Table 6.1 and 6.2, of SOP 6-015, would not be exceeded at the discharge point of the laboratory or transferred as needed to the hazardous waste storage building and stored in waste drums. Waste that exceed metals limits in Table 6.1, of SOP 6-015, would be neutralized and disposed of in a Metal's Standard Waste drum in the Metal's Lab.

Table A.3
Metals Laboratory Waste Streams

Waste Stream Source	Waste Stream Components	Final Disposition
Preserved Aqueous Samples for Analysis	Aqueous Samples preserved to pH <2	Neutralize and dispose to sanitary sewer, pH >5.5 and <10.

Waste Stream Source	Waste Stream Components	Final Disposition
Digested Samples	Aqueous Samples containing Nitric and Hydrochloric Acid	Neutralize and dispose to sanitary sewer, pH >5.5 and <10.
Instrumentation (ICP and ICP/MS) Waste	Aqueous Samples containing Nitric and Hydrochloric Acid	Neutralize and dispose to sanitary sewer, pH >5.5 and <10.
Instrumentation (Mercury) Waste	Aqueous Samples containing Nitric and Sulfuric Acid, Hydrochloric Acid	Neutralize and dispose to sanitary sewer, pH >5.5 and <10.
Ignitability/Flash Point Analysis Waste	Xylenes or other waste solvent and liquids after analysis	Mixed Solvent Drum
Various Calibration Standards (Low Level)	Aqueous Standards containing Nitric and Hydrochloric Acid	Neutralize and dispose to sanitary sewer, pH >5.5 and <10.
GC/MS Pump Oil	Used petroleum based oil	Recycled
Method 1311 TCLP Extracts *	Acetic acid/Sodium Hydroxide	TCLP Waste Drum

(*)- A final report of any TCLP extract must be provided to the Sample Custodian prior to the addition of any TCLP extract to the TCLP Waste Storage Drum.

A.4 Microbiological Laboratory provides analysis of drinking water samples and environmental samples. The following wastes are produced from the activities in the Microbiological Laboratory. These wastes are collected from satellite accumulation areas and disposed as necessary to the sanitary sewer after neutralization and/or sterilization and providing the concentration of constituents listed in Table 6.1 and 6.2 would not be exceeded at the discharge point of the laboratory.

Table A.4
Microbiological Laboratory Waste Streams

Waste Stream Source	Waste Stream Components	Final Disposition
Positive Sample Test Tubes of Lauryl Tryptose Broth, Brilliant Green Bile 2%, EC Broth, and EC+Mug	Positive for one or more of the microorganisms listed in Table 4.1	Autoclave and dispose to sanitary sewer
Positive Drinking Water Samples, Colilert Samples	Positive for one or more of the microorganisms listed in Table 4.1	Autoclave and dispose to sanitary sewer
Used Membrane Filters,	Positive for one or more of the microorganisms listed	Autoclave and dispose to trash

Waste Stream Source	Waste Stream Components	Final Disposition
Heterotrophic Plate Counts	in Table 4.1	
Heterotrophic Plate Count Samples	Positive for one or more of the microorganisms listed in Table 4.1	Autoclave and dispose to trash
Stock Bacteria Cultures, and QC Check Samples, Bioindicator Spore Strips and Ampoules	Positive for one or more of the microorganisms listed in Table 4.1	Autoclave and dispose to trash
Spiked Cryptosporidium and Giardia Samples in Carboys	Positive for one or more of the microorganisms listed in Table 4.1	Autoclave and dispose to sanitary sewer
Contaminated laboratory supplies used in the micro laboratory	Transfer sticks, laboratory gloves, spill wipe tissues, etc.	Autoclave and dispose to trash
Used or expired API (Analytical Profile Index) Reagents Droppers Waste • Ferric Chloride • Indole • Voges Proskauer B	Reagents containing – Ferric Chloride, Isobutanol, HCL, Potassium Hydroxide.	Neutralize and dispose to sanitary sewer, pH >5.5 and <10.
API Reagents Droppers Waste Voges Proskauer A	Ethanol, 1-napthol	Mixed Solvent Drum
Ethanol for Sterilization	Ethanol.	Mixed Solvent Drum
pH Buffer Reference Standards	Sodium Phosphate, Potassium Phosphate, Potassium Acid Phthalate	Neutralize and dispose to sanitary sewer, pH >5.5 and <10.
Thermometers	Ethylene Glycol	Mixed Solvent Drum
Mercury Bulbs	Mercury	Lab Packed
pH meter electrode waste	Silver Chloride	Metals Hazardous Waste Container
pH meter electrode waste	Potassium Chloride	Dispose to sewer
Glassware pH Indicator	Bromothymol Blue	Dispose to sewer
Methanol+Dapi Mixture	4,6-diamidino-2-phenylindole dihydrochloride	Mixed Solvent Drum

A.5 The Organics Laboratory provides analysis of drinking water samples and environmental samples. The following wastes are produced from the activities in the Organics Laboratory. These wastes are collected from satellite accumulation areas and either disposed as necessary to the sanitary sewer after neutralization and providing the concentration of constituents listed in Table 6.1 and 6.2, of SOP 6-015, would not be exceeded at the discharge point of the laboratory or transferred as needed to the hazardous waste storage building and stored in waste drums. Waste that exceed metals limits in Table 6.1, of SOP 6-015, would be neutralized and disposed of in a Metal's Standard Waste drum in the Metal's Lab.

Table A.5
Organics Laboratory Waste Streams

Waste Stream Source	Primary Waste Stream Hazardous Components	Final Laboratory Disposition
Glassware Rinsing	Acetone/Methanol	Mixed Solvent Drum
DW Method 504.1 Extractions & Standards	Hexane	Mixed Solvent Drum
DW Method 507/508 Extracts	Methylene Chloride	Chlorinated Solvent Drum
DW Method 507/508 Extracts & Standards	Hexane/Acetone	Mixed Solvent Drum
DW Method 515.4 Extractions & Standards	MTBE	Mixed Solvent Drum
DW Method 515.4 Diazomethane	Ethyl Ether	After Neutralizing with Silicic acid Mixed Solvent Drum
DW Method 515.4 Extracted Aqueous Sample	pH <2	Sanitary sewer after neutralization to pH >5.5 and <10.
DW Method 531.2 Carbamate Samples	pH 3.8	Sanitary sewer after neutralization to pH >5.5 and <10.
DW Method 531.2 Carbamate Extracts, Contains BDMC	pH 3.8 and contains BDMC	Mixed Solvent Waste Drum
DW Method 531.1 & 547 LC Mobile phases	Methanol	Mixed Solvent Drum
DW Method 548.1 Extracts	Methylene Chloride	Chlorinated Solvent Drum
DW Method 548.1 Extractions	pH<3	Sanitary sewer after neutralization to pH >5.5 and <10.

Waste Stream Source	Primary Waste Stream Hazardous Components	Final Laboratory Disposition
DW Method 549.2 LC Mobile phase	Orthophosphoric acid, diethylamine, & hexanesulfonic acid sodium salt in water	Mixed Solvent Drum
DW Method 550.1 Extracts	Acetonitrile	Acetonitrile Drum
DW Method 550.1 LC Mobile phases	Acetonitrile	Acetonitrile Drum
DW Method 551.1 Extracts	Pentane	Mixed Solvent Drum
DW Method 552.2 Extracted aqueous samples	pH <0.5	Sanitary sewer after neutralization to pH >5.5 and <10.
DW Method 552.2 Sample extracts	MTBE	Mixed Solvent Drum
EPA Method TO-11A Carbonyl Extracts	Acetonitrile/Water	Acetonitrile Drum
EPA Method 3510C Extraction for Semi-Volatiles Aqueous extracted sample	pH >11	Sanitary sewer after neutralization to pH >5.5 and <10.
EPA Method 3510C Extraction for 8081A/8082 - Extracts	Hexane/Acetone	Mixed Solvent Drum
EPA Method 3510C Extraction for 8015B – Extracts/Standards	Methylene Chloride	Chlorinated Solvent Drum
EPA Method 3541 Automated Soxhlet Extraction for 8015B – Extracts	Methylene Chloride	Chlorinated Solvent Drum
EPA Method 3541 Automated Soxhlet Extraction for 8081A/8082 – Extracts	Hexane	Mixed Solvent Drum
EPA Method 3550B Ultrasonic Extraction for Biological Tissue - Extracts	Hexane	Mixed Solvent Drum
EPA Method 8151A Standards	Ethyl Acetate, Acetone, Ethyl Ether	Mixed Solvent Drum
EPA Method 8151A	Methylene Chloride	Chlorinated Solvent

Waste Stream Source	Primary Waste Stream Hazardous Components	Final Laboratory Disposition
Herbicides Extraction Sample Wash		Drum
EPA Method 8151A Diazomethane	Ethyl Ether	After Neutralizing with Silicic acid Mixed Solvent Drum
EPA Method 8151A Herbicides Extracted Aqueous Sample	pH <2	Sanitary sewer after neutralization to pH >5.5 and <10.
EPA Method 3580A Waste Dilutions	Methylene Chloride	Chlorinated Solvent Drum
EPA Method 3580A Waste Dilutions	Hexane	Mixed Solvent Drum
EPA Method 3640A GPC Cleanup	Methylene Chloride	Chlorinated Solvent Drum
EPA Method 3665A Sulfuric acid clean-up	Sulfuric acid/water	TCLP Waste Drum
Glassware Rinsing for all methods	Methylene Chloride	Chlorinated Solvent Drum
Glassware Rinsing for all methods	Ethyl Ether/Hexane/ Methanol/Petroleum Ether/Acetone/MTBE	Mixed Solvent Drum
Glassware Rinsing for all methods	Acetonitrile	Acetonitrile Drum
Standards for all methods	Methylene Chloride	Chlorinated Solvent Drum
Standards for all methods	Ethyl Ether/Hexane/ Methanol/Petroleum Ether/Acetone/MTBE	Mixed Solvent Drum
Standards for all methods	Acetonitrile	Acetonitrile Drum
Drying Columns and Florisil Columns	Methylene Chloride	Chlorinated Solvent Drum
Drying Columns and Florisil Columns	Ethyl Ether/Hexane/ Methanol/Petroleum Ether/Acetone/MTBE	Mixed Solvent Drum
Drying Columns	Acetonitrile	Acetonitrile Drum
Method 1311 TCLP Extracts*	Acetic acid/Sodium Hydroxide	TCLP Waste Drum

(*)- A final report of any TCLP extract must be provided to the Sample Custodian prior to the addition of any TCLP extract to the TCLP Waste Storage