



Environmental Analysis Program

Pomona College
Biogeochemistry Laboratory

SOP-L006

Waste Disposal and Hazardous Waste Pickup

Standard Operating Procedure

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1. Purpose

This procedure describes the classification, segregation, labeling, storage, and disposal of all laboratory waste generated in EA Program laboratories, with emphasis on hazardous chemical waste

requiring EH&S pickup. It consolidates and expands the waste disposal sections of [SOP-L003 Hazardous Materials Handling](#) (Sections 8.1–8.6) into a standalone reference that can be posted in the waste accumulation area and used during training.

2. Scope

- **Applies to:** All laboratory waste generated in EA Program laboratories (SGM 133, 134, 135), including chemical waste, biological waste, sharps, and non-hazardous solid waste
- **Does not apply to:** Radioactive waste (not generated in EA Program labs); field waste (see [SOP-F001](#)); e-waste and surplus equipment (coordinate with campus surplus property office)
- **Location:** All EA Program laboratory spaces

3. Responsibilities

Role	Responsibility
Lab PI	Ensure compliance with campus and regulatory waste policies; sign manifests as generator
Lab Manager	Coordinate EH&S pickups, maintain satellite accumulation areas, train personnel
All Lab Personnel	Segregate and label waste correctly per this SOP
Campus EH&S	Collect hazardous waste, prepare manifests, arrange off-site disposal

4. Definitions

- **Characteristic hazardous waste:** Waste that exhibits ignitability, corrosivity, reactivity, or toxicity as defined by 40 CFR Part 261; must be managed as RCRA hazardous waste regardless of quantity.
- **EH&S (Environmental Health and Safety):** The Pomona College department responsible for regulatory compliance, hazardous waste pickup scheduling, safety training, and chemical spill response coordination.
- **Hazardous waste manifest:** A shipping document that tracks hazardous waste from the point of generation to the final disposal facility; prepared by EH&S and signed by the PI as generator.
- **Listed hazardous waste:** Waste from specific industrial processes or containing specific chemicals appearing on EPA lists (F, K, P, U lists under 40 CFR Part 261); managed as RCRA hazardous waste.
- **Satellite accumulation area (SAA):** A designated location at or near the point of waste generation where up to 55 gallons of hazardous waste (or 1 quart of acutely hazardous waste) may be accumulated without a time limit; must be under the control of the operator who generates the waste.

- **Small Quantity Generator (SQG):** A US EPA RCRA classification for facilities generating 100–1,000 kg of hazardous waste per month; Pomona College’s status, which sets 270-day accumulation limits and specific storage, training, and emergency planning requirements.
- **Waste stream:** A category of hazardous waste defined by chemical composition and hazard class (e.g., halogenated solvents, non-halogenated solvents, corrosive acids, heavy metal solutions); wastes must be segregated by compatible stream to prevent dangerous reactions during storage and transport.

5. Regulatory Context

Pomona College is classified as a Small Quantity Generator (SQG) of hazardous waste under RCRA (40 CFR Part 262) and California DTSC regulations. Key requirements:

- Hazardous waste may be accumulated in satellite accumulation areas (SAAs) near the point of generation in containers of 55 gallons or less (1 quart for acutely hazardous waste)
- Once full, containers must be moved to the central accumulation area and picked up by EH&S within 3 days
- All containers must be labeled with the words “Hazardous Waste,” the contents, the hazard(s), and the accumulation start date
- The generator (Lab PI) must sign the packing manifest

6. Waste Classification

6.1. Non-Hazardous Solid Waste

Waste Type	Disposal
Paper, packaging, cardboard	Recycling bins
Uncontaminated gloves and wipes	Standard trash
Clean glassware (broken)	Sharps box or wrapped cardboard, then trash
Uncontaminated soil (dried)	Standard trash or return to field site
Used aluminum tins (clean)	Recycle or reuse

6.2. Hazardous Chemical Waste

Any waste that is ignitable, corrosive, reactive, or toxic (per RCRA D-list), or that is a listed waste (F, K, P, or U list), must be collected and disposed as hazardous waste. Common EA Program hazardous waste streams:

Waste Stream	Typical Source SOPs	Container
Acid waste (HNO ₃ , HCl, H ₂ SO ₄)	L410, L411, L403	Poly carboy, labeled “Acid Waste”
Base waste (NaOH, KOH)	Various	Separate poly carboy

Waste Stream	Typical Source SOPs	Container
Halogenated solvent waste (chloroform, DCM)	L409	Amber glass, labeled “Halogenated Solvent Waste”
Non-halogenated solvent waste (acetone, ethanol, hexane)	Various	Separate glass or poly container
Heavy metal solutions (Pb, Cd, Cr, Hg)	L410, L411	Poly carboy, labeled by metal
Formaldehyde solutions	L305 (preservatives)	Glass, labeled “Formaldehyde Waste”
Oxidizer solutions (H ₂ O ₂ , NaClO ₃)	L412	Collect separately; do not mix with organic waste
Used oil (pump oil)	Vacuum pumps	Labeled container

Critical Segregation Rules

- **Never mix** acids with bases, oxidizers with organics, or halogenated with non-halogenated solvents.
- **Never pour** hazardous waste down the drain unless explicitly approved by EH&S for that specific waste stream.
- When in doubt, treat as hazardous and collect for EH&S pickup.

6.3. Biological Waste

Waste Type	Disposal
Non-pathogenic cultures (soil microbes)	Autoclave, then standard trash
Colilert/Quanti-Tray materials (L305)	Standard trash after UV deactivation or autoclave
eDNA extraction waste (bead tubes, filters)	Standard trash (non-infectious after extraction)
Foreign soil waste (L015)	Autoclave per SOP-L015 before disposal

6.4. Sharps

Waste Type	Disposal
Needles, syringes with needles	Sharps container (red)
Broken glass (contaminated)	Sharps container
Razor blades, scalpels	Sharps container
Broken glass (uncontaminated)	Cardboard box labeled “Broken Glass,” then trash
Intact glass vials (uncontaminated)	Rinse and recycle, or trash

6.5. Drain-Disposable Waste

A limited set of aqueous, non-hazardous solutions may be poured down the drain with copious water, **only if approved by EH&S**:

- Dilute (less than 1%) salt solutions (NaCl, KCl, K₂SO₄, Na₂SO₄) at neutral pH
- Dilute sugar or buffer solutions at neutral pH
- Neutralized acid or base solutions (pH 5–9) that contain no metals or other hazardous constituents

! Important

If you are unsure whether a waste can go down the drain, collect it as chemical waste. The default is always to collect, never to drain.

7. Procedure

7.1. Labeling Waste Containers

1. Every waste container in the SAA must have a hazardous waste label (available from EH&S or the lab manager) before any waste is added
2. Fill in: waste description (chemical names and approximate percentages), hazard(s) (corrosive, flammable, toxic, etc.), accumulation start date, and laboratory location
3. Update the label if new constituents are added to the container

7.2. Accumulating Waste

1. Add waste to the appropriate labeled container in the SAA
2. Keep containers closed when not actively adding waste
3. Do not fill containers beyond 80% capacity (leave headspace for thermal expansion and safe handling)
4. Inspect containers weekly for leaks, corrosion, or label degradation

7.3. Requesting EH&S Pickup

1. When a container is full (or the study is complete), notify the lab manager
2. The lab manager contacts campus EH&S to schedule a pickup
3. Prepare a packing manifest listing: container number, contents (chemical names and approximate percentages), volume, hazard class, and generator (PI) name
4. The PI reviews and signs the manifest
5. Move the container to the central pickup area designated by EH&S
6. EH&S collects the waste, provides a manifest copy, and arranges off-site treatment or disposal

7.4. Empty Container Management

1. Triple-rinse empty reagent bottles with the appropriate solvent (water for aqueous chemicals, the same solvent for organic chemicals)
2. Remove or deface the original label
3. Collect rinse liquid as waste (add to the corresponding waste stream)
4. Clean, delabeled glass bottles may be reused for non-critical purposes or recycled
5. Do not reuse containers that held acutely hazardous (P-listed) chemicals; dispose as hazardous waste

8. Satellite Accumulation Area (SAA) Management

- Each SAA is located at or near the point of waste generation (e.g., the fume hood where digestions are performed, the bench where extractions occur)
- Maximum volume in an SAA: 55 gallons of hazardous waste (or 1 quart of acutely hazardous waste)
- Containers in the SAA must be in good condition, compatible with the waste, and kept closed except when adding waste
- Spill containment (secondary tray) is required under all liquid waste containers
- The lab manager inspects SAAs monthly and logs the inspection on the SAA checklist posted in each area

9. Emergency Spill Response

For waste container spills, follow [SOP-L004 Chemical Spill Response](#). Key points:

- Contain the spill using absorbent materials appropriate to the waste type (do not use paper towels for solvent spills; use chemical absorbent pads)
- Contaminated absorbent becomes hazardous waste; bag, label, and include in the next EH&S pickup
- Report all spills to the lab manager and PI; document in the incident log

10. References

- 40 CFR Part 262. *Standards Applicable to Generators of Hazardous Waste*. US EPA.
- California Code of Regulations, Title 22, Division 4.5. *Hazardous Waste Control Law*. California DTSC.
- Pomona College EH&S. *Hazardous Waste Management Guide*. Available from the Campus Safety Office.
- National Research Council. (2011). *Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards* (updated ed.). National Academies Press.

11. Related SOPs

SOP	Title	Relationship
L002	Laboratory Safety	General safety framework
L003	Hazardous Materials Handling	Chemical safety and storage
L004	Chemical Spill Response	Spill cleanup procedures
L005	Chemical Inventory	Tracking chemicals and SDS
L015	Foreign Soil Handling	Autoclave requirements for imported soil

12. Training Record

Before handling laboratory waste independently, personnel must:

1. Read this SOP and [SOP-L003](#) in full
2. Locate the SAAs in each laboratory room and identify the waste streams currently in use
3. Demonstrate proper waste labeling (fill out a hazardous waste label correctly)
4. Demonstrate correct segregation by assigning 5 sample waste items to the correct container
5. Review the spill response procedure in [SOP-L004](#)
6. Be signed off by the lab manager or PI