

Laboratory Waste Guidebook for Rhode Island Colleges



Environmental Policy & Principles

In accordance with the [College Safety Policy], the [INSERT COORDINATING DEPARTMENT] has established this Environmental Policy and these Principles. All members of the College are responsible for complying with this policy.

Environmental Policy

[INSERT COLLEGE'S ENVIRONMENTAL POLICY]

EXAMPLE:

The [INSERT COLLEGE NAME] is committed to compliance with all applicable federal, state and local regulations, to pollution prevention objectives, and to continual improvement of environmental systems.

Environmental Principles

[INSERT COLLEGE'S ENVIRONMENTAL PRINCIPLES]

EXAMPLE:

To achieve this goal the College will adhere to the following Environmental Principles:

- Comply with all applicable environmental laws and regulations.
- Educate and train faculty, staff and students to properly implement College programs and procedures.
- Minimize College impact on the environment and surrounding community.
- Continually reduce College impact to the environment by implementation of pollution prevention and waste minimization programs.
- Monitor adherence with College programs by measurement of performance against established goals and matrices.

[INSERT SIGNATURE OF COLLEGE PRESIDENT]

[INSERT TITLE OF SIGNEE]

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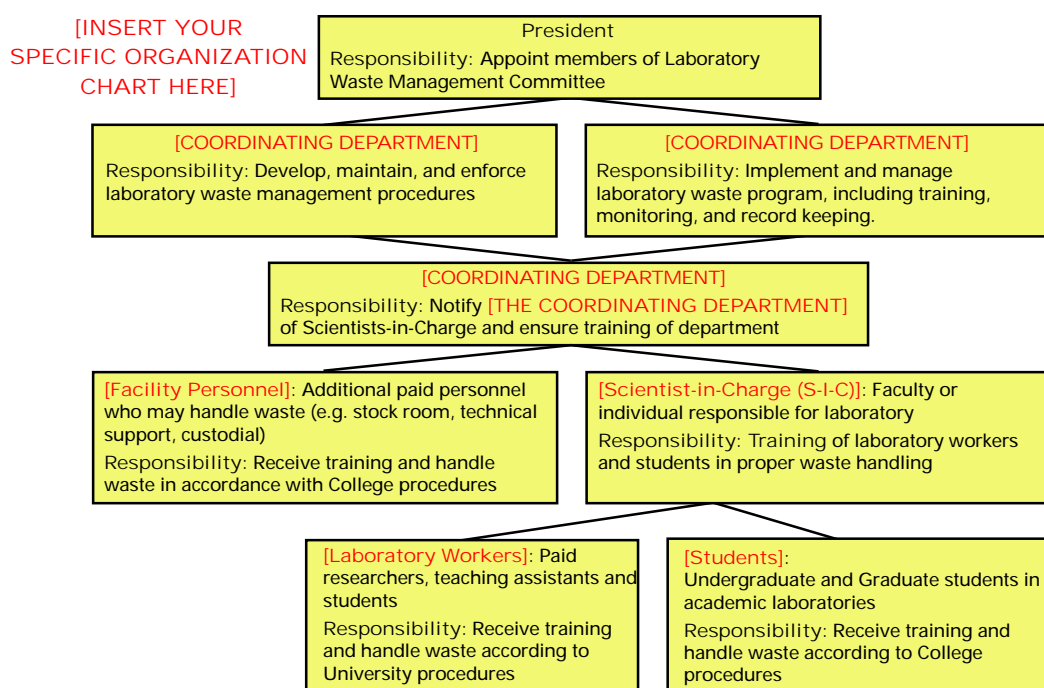
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Laboratory Waste Management

Many types of waste are generated in the laboratories at the [INSERT COLLEGE NAME]. This guidebook contains information regarding the types of waste generated and the methods for waste handling, including the procedures to follow in the event of a spill.

Waste: Material that has no further use, has been abandoned, and/or is released into the environment.

The following chart is an example that identifies the *roles and responsibilities* for College personnel who handle laboratory waste:



Enforcement [Insert College's Enforcement Procedures]

Example:

The [Laboratory Waste Management Committee] is responsible for enforcement of the procedures in this guidebook. The following actions will be taken in the event of a deficiency:

- 30 days to correct the deficiency or notify the [COORDINATING DEPARTMENT] if assistance is needed.
- If not corrected, notification of [Department Chairperson], Dean, [Lab Waste Management Committee], President's office.
- Warning letter of enforcement action sent if deficiency is not corrected within 60 days of initial notice.
- Enforcements can include: correction by the [COORDINATING DEPARTMENT] with costs assessed to the academic department; closure of laboratory; loss of laboratory privileges; or others as appropriate.

Hazardous Chemical Waste

Hazardous Waste: A substance which exhibits one of the four hazardous characteristics (corrosivity, ignitability, reactivity, toxicity) or is specifically listed as hazardous waste by the EPA or RI.

Because of potential risk of harmful exposure, hazardous waste is regulated by both federal and state law. Hazardous waste from the College's laboratories must be managed according to the procedures in this guidebook. Contact [THE COORDINATING DEPARTMENT at CONTACT NUMBER] if you have any questions.

Waste Characterization

Use the Waste Characterization Checklist on page 5 to determine whether your waste is hazardous or non-hazardous. Then use the table of contents to locate the section which describes the handling procedures for that type of waste. Carefully read and follow the procedures exactly as instructed.

Note: Combined wastes are not discussed in this book, as they are difficult to categorize. In general, follow the most stringent management method of the components in the mix (for example: biohazardous + hazardous = hazardous). When in doubt as to how to handle a particular waste, it is important that you contact [COORDINATING DEPARTMENT]. Failure to do so could result in a mistake that might cause serious injury or adversely impact the environment or compromise compliance with regulations.



Waste Characterization Checklist

Is the waste included in EPA's list of hazardous wastes?

(e.g. phenol, potassium cyanide, hydrofluoric acid)

Is it ignitable or flammable?

- Is it a liquid that has a flash point below 93° C? (exclude aqueous solutions containing less than 24% alcohol by volume)
- Is it a liquid with a vapor pressure above 40psi at 38° C?
- Is it a liquid or a gas that has a flash point above 23° C and a boiling point below 38° C?
- Is it a liquid that ignites spontaneously in dry or moist air or below or equal to 61° C?
- Is it a solid or a semi-solid that gives off flammable vapors below 38° C?
- Is it a non-liquid capable of causing fire by friction, absorption of moisture or spontaneous chemical change?
- Is it a flammable or ignitable compressed gas?
- Is it an oxidizer that yields oxygen readily to stimulate the combustion of organic matter?
Examples: acetone, isopropyl alcohol, methanol, ethylene

Is it corrosive?

- Is it an aqueous solution with a $\text{pH} \leq 2$ or a $\text{pH} \geq 12.5$?
- Is the waste capable of corroding steel?
Examples: 2M hydrochloric acid, 2M sodium hydroxide

If you answered "Yes" to any of these questions, it is a hazardous waste

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Is it reactive?

- Does it react violently or become unstable with water or produce toxic gases or explosive mixtures?
- Is it unstable or is it explosive, either readily or with a strong initiating source?
- Does it contain cyanide or sulfides and generate toxic gases or explosive mixtures when exposed to a pH between 2 and 12.5?
Examples: 30% hydrogen peroxide, lithium aluminum hydride, vinyl magnesium bromide in tetrahydrofuran

Is it toxic or extremely hazardous?

- Does it contain contaminants found in the EPA table of toxic substances in exceedance of the EPA standard?
- Does it contain a Class 2, Division 2.3 or Class 6, Division 6.1 hazardous material as defined by USDOT?
- Does it have an LD_{50} below 5,000 mg/kg of body weight?
- Is it a known or suspected carcinogen or a known teratogen?
Examples: benzene, chloroform, mercury

Consult the [COORDINATING DEPARTMENT at CONTACT NUMBER]

If all of your answers were "No" it is a non-hazardous waste

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Radioactive	Call [RADIATION SAFETY at CONTACT NUMBER]

Hazardous Waste Containers

All hazardous waste material must be stored in an appropriate container.

The containers must be:

- Compatible with the waste material being stored; check MSDS
- Sturdy and leak-proof
- An appropriate size
- Under the control of the person generating the waste
- Closed at all times except when adding waste, and have a tight-fitting cap
- Clearly identified with a hazardous waste label (see page 7)



Containers that previously held materials that might be incompatible with the waste to be stored (including food, beverage and detergent containers) are NOT suitable for storing waste.

Incompatible Materials

Certain hazardous wastes cannot be safely mixed or stored with other materials because a severe reaction or explosion can occur or an extremely toxic reaction product can result.

The chemical label and/or MSDS should provide information on incompatibilities. In general, hazardous waste containers should be segregated by hazard class as listed below:

- Ignitable/Flammable
- Pyrophorics
- Explosive
- Toxic
- Reactive with Water
- Reactive with Air
- Peroxide Formers
- Oxidizers
- Corrosive
- Concentrated Acids
- Concentrated Base
- Reducers

Hazardous Waste Labels

Example:

CAUTION HAZARDOUS WASTE	
Building: <u>Smith</u>	Room: <u>207</u> Bottle#: <u>2</u>
Responsible Party: <u>Bill Jones</u>	Phone: <u>49999</u>
Description & Quantity of Waste: (Chemical Names - No Formulae)	Pick-Up Date:
<u>15% Chloroform</u>	
<u>15% Dichloromethane</u>	
<u>20% Ethyl Ether</u>	
<u>45% Acetone</u>	
<u>5% Water</u>	
Physical State:	Hazardous Properties:
<input type="checkbox"/> Solid <input type="checkbox"/> Gas	<input checked="" type="checkbox"/> Toxic <input type="checkbox"/> Corrosive
<input checked="" type="checkbox"/> Liquid	<input type="checkbox"/> Reactive <input type="checkbox"/> Explosive
<input type="checkbox"/> Other _____	<input checked="" type="checkbox"/> Ignitable/Flammable
	<input type="checkbox"/> Other _____
Remarks: <u>Bottle contains 2.5L</u>	
<i>University of Rhode Island Kingston, RI</i>	

It is the responsibility of the Scientist-in-Charge to ensure that the waste container label includes:

- The words "Hazardous Waste"
- The identity of the hazardous waste
- If the waste is a mixture, a list of all the components and the percentage of each (these should sum to 100%)
- The primary hazards presented by the waste (e.g. "toxic", "reactive")
- The name of the person responsible for the waste, their location and phone number

Remove or deface all extraneous container labels.

Waste Logs [INSERT COLLEGE'S PROCEDURES FOR WASTE LOGS]

Example:

Where a number of additions will be made to a waste container, a waste log may be used to record information for each addition. While being filled, the waste container must have a hazardous waste label and the label must reference the waste log. The waste log must also reference the waste container number.

When the waste container is full, the information on the waste log must be summarized onto the container hazardous waste label. Please use the standard [INSERT COLLEGE NAME] laboratory waste log provided by [INSERT COORDINATING DEPARTMENT].

Laboratory Hazardous Waste Accumulation Area

Laboratory Hazardous Waste

Accumulation Area: An area in the laboratory where small quantities of hazardous waste are temporarily stored prior to collection for disposal by [INSERT COORDINATING DEPARTMENT]. The Laboratory Hazardous Waste Accumulation Area could be a room, a bench top, or a laboratory hood.

Such accumulation areas are regulated by federal and state law. To ensure compliance with these regulations and the College's requirements, the following conditions must be met:

- Mark with the words "HAZARDOUS WASTE ACCUMULATION AREA."
- Locate in the laboratory and under the control of the person generating the waste.
- All containers must meet the container and labeling requirements outlined on pages 6 and 7.
- Segregate incompatible substances; do not mix in the same container.
- Liquid waste containers should have secondary containment.
- No more than one container of each type of hazardous waste generated can be stored at one time.
- No more than 55 gallons of hazardous waste or one (1) quart of acutely hazardous (P-listed) waste can be stored at one time.
- Emergency response information must be posted:
 - emergency phone numbers
 - location of fire extinguishers and fire alarms
 - location of spill control materials and MSDSs
- Must contain appropriate spill control kits for chemicals used in that laboratory.



Pick-Up and Disposal

[COORDINATING DEPARTMENT] is responsible for the retrieval, transport, and disposal of all hazardous wastes from laboratories. Full containers must be removed from the laboratory hazardous waste accumulation area within 3 days of becoming full. When a waste container becomes full, the laboratory must notify [COORDINATING DEPARTMENT] immediately to schedule a pick-up.

TO HAVE WASTE REMOVED FROM THE LABORATORY:

[INSERT COLLEGE PROCEDURES]

Example:

1. Complete a "Request for Hazardous Waste Disposal" form and fax to [COORDINATING DEPARTMENT at CONTACT NUMBER], or email to: [COORDINATING DEPARTMENT EMAIL ADDRESS]
2. Call [COORDINATING DEPARTMENT at CONTACT NUMBER] to confirm receipt of fax or email.
3. A [COORDINATING DEPARTMENT] staff member will call to schedule a time to remove the waste from your laboratory.
4. The laboratory is responsible for ensuring that the waste container is properly labeled and is accompanied by a completed, typed, "Request for Hazardous Waste Disposal" form. Commercial products must also be accompanied by an MSDS.
5. A knowledgeable user will be present during pick-up to verify the contents of the waste.

Chemical Clean-Out [INSERT COLLEGE'S PROCEDURES]

Example:

When chemicals that are still in their original containers need to be removed from an area (e.g. laboratory, stockroom, or storage cabinet), these procedures should be followed:

1. Inventory all chemicals present to the extent possible.
2. Complete a "Laboratory Clean-Out" form indicating the chemical names and quantities and fax to [INSERT COORDINATING DEPARTMENT at CONTACT NUMBER], or email to: [COORDINATING DEPARTMENT'S EMAIL ADDRESS].
3. Call [INSERT COORDINATING DEPARTMENT at CONTACT NUMBER] to confirm receipt of fax or email and to schedule clean-out.

**[INSERT COORDINATING DEPARTMENT] will conduct all chemical clean-outs!
NO CHEMICAL WASTE IS TO BE DISPOSED OF DOWN DRAINS!**

Specific Handling Procedures For...

Example:

HPLC Wastes

Solvent wastes generated from HPLC equipment are subject to hazardous waste regulations. However, due to the nature of the equipment, the procedures for collection and handling of HPLC solvent wastes are different than for other chemical wastes generated in laboratories. For example, HPLC waste containers require special caps and must vent to a fume hood. Contact [\[COORDINATING DEPARTMENT\]](#) for correct waste collection procedures.

Mercury Waste

Mercury metal must be collected for recovery and recycling. Due to its well-established toxicity and environmental persistence, it must not be released into the environment and should be handled as a hazardous waste. All waste mercury must be collected in closed polyethylene containers with the words “waste mercury metal” clearly marked.



If a mercury thermometer breaks, call [\[INSERT COORDINATING DEPARTMENT at CONTACT NUMBER\]](#) for assistance. The [\[INSERT NAME OF COLLEGE\]](#) encourages laboratories to switch to digital or spirit thermometers to minimize mercury use.

Photographic Wastes

Each photographic process's waste stream needs to be evaluated for disposal. Call [\[INSERT COORDINATING DEPARTMENT at CONTACT NUMBER\]](#).

Radioactive Waste:

All radioactive waste should be handled in consultation with the Radiation Safety Office. Please call [\[CONTACT NUMBER\]](#) for assistance.



Specific Handling Procedures For...

Example:

Other

If you are generating a waste stream and are unsure of the waste characteristics or the collection and handling procedures, contact [INSERT COORDINATING DEPARTMENT].

Unknowns

If a chemical or waste container of unknown contents is discovered:

1. Label it as "UNKNOWN".
2. Attach a note detailing any information about what the chemical might be, where it was found, and in what experiment it may have been used.
3. Contact [INSERT COORDINATING DEPARTMENT] for assistance.

If you find any unlabeled chemical that has crystallized, or there is any other indication that it may be unstable, DO NOT TOUCH IT - contact [INSERT COORDINATING DEPARTMENT] immediately.

Gas Cylinders

Gas cylinders should be returned to the manufacturer or distributor whenever possible. Unreturnable cylinders and lecture bottles will be collected by [COORDINATING DEPARTMENT]. Tag for disposal and complete a "Request for Gas Cylinder Removal" form. Fax to [COORDINATING DEPARTMENT at CONTACT NUMBER], or email to: [COORDINATING DEPARTMENT'S EMAIL ADDRESS]

Empty Chemical Containers

Contamination Type	Residue Amount	Container Type	Handling Procedure
Hazardous/ Chemical/ Pharmaceutical	Minimal/ None	Glass	Ensure there are no free liquids Remove lid Allow residue to dissipate under hood Remove all hazard warning labels Put in box and seal box Dispose of box in regular trash
		Plastic	Ensure there are no free liquids Remove lid Allow residue to dissipate under hood Remove all hazard warning labels Dispose in regular trash
Acute Hazardous (P-Listed)	Any	All	Label and dispose of as hazardous waste (see page 7)
Biological	Any	All	Label and dispose of as biological waste (see page 13)

Biological Waste Management

Biological Waste: Any waste that is potentially biohazardous, infectious, or pathological.

Biological waste includes:

- human and animal blood, blood products, body fluids, tissue, and body parts;
- cultures and stocks of infectious agents;
- contaminated animal carcasses, body parts and bedding of animals known to have been exposed to infectious agents (animal wastes);
- bodily wastes and contaminated materials from humans or animals isolated due to infection with a highly communicable disease; and
- items such as gloves, disposable safety glasses and plastic that are heavily soiled with biological materials

Biological waste may also include sharp materials (sharps - see pg. 16)

Packaging and Labeling Biological Waste for Disposal



- Place biomedical waste in rigid container that is double-lined with red biohazard bags, (all bags and containers are provided by [INSERT COORDINATING DEPARTMENT]).
 - Ensure packaged waste is within weight limits indicated on container.
 - When bag is full, double tape it.
 - Label outer bag with the College's ID labels provided by [INSERT COORDINATING DEPARTMENT].
 - Securely close container; triple tape all seams.
- Immediately notify [COORDINATING DEPARTMENT] that container is ready for pick-up.
 - Animal waste should remain frozen until pick-up is scheduled

[COORDINATING DEPARTMENT] is responsible for retrieval, transport, and disposal of all biological waste from laboratories. A container that is leaking, improperly packaged, improperly labeled or containing loose sharps will not be picked up.

*Note: Biological waste + non-hazardous waste = biological waste
Biological waste + hazardous waste = hazardous waste*

Pharmaceutical Waste Management

Pharmaceutical Waste: Any waste Drug Enforcement Agency or Rhode Island controlled substances used in research/teaching.

Pharmaceutical waste must not be disposed of in the regular trash. Although most pharmaceutical waste materials are not regulated as hazardous waste, they do require special handling and disposal.

Example:

All pharmaceutical waste must be submitted to [INSERT COORDINATING DEPARTMENT].

A pharmaceutical waste label (as shown at right) must be completed and attached to all pharmaceutical waste containers.

To have pharmaceutical waste removed from the laboratory:

1. Complete a "Request for Pharmaceutical Waste Disposal" form and fax to [COORDINATING DEPARTMENT at CONTACT NUMBER], or email to: [COORDINATING DEPARTMENT'S EMAIL ADDRESS]
2. A copy of the College purchase order used to purchase the pharmaceutical material should accompany all requests for disposal.
3. Call [COORDINATING DEPARTMENT at CONTACT NUMBER] to schedule a pick-up.

PHARMACEUTICAL WASTE
(DEA/RI Controlled Substances Only)

Building: Jones Room: 123
Responsible Party: Jane Smith Phone: 4111
Description & Full Name of Pharmaceuticals:
MERCK Phenobarbital, Sodium
6oz.

Purchase Order Number: R12999
Copy Attached: Yes No
CSA Schedule Number: (Circle Correct Number)
I II III **IV** V

Remarks:

University of Rhode Island
Kingston, RI

NOTE: Samples exhibiting hazardous waste characteristics (ignitable, corrosive, toxic, or reactive) must be collected separately as hazardous waste.

Sharps

SHARPS: waste items that can easily cut or puncture the skin, such as needles, syringes, scalpels, broken vials and laboratory slides.

Example:

Segregate sharps by contamination type (biological, hazardous, radioactive). Unused sharps will always be considered biological. If unsure of the contamination type, contact [INSERT THE COORDINATING DEPARTMENT].



If sharps are considered *biological* only:

1. Place sharps in red OSHA-approved sharps containers (shown), provided by the [Scientist-in-Charge].
2. Place a biohazard label and the College's ID label on the sharps container. Labels provided by [COORDINATING DEPARTMENT].
3. Place the sharps container in the lined biological waste container.

If sharps are considered *hazardous and biological*:

1. Place sharps in red OSHA-approved sharps containers (shown), provided by the [Scientist-in-Charge].
2. Place a biohazard label and the College's ID label on the sharps container. Labels provided by [INSERT COORDINATING DEPARTMENT].
3. Place a "Hazardous Waste" label on the sharps container next to the biohazard and College ID labels.
4. Consult with [INSERT COORDINATING DEPARTMENT] for disposal procedures.

If sharps are considered *radioactive or mixed radioactive* (i.e. radioactive and hazardous/biological):

- Call the [Radiation Safety Office at CONTACT NUMBER].

Non-biological, non-hazardous broken laboratory glassware

(i.e. broken glassware, such as bottles, flasks, pipettes, and vials, that do not meet the criteria for hazardous, biological, or radioactive waste):

Example:

1. Place in a box and securely seal the box.
2. Label the box "broken glassware."
3. Place the box in the regular trash.

Laboratory glassware must never be discarded in the aluminum or glass recycling bins.

Put pipettes in non-recyclable glass box.

Chemical Spill Emergency Response

The following steps should be taken in the event of a chemical spill:

Evacuate:

- Alert others in the area and direct / assist them in leaving.
- Without endangering yourself: Remove injured to fresh air, remove contaminated clothing and flush contaminated skin and eyes with water for 15 minutes. If anyone has been injured or exposed to toxic chemicals or vapors, call [EMERGENCY PHONE NUMBER] and seek medical attention immediately.
- Leave the spill area.

Confine:

- Close all doors and isolate the area.
- Prevent people from entering the spill area.

Report:

- From a safe place, call [EMERGENCY PHONE NUMBER].
- Report the emergency and give:
 - ✓ Your name, location and phone number
 - ✓ Location of the spill
 - ✓ The name and amount of the material spilled
 - ✓ The extent of the injuries
 - ✓ The safest route to the spill
- Stay by that phone.
- Emergency services will respond to stabilize spills or clean up and provide medical attention.



Secure:

- Until emergency response personnel arrive; block off the areas leading to the spill.
- Post personnel near commonly-used entrances to the area to direct people to use other routes.
- Notify supervisor.

Emergency Response
Call [INSERT EMERGENCY PHONE NUMBER]

Laboratory Pollution Prevention

Pollution: discharge of harmful substances to environmental media (air, soil, or water) resulting in concentrations that interfere or change the natural processes.

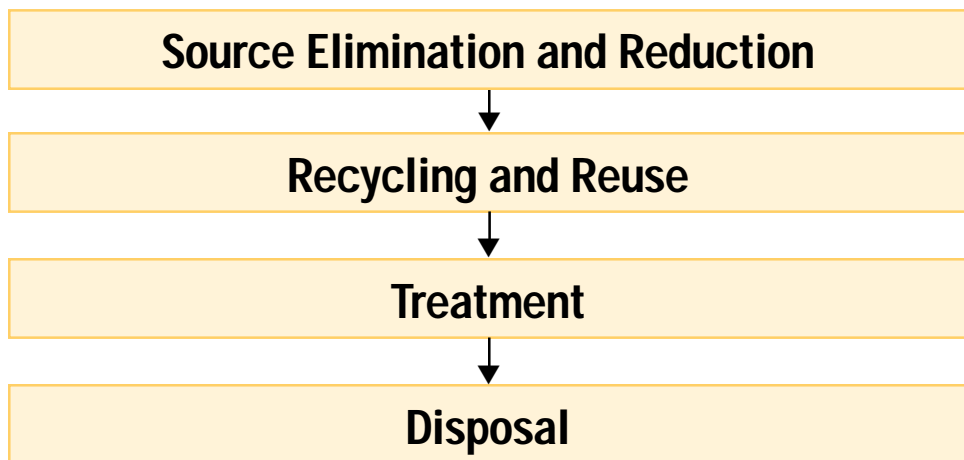


Pollution Prevention:

the reduction or elimination of pollution at the source when raw materials, waste energy, and other resources are efficiently utilized, when less harmful substances are substituted for hazardous ones, and when toxic substances are eliminated.

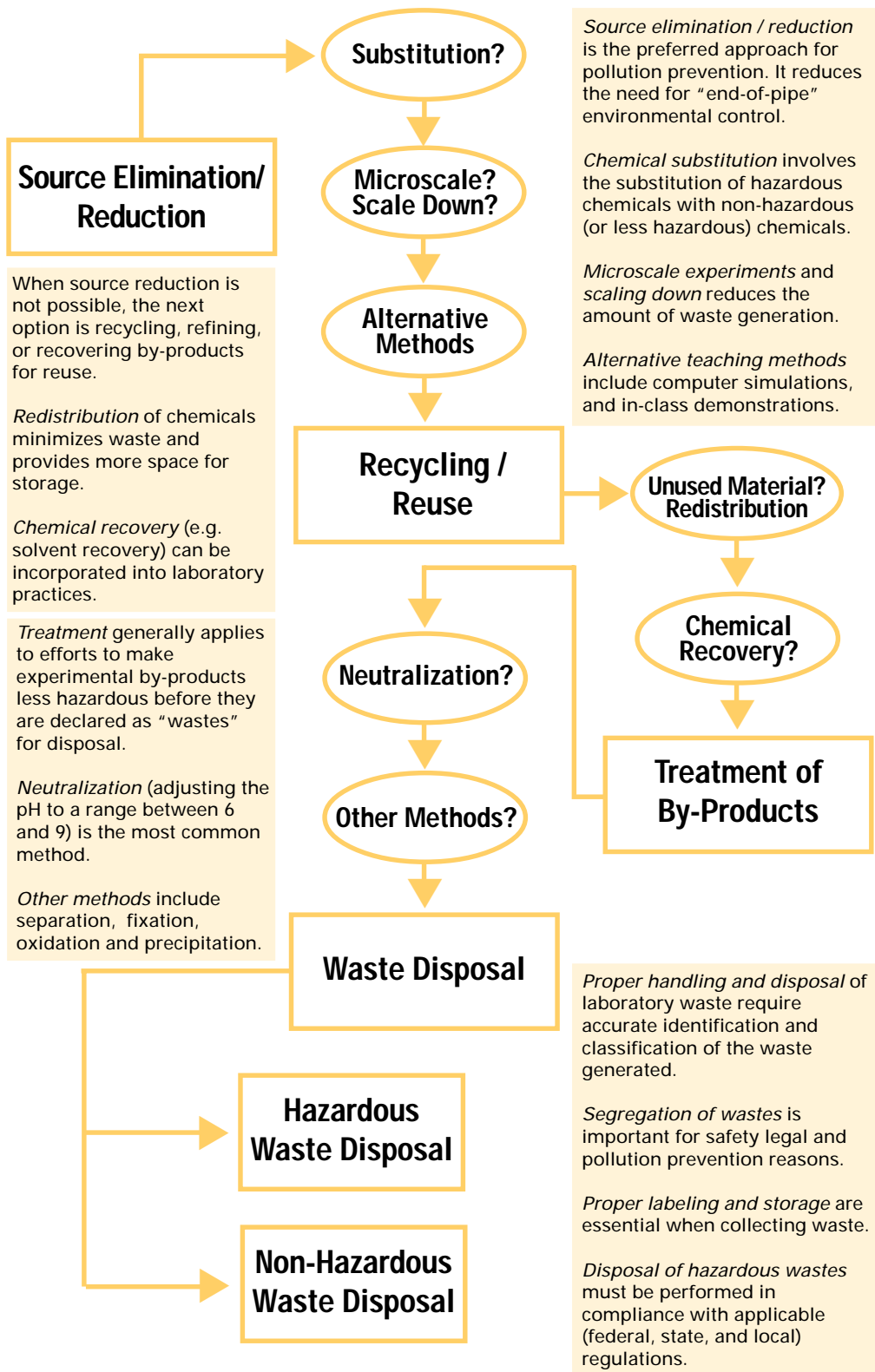
College laboratories often generate large quantities of wastes through instructional and research activities. Pollution prevention practices can reduce overall operational and environmental compliance costs while reducing student and researcher exposure to hazardous materials.

This College is committed to pollution prevention using the EPA's hierarchy of preferred options as summarized in the following flow chart:



Laboratory Pollution Prevention

The following diagram presents a methodology for development of pollution prevention alternatives. For more information of Pollution Prevention, please contact [COORDINATING DEPARTMENT].



Training

Environmental training is conducted on several levels. Please review the matrix below to ensure that you attend the appropriate class. Your diligence in completing these courses is necessary in order to make this program successful. Brief descriptions of each class are presented below.

Example: [INSERT YOUR COLLEGE'S TRAINING PROCEDURES & TRAINING MATRIX]

Roles	Class Number			Key:
	1	2	3	
[Department Chairpersons]	✓	✓		<i>Class 1 - Environmental Awareness/ Initial Waste Management</i>
[Scientist-in-Charge]	✓	✓		<i>Class 2 - Annual Waste Management Refresher</i>
[Laboratory Workers]	✓	✓		
[Students]			✓	<i>Class 3 - Waste Management for Students</i>
[Facility Personnel]	✓	✓		

Class 1 - Environmental Awareness / Initial Waste Management

This class provides basic environmental awareness training, which outlines procedures and responsibilities, and the importance of proper waste handling. Topics include labeling, containment methods, hazard recognition, waste collection, and emergency response. This class is mandatory for College Staff who could potentially handle laboratory waste and must be completed within 30 days of working in a laboratory where chemical or biological waste could be generated.

Class 2 - Annual Waste Management Refresher

All College Staff who potentially handle laboratory chemical or biological waste must attend annual training to refresh the material learned in Class 1.

Class 3 - Waste Management for Students

This class, which is similar to Class 1, provides basic environmental awareness training, outlining academic laboratory procedures and responsibilities, and the importance of proper waste handling. Instructors will teach this class at the beginning of each laboratory course where chemical or biological waste will be generated. Instructors will also provide this training to students that enter the class mid-semester.

What You Must Do To Comply

Below are the minimum steps you need to take in order to comply with federal and state regulations regarding waste handling and spill emergencies:

The Top 10 Guidelines for Environmental Responsibility

1. Attend environmental training.
2. Properly label waste containers.
3. Keep waste in compatible containers.
4. Segregate incompatible waste.
5. Use secondary containment for liquid waste.
6. Keep waste containers closed at all times.
7. Do not dispose of hazardous waste by evaporation, sewer or trash.
8. Notify **[INSERT EMERGENCY PHONE NUMBER]** in the event of a chemical spill.
9. Use pollution prevention techniques. (Reduce, Reuse, Recycle).
10. If you have questions call **[THE COORDINATING DEPARTMENT]**.

Preventing Regulatory Violations

Federal and state agencies regularly visit Colleges & Universities to perform unannounced inspections. Following is a list of commonly-cited violations that the agencies find in research facilities:



- Improper labeling
- Incompatible wastes/chemicals stored together
- Waste incompatible with container
- Containers not closed
- Improperly contained waste
- Chemicals improperly disposed of
- Improperly trained personnel
- Laboratory personnel unaware of proper emergency procedures

Please review this information carefully and correct any problems in your area immediately. Violations can not only result in fines, but adversely affect the College's public image, as well as your own reputation.

[The Coordinating Department's] personnel will conduct regular laboratory inspections to monitor compliance. The **[Scientist-in-Charge]** will be notified of any deficiencies and will receive a copy of the inspection report.

Internet Resources

[INSERT YOUR COLLEGE WEB ADDRESS/REFERENCE]

Example:

University of Rhode Island

URI Department of Safety & Risk Management

<http://www.uri.edu/safety/>

URI Radiation Safety Office

<http://www.uri.edu/research/rsol/>

Regulatory Agencies

Rhode Island Department of Environmental Management

<http://www.state.ri.us/dem/>

EPA Laws and Regulations

<http://www.epa.gov/epahome/rules.html>

National Institute for Occupational Safety and Health

<http://www.cdc.gov/niosh/homepage.html>

MSDSs/Chemical Information

International Chemical Safety Cards

<http://www.cdc.gov/niosh/ipcs/ipcsname.html>

MSDS Search

<http://www.msdssearch.com/>

*EPA Method for Determining the Compatibility of Chemical Mixtures -
Chemical Compatibility Chart*

<http://www.unl.edu/enviro/hazard/compchrt.htm>

Incompatibility of Common Laboratory Chemicals

<http://www.orcbs.msu.edu/chemical/agricultural/incompatible.html>

Laboratory Safety

Office of Laboratory Safety of the Howard Hughes Medical Institute

<http://www.hhmi.org/science/labsafe/>

Links to Safety Sites on the Internet

<http://www.hazard.com/links.html>

