
Environmental Compliance Handbook for Short Line Railroads

Environmental Protection Agency

Federal Railroad Administration

In cooperation with

The American Short Line Railroad Association

and

The Association of American Railroads



U.S. Department
of Transportation

**Federal Railroad
Administration**



U.S. Department
of Transportation

**Federal Railroad
Administration**

April 1996

Dear Colleagues:

We are pleased to have worked with so many short line and Class I railroads, the American Short Line Railroad Association and the Association of American Railroads to develop this Environmental Compliance Handbook. The handbook is a "plain-English" guide to short line environmental responsibilities and the laws that created them. The insights and comments of railroad industry experts have contributed to making it practical and useful for the railroad community.

It is, of course, a living document to which you will bring your own experience, but we hope it will serve you well as basic guidance for meeting environmental responsibilities.

With best wishes, .

A handwritten signature in cursive script, reading "Jolene M. Molitoris".

Jolene M Molitoris, Federal Railroad Administrator

A handwritten signature in cursive script, reading "David M. Gardiner".

David M Gardiner, Assistant Administrator,
Environmental Protection Agency

PREFACE AND ACKNOWLEDGMENTS

PREFACE

As part of its mandate to clarify and communicate environmental regulatory responsibilities to the freight and rail industry, the Environmental Protection Agency's Freight, Economy, and the Environment Work Group has worked with the Federal Railroad Administration (FRA) to prepare a handbook on Environmental Protection Agency (EPA) regulations applicable to short line railroads. The EPA Transportation and Energy Branch in the Office of Policy, Planning, and Evaluation and the FRA Office of Policy and Program Development are the lead offices responsible for developing the handbook. The EPA Work Assignment Manager for this project was Will Schroeder. The FRA Work Assignment Manager was Marilyn (Mickey) Klein. Abt Associates Inc. supported the development of the compliance handbook.

ACKNOWLEDGMENTS

The Environmental Compliance Handbook for Short Line Railroads would not have been possible without the help and assistance of the American Short Line Railroad Association and the Association of American Railroads. These railroad trade associations were instrumental in establishing the cooperative efforts between industry, FRA, and EPA.

The following railroads provided crucial compliance information and documentation from their own environmental compliance programs:

- CSX Transportation
- Norfolk Southern Corporation
- Union Pacific Railroad

These short line railroads provided specific compliance examples and important feedback on document content:

- | | |
|---|---|
| • Bessemer and Lake Erie Railroad Company | • OMNITRAX, Inc. |
| • Duluth, Missabe, and Iron Range Railway Company | • Providence and Worcester Railroad Company |
| • The Indiana Railroad Company | • Sandersville Railroad |
| • Kiamichi Railroad | • Wheeling and Lake Erie Railway |
| • LTV Steel Railroad | • Wisconsin Central Railroad |
| • McCloud Railway | |
| • Mid-Michigan Railroad | |

Land Issues: Buying and Leasing Property.....	47
Painting/Paint Blasting	48
Trackside Lubricators.....	49
Transformers and Other Electrical Equipment Containing Insulating Fluids: PCBs.....	50
Underground Storage Tanks.....	53
Wastewater Treatment Systems and Oil-Water Separators.....	57
Yard Maintenance/Dust Control.....	58
Transportation Operations.....	59
Fueling.....	59
Hazardous Material Transport: Normal Operations.....	61
Locomotive Oil and Coolant Releases	62
Locomotive Stack Emissions.....	63
Spills/Leakage During Transport	64
CHAPTER III: GUIDE TO FEDERAL ENVIRONMENTAL LAWS	67
Major Environmental Laws Applicable to the Short Line Railroad Industry	67
The Resource Conservation and Recovery Act	69
The Clean Water Act.....	81
The Clean Air Act	87
The Toxic Substances Control Act	91
The Comprehensive Environmental Response, Compensation, and Liability Act	93
The Emergency Planning and Community Right-to-Know Act.....	95
The Federal Insecticide, Fungicide, and Rodenticide Act	97
Noise Control Act	98
Other Regulations Potentially Affecting Railroad Operations	100
GLOSSARY OF TERMS	103
APPENDIX A: TELEPHONE CONTACTS	115
APPENDIX B: MATERIAL DISPOSAL DISCUSSION.....	139

TABLE OF CONTENTS

PREFACE AND ACKNOWLEDGMENTS

CHAPTER I: THE HANDBOOK; WHAT IT IS, WHAT IT DOES..... 1

Why an Environmental Compliance Handbook for Short Line Railroads?	1
How to Use the Handbook	1
Test Drive the Handbook	1
What is an Environmental Law?	2
How do Environmental Laws Affect Short Line Operations?	2
What Are the Differences Between Class I and Short Line Environmental Compliance Concerns?	3

CHAPTER II: ENVIRONMENTAL COMPLIANCE ISSUES FACING SHORT LINE RAILROADS: A LISTING BY RAILROAD OPERATIONS..... 5

Mechanical Operations.....	7
Brake Repair	8
Cleaning Operations: Large Scale Equipment Cleaning	9
Cleaning Operations: Small Scale Cleaning Operations	12
Hydraulic System Repair	14
Locomotive and Motor Vehicle Coolant Disposal... ..	15
Metal Machining/Metal Scrap	17
Oil Filter Replacement and Used Oil Disposal	18
Painting/Metal Finishing	21
Paint Stripping/Shot Blasting	24
Spent Battery Storage and Disposal	26
Spills/Leaks: Hazardous Substances	29
Spills/Leaks: Oil and Petroleum Substances	31
Engineering Operations.....	33
Above-Ground Storage Tanks	34
Air Conditioner/Refrigerator Service and Disposal CFCs (Chlorofluorocarbons)	37
Ballast Replacement, Storage, Disposal	38
Building Renovation/Demolition: Asbestos Concerns	39
Construction and Facility Maintenance	41
Crosstie Replacement and Disposal	42
Facility Power Generation/Incineration	44
Herbicide Use- Maintenance of Way	45
Landfills/Dumps	46

CHAPTER I: THE HANDBOOK; WHAT IT IS, WHAT IT DOES

WHY AN ENVIRONMENTAL COMPLIANCE HANDBOOK FOR SHORT LINE RAILROADS?

Short line railroad operations are governed by a variety of laws passed by the federal government to regulate the impact of human activities on the environment. Non-compliance with these regulations can result in damage to the environment and potentially significant financial liabilities for clean-up costs or fines. Unfortunately, environmental regulations and laws can be extremely confusing. In addition, sources of information on environmental compliance may seem difficult to find. Environmental compliance may be especially difficult for short line railroads which do not have the time or the staff necessary to determine their responsibilities. The U.S. Environmental Protection Agency and the Federal Railroad Administration, in cooperation with the American Short Line Railroad Association, the Association of American Railroads, and volunteer short line railroads all over the nation, developed this handbook to address those issues. This handbook is a "plain-English" guide to short line railroad environmental responsibilities and the laws that created them. For further information, the handbook provides state and federal agency contacts and Hotlines.

How to Use the Handbook

This handbook is intended to provide you, the short line railroad operator, with a good background knowledge of the environmental requirements of your specific operations: *It is not the final word on compliance responsibilities at your railroad.* The regulations discussed in this handbook are federal law. Your state may have its own, much stricter, requirements. State regulations are usually based on federal law, however, so the requirements discussed here should provide a good framework for understanding your responsibilities.

There are two ways to determine your environmental compliance requirements from this handbook: by operation or by law. Chapter II contains major short line railroad operations and their environmental compliance requirements. Chapter III discusses environmental laws, their histories, and their implications for railroad operations.

An understanding of both sections is important to determine your railroad's compliance requirements. The most important information in the handbook, however, is in Appendix A, the telephone contact section. As mentioned above, the requirements of your state may differ significantly from those in this handbook. It is up to you to determine the details of your state and local requirements by calling the agencies in your area. By consulting the handbook first you will gain a better understanding of where and why your attention is needed.

Test Drive the Handbook

Look up an operation in Chapter II and read about some of your potential compliance responsibilities. Have questions about the laws behind those requirements? Read relevant

sections in Chapter III, an overview of environmental laws affecting railroad operations. Consult Appendix A to get the phone numbers of federal and state contacts in your area that can help you determine your specific responsibilities. As you find state and local environmental agency representatives to help you understand compliance requirements, enter their names and phone numbers in the blank telephone contact section at the end of Appendix A for future reference.

Read on to learn more about environmental compliance at your railroad.

WHAT IS AN ENVIRONMENTAL LAW?

A good first step in understanding your environmental compliance responsibilities is to understand how the regulations themselves were created.

- The process begins when Congress passes a law to address an environmental problem, such as the Clean Water Act (CWA) to address water pollution. In the text of the law, or statute as it is sometimes called, Congress will spell out in as much detail as it can the particulars of how it wants to correct the problem. In the CWA, for example, Congress decided what types of water pollution it wanted to regulate, why, and how it wanted to regulate them.
- After the law is passed it is turned over to a governmental agency, such as the EPA, to develop the specific regulations that will require compliance. As directed by Congress, the regulatory agency then “fills in the blanks” in the law with regulations and requirements.
- To continue the water example, the EPA was directed by Congress in the CWA to develop “effluent limitations” for particular water pollution generators. In this request, Congress told EPA the kinds of pollutants to regulate and how, but left it up to the agency to develop the actual standards.
- After developing these standards, the governmental agency is then responsible for enforcing the regulations. Examples of these agencies are the Environmental Protection Agency (EPA), the Department of Transportation (DOT), and the Occupational Safety and Health Administration (OSHA). Regulations developed by an agency have the binding force of law.

How do Environmental Laws Affect Short Line Operations?

Short line railroad operations may typically require compliance activities under *all* major environmental statutes: Clean Air Act (CAA), Clean Water Act (CWA), Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response and Liability Act (CERCLA), Toxic Substances Control Act (TSCA), Emergency Planning and Community Right-to-Know Act (EPCRA), Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and the Noise Control Act. Of these statutes, however, **RCRA**, which governs the proper disposal and management of hazardous and fuel wastes, and the **CWA**, which sets

controls for the release of process wastewaters such as locomotive cleaning wash waters into local waterways and sewer systems are the most important compliance concerns for short line railroads.

These statutes are important compliance concerns because of the potentially wide variety of hazardous substances used by railroads and high volumes of fuel transferred and stored at railroad sites. Some refueling stations deliver fuel at the rate of four gallons per second; a small oversight or malfunction can result in a sizable material spill. Although spilled fuel is not usually considered a “hazardous” waste, subject to strict requirements under RCRA, it is a “special” waste and must be disposed of properly. In addition, under the CWA, spill containment procedures and plans (called SPCC plans) must be filed if oil or petroleum products are stored on-site in certain quantities.

A variety of hazardous substances are used and wastes generated in normal rail yard activities, from spent cleaning solvents to signal batteries. Many spent signal batteries are classified as hazardous wastes under RCRA. In some cases, this will result in limits on the amount of time that used hazardous signal batteries may be stored at your facility, as well as a host of other reporting and manifesting requirements. Proper hazardous materials management practices are a necessity to avoid costly environmental compliance problems now and in the future.

WHAT ARE THE DIFFERENCES BETWEEN CLASS I AND SHORT LINE ENVIRONMENTAL COMPLIANCE CONCERNS?

The same environmental regulations apply to short line railroads as apply to Class I railroads, but the compliance requirements differ because of differences in size and typical operations:

- RCRA, for example, establishes a set of compliance categories based on the quantities of RCRA wastes generated at a facility. Under RCRA requirements, short line operations may qualify for *conditionally exempt small quantity generator* status and thus face different compliance requirements than Class I railroads, which typically qualify as *large quantity generators*.
- Operational differences also exist between short lines and Class I railroads. Short line railroads are much less likely than larger Class I railroads to have large on-site painting and paint stripping facilities. These processes typically require permits for air emissions and disposal of paint-related wastes.

As a result of these differing environmental compliance profiles, this handbook focuses on those priority environmental compliance issues that apply *specifically* to short line railroads. By focusing on priority issues, the handbook is compact in size; however, it may lack information on some operations for which compliance is required. If you have a concern about environmental compliance responsibilities at your facility, call the Hotline and contact numbers contained in Appendix A. *In matters of environmental compliance, it is always better to be sure of compliance status. Non-compliance can result in dangerous situations for employees, harmful releases to the environment, and potentially large fines or clean-up costs.*

NOTES

CHAPTER II: ENVIRONMENTAL COMPLIANCE ISSUES FACING SHORT LINE RAILROADS, A LISTING BY RAILROAD OPERATIONS

This chapter presents various short line railroad operations and their associated federal environmental compliance requirements. If you are familiar with the operations of your railroad, this chapter should help you determine what some of your responsibilities are under environmental law. Chapter III contains background information on the environmental laws that create the compliance responsibilities below. Consult Chapter III and the Glossary for clarification on the terminology and legal basis of these environmental regulations.

This chapter is divided into three sections, by railroad operation:

<i>Operation</i>	<i>Definition</i>	<i>Some Activities Related to Environmental Regulations</i>
<i>Mechanical</i>	Activities related to the maintenance and storage of locomotives, track repair equipment, or cars.	<ul style="list-style-type: none">• Oil filter replacement and used oil disposal• Service fueling• Railcar cleaning (wastewater treatment)
<i>Engineering</i>	Any work done to maintain fully operational railroad track and facilities.	<ul style="list-style-type: none">• Rail lubricator maintenance• Crosstie repair or replacement
<i>Transportation</i>	All activities associated with the movement of locomotives and trains over a section of track	<ul style="list-style-type: none">• Noise generation• Spill preparedness

Within each general operations category (e.g., Mechanical Operations), the discussion of environmental regulatory requirements is split into specific operations (e.g., Large Scale Equipment Cleaning). An example of this discussion format follows:

Example Section
General Operations Category at top of page (e.g., Mechanical Operations)
<u>Specific operation (e.g., Large Scale Equipment Cleaning)</u>
Major compliance issues: This section describes the environmental issues associated with the activity and identifies the environmental law(s) that apply to the activity.
What to do: This section overviews the compliance requirements associated with the activity.
Pollution prevention idea: The concept of pollution prevention involves changes in normal operations to reduce pollution production, such as process product substitution, waste minimization, or process change. Pollution prevention ideas are presented if available.
Case example: If available, the compliance experiences of a short line railroad on this issue.
For more information: If appropriate, other sections in handbook and other publications where additional information is available on the topics relevant to this operation.

This report discusses only federal environmental laws and their related regulations. However, many state and local governments have been given the authority to put their own environmental programs in place if these programs are *at least as strict* as the federal ones discussed below. Even where federal regulations apply, individual states may impose additional requirements for environmental compliance. As a result, the type and difficulty of environmental requirements will differ from state to state. Since state standards may be considerably more restrictive, the compliance requirements discussed below should be considered as a *baseline*, the lowest potential level of activity required for compliance with environmental laws. *You can determine the compliance requirements particular to your state by contacting your state's environmental officials listed in Appendix A.*

MECHANICAL OPERATIONS

Mechanical operations are those activities related to the maintenance and storage of locomotives, track repair equipment, or cars. The following mechanical operations subject to environmental regulations are discussed in this section:

- Brake Repair
- Cleaning Operations Large Scale Equipment Cleaning (including locomotive washing)
- Cleaning Operations: Small Scale Cleaning Operations
- Hydraulic System Repair
- Locomotive and Motor Vehicle Coolant Disposal
- Metal Machining/Metal Scrap
- Oil Filter Replacement and Used Oil Disposal
- Painting/Metal Finishing
- Paint Stripping/Shot Blasting
- Spent Battery Storage and Disposal
- Spills/Leaks: Hazardous Substances
- Spills/Leaks: Oil and Petroleum Substances

MECHANICAL

Brake Repair

Major compliance issue: Regulated waste generation

Brake repair is not a significant environmental hazard, but discarded brake shoes may be regulated under the Resource Conservation and Recovery Act in some states. Some older brake shoes contain asbestos and may require special disposal.

What to do:

Check with your local hazardous material official to see if your state regulates used brake pads as hazardous or special wastes under the Resource Conservation and Recovery Act. Local environmental officials are listed in Appendix A.

✓ *Case Example:* At one facility, used brakes were placed in a labeled drum before shipment to a local landfill. Another railroad returns used brake shoes to the supplier for handling as scrap.

For more information:

See Chapter III: The Resource Conservation and Recovery Act

Cleaning Operations: Large Scale Equipment Cleaning

Major compliance issues: Wastewater generation, Stormwater runoff, Regulated waste generation

Wastes generated from large-scale equipment cleaning, such as locomotive, track equipment, or axle cleaning operations, must be handled properly to avoid harming the environment and to comply with federal environmental regulations:

- Any sludges created as a result of the process should be characterized and, if appropriate, checked for compliance with hazardous waste regulations before disposal.
- Wastewaters from locomotive cleaning can contain elevated levels of oil, grease, suspended solids (a measure of particulate matter in water), and pH (acidity or alkalinity of water). These substances are regulated water pollutants, so wash waters must be processed in a way that is consistent with Clean Water Act requirements. In most cases, the state has authority for enforcement of Clean Water Act provisions and permit administration.
- Treatment of wash waters may be required before release to a local sewer system or an outfall regulated by a National Pollutant Discharge Elimination System (NPDES) permit (See Engineering: Wastewater treatment systems and Oil-Water Separators).
- If cleaning operations are conducted outdoors, there may be Clean Water Act requirements to prevent the runoff of stormwater containing cleaning solutions and removed substances into local water systems.
- The type of cleaning solution used is also an environmental concern. If mineral spirits or other chemicals are used to clean equipment, a variety of environmental compliance issues may result. Mineral spirits are hazardous substances that have environmental compliance requirements for storage, handling and disposal.

Regulations are currently under development for the Transportation Equipment Cleaning Industry. These regulations, when effective, will impact railroads that clean the interior of tank cars, hopper cars, and box cars, and produce a wastewater as a result. If a tank car has carried hazardous materials, its car cleaning wastewaters may require characterization and proper handling under the Resource Conservation and Recovery Act (RCRA) in addition to that for normal wastewaters due to contamination from leftover tank contents or "heel". If tank cars are cleaned on the premises, these requirements should be considered. *Note. Most short line railroad facilities will not be subject to this requirement, since tank cars are usually maintained by specialty cleaning companies or by the shipper/owner of the car.*

MECHANICAL

What to do:

Wastewater Generation

The Clean Water Act requires that dischargers obtain, and operate in compliance with, a NPDES permit in order to discharge effluents (wastewaters) directly to a receiving waterway (note: this definition includes any body of water or ditch). Short line (and other) railroad facilities are not currently regulated by specific industry guidelines under the Clean Water Act. Regulation of wastewater discharges at a facility will depend on the "Best Professional Judgment" (BPJ) of the state or federal permit writer upon facility inspection. If your facility discharges wastewaters to a sewer system, your local or regional sewer authority should be contacted for information on any requirements.

-
- If you are discharging wastewaters:**
- ✓ Arrangements should be made for a facility inspection if wastewaters are being generated and discharged to a waterway without a permit.
 - ✓ If wastewaters are routed to a local sewer system, the local or regional sewer authority should be contacted for information on any requirements.
-

Stormwater Runoff:

EPA recently identified rainwater runoff (referred to as stormwater runoff) as a significant source of pollutant transfer from facilities to water bodies. Stormwater runoff from industrial facilities generally requires a permit. If facility stormwater drains and plumbing bypass facility wastewater treatment systems or sewer lines, stormwater can transport hazardous materials from facility grounds directly into the environment. Local environmental officials should be contacted for information on compliance with the stormwater runoff provisions of the Clean Water Act. (A list of contacts can be found in Appendix A) A Stormwater Pollution Prevention Plan (SWPPP) may be required.

Regulated waste generation:

If hazardous cleaning agents (e.g., solvents) are used, care should be taken to wear protective safety gear and follow good housekeeping practices (e.g., clear labeling of all chemicals and wastes to avoid misuse and potential injury or contamination). Good housekeeping practices have been shown to improve shop safety significantly and decrease the chances of accidental spills or releases. Generally speaking, wastes may be *hazardous wastes* if they are toxic, corrosive, ignitable, explosive, or chemically reactive (consult cleaning agent Material Safety Data Sheet (MSDSs) and contact local environmental officials to determine if a cleaning agent qualifies as "hazardous" under local laws).

Hazardous cleaning materials and wastes could be regulated under the Resource Conservation and Recovery Act (RCRA), the Clean Water Act (CWA) and may also have Clean Air Act (CAA) requirements.

Pollution prevention ideas:

Water usage reduction

Waste minimization in equipment cleaning may be achieved by reducing the amount of water used to clean large equipment. A reduction in water usage will translate into a reduction in the volumes of generated wastewaters.

Solvent usage reduction

Axle protective coatings can be removed with 140 solvent or a similar non-hazardous or aqueous solvent to avoid hazardous waste generation procedures. The use of hazardous cleaning compounds in outdoor large equipment cleaning can also be avoided by using a detergent/water mixture or steam. In these processes, wastewaters must be channeled properly for treatment or disposal.

For more information:

See Chapter III: Clean Water Act

See Chapter III: The Resource Conservation and Recovery Act

See Chapter III: Clean Air Act

MECHANICAL

Cleaning Operations: Small Scale Cleaning Operations

Major compliance issues: Regulated waste generation, Wastewater treatment, Hazardous air pollutant generation

Small parts (e.g., engine parts) cleaning operations can be sources of water, air, and solid waste pollution, depending on the cleaning solutions used and the materials removed from the parts:

- Compliance problems may result if cleaning stations are drained to a sewer system not prepared to handle parts-cleaning wastes.
- The use of volatile solvents in small parts cleaning may require Clean Air Act permitting in some poor air quality regions.
- Hazardous solid wastes may be generated from residual solvents and sludges.

What to do:

If hazardous solvents are used at cleaning stations, care should be taken to wear protective safety gear and follow good housekeeping practices (e.g., clear labeling of all chemicals to avoid misuse and potential injury or contamination). Good housekeeping practices have been shown to improve shop safety significantly and decrease the chances of accidental spills or releases.

Wastewater generation:

If washing stations drain to local sewers or oil-water separator systems, any hazardous materials used or generated during parts washing that go down the drain may need to be permitted under the Clean Water Act. While most railroad wastewater treatment systems have been designed to remove oils (which are hazardous materials) from the wastewater, other hazardous materials, specifically solvents, may not be removed in the same process. Hazardous materials can hinder the ability of sewer systems to treat wastewaters. As a result, many Publicly Owned Treatment Works (POTWs) have put requirements, called pretreatment standards, in place. These standards govern the types and amounts of hazardous materials you are allowed to discharge to the sewers.

Regulated waste generation:

If hazardous cleaning solvents are used, special care must be taken with solvent storage and waste disposal. If oil or petroleum materials are removed from the parts, the waste created may have special disposal requirements in your state. *Even if your area does not regulate oil wastes as hazardous, a combination of oil waste and hazardous solvent waste must be treated as hazardous under RCRA law.* You can find out your state requirements by contacting your environmental representative listed in Appendix A.

Some facilities have self-contained, contractor-operated small parts washing systems that do not drain to a sewer. These systems may include a solvent dispenser, wash basin, and waste solvent collection system. Hazardous wastes generated by these commercial operations may be returned to the supplier, who redistills the cleaning fluid and sends the remaining hazardous waste for disposal. If a contractor has the responsibility for your hazardous waste disposal, it is important to know that the wastes are disposed of properly. The liability imposed by hazardous waste cleanup laws (called CERCLA, or more commonly known as Superfund) may hold you financially accountable for the improper disposal of your wastes, *even if it was done without your knowledge. Under these laws you may be financially liable for cleanup of any improperly disposed hazardous wastes.*

Pollution Prevention Idea: Solvent usage reduction

Switch from hazardous organic-based to non-hazardous aqueous-based solvents for small scale cleaning operations. This will reduce the amount of hazardous waste generated from your cleaning operation. Solvent recycling can also decrease your hazardous waste production from small parts cleaning.

For more information:

See Chapter III: Clean Water Act

See Chapter III: The Resource Conservation and Recovery Act

See Chapter III: Clean Air Act

See Chapter III: Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

MECHANICAL

Hydraulic System Repair

Major compliance issues: Regulated waste generation

Used hydraulic fluids are listed as used oils under the Resource Conservation and Recovery Act, or RCRA. The major compliance issues associated with hydraulic system repair involve handling of the hydraulic fluid, including:

- proper disposal
- spill containment
- storage

Environmental damage can occur from waste oil seepage into the soil, waste oil runoff into waterbodies during storms, and other contamination methods.

What to do:

These fluids should be handled as used oils because they are subject to the same requirements. *Hydraulic fluids should not be mixed with other, more hazardous wastes (e.g., solvents from parts cleaning) before disposal.* According to your particular state's regulations, however, it may be acceptable to dispose of lube and hydraulic oils in waste oil storage tanks. It is always important to clean up waste oil spills immediately. *Any releases or spills of oil into a body of water, regardless of the amount of oil or fuel involved, must be reported immediately to the National Response Center (NRC, 24 hour Hotline: 1-800-424-8802), if a sheen appears on the water surface. Sometimes the applicable state agency with jurisdiction, normally the water pollution control or emergency response agency also needs notification.*

For more information:

See Chapter III: Clean Water Act

See Mechanical: Oil Filter Replacement and Used Oil Disposal

See Mechanical Spills/Leaks: Oil and Petroleum Substances

Locomotive and Motor Vehicle Coolant Disposal**Major compliance issues: Regulated waste generation, Stormwater runoff**

Locomotive and motor vehicle coolants can contaminate both water and soil. Used coolant must be disposed of properly. Locomotive cooling systems do not contain automotive type ethylene glycol-based antifreeze. Because of this, locomotive cooling systems may need to be drained when engines are shut down during road operation in cold weather. Failure to do so can result in serious engine damage due to freezing of the coolant. To protect the cooling system from corrosion, locomotive coolants contain a dilute additive package, which is basically a mixture of sodium borate and sodium nitrate. The additive package usually contains a dye, to help identify leaks and insure the cooling system is protected. The compounds are diluted in the cooling system to approximately one to three percent. The concentrations of the individual corrosion inhibitors is a fraction of one percent.

What to do:**Regulated waste generation**

Locomotive coolants are nitrate-based corrosion inhibitor mixtures that may be disposed of in sewer systems. If your facility's wastewater is collected and routed to a local publicly owned treatment works (POTW), pretreatment arrangements with local sewer authorities will determine whether this is acceptable practice. If unsure of the pretreatment arrangements made by your facility, contact your local sewer authority pretreatment program before disposing of locomotive coolants in this manner. If your facility treats its wastewater onsite and discharges directly to a receiving waterway, check with the requirements of your discharge permit before disposing of coolant in the drain. Permit violations can result in costly fines.

Stormwater runoff/Locomotive Coolant

The following are some best management practices when dealing with locomotive cooling system discharges:

- 1) When possible, coolant should be discharged when the locomotive has stopped and is at a location where the coolant can be collected and managed. This will minimize the staining of soil or water that may be perceived as a more serious problem.
- 2) When possible, coolant should not be discharged from a locomotive that is crossing open water or traveling adjacent to open water. This will minimize the potential for aesthetic degradation of water.
- 3) Operators should be familiar with the spill reporting requirements of the states in which they operate, and act accordingly when a coolant discharge takes place. When coolant is discharged, operators should be prepared to inform the local and environmental officials and the public about the innocuous nature of the coolant.

MECHANICAL

Stormwater runoff/Maintenance and Fleet Vehicles

Coolants from maintenance and fleet vehicles should be collected and recycled. Since this type of coolant normally contains ethylene glycol, it must not be mixed with the locomotive coolant when recycling.

For more information:

See Engineering: Wastewater Treatment Systems and Oil-Water Separators

Metal Machining/Metal Scrap**Major compliance issues: Regulated waste generation, Stormwater runoff**

Metal machining and punching can generate regulated wastes that may contaminate the environment from direct release into water or from stormwater runoff. Pollutant-carrying stormwater runoff may violate the Clean Water Act. Coolants from metal multi-punch operations may be regulated substances under the Resource Conservation and Recovery Act (RCRA) or local waste regulations and may require special handling.

What to do:

Collect filings when machining metal parts and recycle if possible. As a Best Management Practice, any materials, such as metal scrap, that are generated from metal punching or other mechanical operations should be stored out of contact with rain or in areas where storm water runoff is controlled and managed. However, given the size, volume, and weight of metal materials present in railroad yards, such as rail and tie plates, it is often impractical to store such materials in covered areas.

Any water-based coolant from multi-punch presses may be disposed of as non-hazardous liquid waste, but should not be dumped into storm drains, drains that do not have wastewater treatment systems designed to handle and permitted for this type of wastewater, or soil.

Pollution prevention idea:

Metal scrap can be recycled if sorted and properly stored. Scrap materials generated from machine operations, and discarded metal such as bars or rails can be recycled. Labeled recycling containers can be placed around the shop for easy access and later sorting.

For more information:

See Chapter III: The Resource Conservation and Recovery Act

Oil Filter Replacement and Used Oil Disposal

Major compliance issues: Regulated waste generation, Wastewater generation, Stormwater runoff

A variety of environmental issues need to be considered when performing any oil handling activities such as oil changes or oil filter replacement to locomotives, motor vehicles, maintenance equipment, and other motors. Oil releases to the environment from oil drippage can also occur during locomotive tie-up. If not properly handled, waste oils can harm the environment by:

- contaminating surface water, groundwater, and soil;
- creating worker health and safety concerns; and
- exposing your facility to punitive fines for violation of a variety of environmental statutes.

The control of oil and petroleum substances is required under a variety of federal environmental statutes. Many statutes cover issues relevant to the prevention of oil spills. For example, the Clean Water Act (CWA) requires spill prevention plans (Spill Prevention, Control, and Countermeasure plans, or SPCC plans) when oil is used or stored in large quantities (over 660 gallons in a single tank or an aggregate of 1,320 gallons in more than one tank) and management plans for stormwater runoff from oil storage areas. Used oils are *not* typically categorized as highly regulated hazardous wastes under the Resource Conservation and Recovery Act (RCRA), but *used oils have strict disposal requirements in some states*. See Chapter III for a more detailed discussion of CWA, RCRA, and other environmental regulations.

What to do:

Wastewater generation/Stormwater runoff:

As a general rule, use sufficient care during lubricating and oil change operations to prevent oil from entering the environment. Many facilities use absorbent materials (e.g., pigmat) to catch drips or spills during activities where oil drips might occur.

Oil filter replacement and used oil replacement are generally conducted indoors at locomotive maintenance facilities. Locomotive idling is conducted, to the extent practicable, over track pans, absorbent materials, or other collection devices. Some facilities have routed track pan drains to oil-water separation systems. *Do not allow used oil or oil drips to enter your drainage system unless an oil-water separation system is in place or specific arrangements have been made with the local sewer utility.*

If oil enters the environment, costly fines or cleanups may be required. One facility has installed oil catchment systems to its locomotives. Any oil drippage is contained in these tanks and then disposed of properly with other used oil at a facility capable of handling it.

Oil can be carried into the environment directly by stormwater into surrounding water or land, or indirectly through improperly connected storm drains that empty into surface water or land.

Regulated waste generation:

Used oil filters from locomotives, track equipment machinery, or other machines must be disposed of properly. Used filters can be recycled without processing on railroad property. If processing, the following disassembly procedures should be followed:

- ✓ First, the filter should be drained carefully, and the oil collected and disposed of properly. Filters may then be disabled by mangling, crushing, dismantling or puncturing the filter end. Drain the filter element in a collection system for 24 hours or as required to collect the remaining oil, if not already drained from crushing.
- ✓ Collected oil, now classified as *used oil*, may be stored for later resale, recycling, or disposal. Be sure to follow good housekeeping practices (e.g., clear labeling of all drums) and other "Used Oil" regulations under RCRA when storing used or contaminated oils.
- ✓ All drums or containers with used oil or oil filters exposed to stormwater should be labeled and have a lid or cover *at all times*, except when filters are being added to the drum or container. *Do not mix waste oils with other wastes*. If used oils are mixed with listed hazardous wastes then the mixture must be disposed of as a hazardous waste.
- ✓ Recycle used oil at an oil recycling facility whenever possible.

Overall, oil filter and used oil disposal requirements vary by state; contact local landfill or waste haulers for more information. California and Texas, for example, prohibit oil filters from landfills and classify them under the same regulations as oil. Other states may allow oil filter disposal through normal solid waste disposal means (e.g., recycling, dumpster). In some states, filter elements may require testing before disposal to determine if they must be treated as hazardous waste. Even if filters or used oil are picked up by a contracted waste hauler, it is important to know that they are disposed of properly. *Your company can be held liable for fines and cleanup costs of improperly disposed wastes, even if improperly disposed without your knowledge.*

MECHANICAL

Pollution Prevention Idea

One facility has established a reuse system for its waste oil: waste oil is transported to another facility where it is used for fuel. This method decreased disposal and heating costs while reducing landfill waste loads. Used oil burning of this nature has permitting implications that the facility needs to follow. Used oil burning can also occur in on-site space heaters under certain circumstances.

Recycling used oil by sending it to a commercial recycling facility also saves money and protects the environment. Equipment can be set up easily to collect oils dripping off parts. One example is a drip table, which collects dripping oil and channels it into a used oil collection bucket. Drip pans can be placed under cars that are leaking fluids onto the parking area. A publication, *How to Set Up A Local Program to Recycle Used Oil*, is available from the Superfund Hotline at 1-800-424-9346.

For more information:

See Mechanical: Spills/Leaks: Oil and Petroleum Substances

Managing Used Motor Oil, Environmental Regulations and Technology, EPA Document # EPA/625/R-94/010, December 1994.

Painting/Metal Finishing

Major compliance issues: Air releases, Regulated waste generation, Wastewater generation

Painting operations can be significant sources of environmental harm:

- Air pollution from the evaporation of chemicals contained in the paint (e.g., solvents) can contribute to smog and worker health and safety problems
- Solid and hazardous wastes from the painting process (e.g., paint-covered cloths) may contaminate water and soil if not disposed of properly.

Air pollution issues are typical concerns only for large-scale painting operations involving paint booths and associated air ducting. Large- and small-scale painting operations, such as aerosol can spray painting, generate potentially hazardous materials. Whether hazardous wastes are generated during painting depends upon the type of paint applied. Typically, latex paints and related paint wastes are classified as non-hazardous. Ignitable or solvent-based paint or paint thinner wastes are classified as hazardous. Used aerosol cans are classified as RCRA hazardous wastes until the aerosol propellant is fully discharged or the can is punctured by an approved puncturing device.

What to do:

Air releases:

Proper permits may be required for discharge of process air associated with certain large-scale painting operations under the Clean Air Act. In addition, paint and paint thinner wastes may require special disposal practices.

If spray painting outside, use tarps or cloths to prevent the paint mists from contaminating the air, water, and soil. If large-scale painting operations are to be conducted outdoors, contact local environmental officials to ensure compliance with applicable local air and water regulations. Special air treatment systems may be required to control your air emissions from large scale painting operations.

Wastewater generation:

Generally speaking, no paint or paint wastes should be allowed into your facility's drainage system, unless the system is designed and permitted to treat such wastes. *Even non-hazardous paints may cause your facility to violate its wastewater discharge permit or pretreatment agreements with the local wastewater treatment authority.*

Regulated waste generation:

Solvent-based (e.g., ignitable) and lead-based paint, paint containers, and paint wastes may require hazardous waste handling. Used aerosol cans are classified as RCRA hazardous wastes until the aerosol propellant is fully discharged or the can is punctured by an approved puncturing device (See Figure 1).

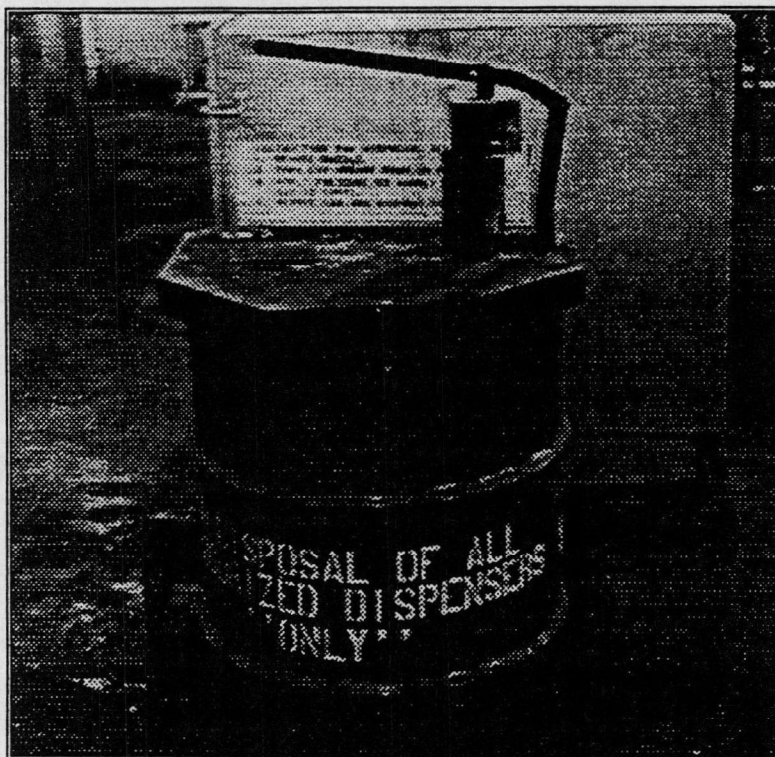


Figure 1: Aerosol Can Disposal Station

Note: Can puncturing device on top of drum

Paint wastes from latex painting operations may be disposed of as non-hazardous solid waste. Paint and paint containers can be recycled by paint manufacturers. Some paint suppliers will reclaim paint containers and residues for reuse. To reduce the amount of wastes created by your painting operation, all paint (including ignitable, solvent-based, and latex paints) should be used until containers are completely empty. "Empty" paint containers of latex paint may be disposed of as solid wastes. Used containers of hazardous substances may need to be disposed of as hazardous wastes, if they are not completely empty.

"Empty" containers are defined under RCRA as:

- having had all material removed by common practices (e.g., pouring, pumping, or aspirating),
- and
- having no more than one inch of residue remaining on the bottom of the container,

or

- having no more than 3 percent by weight/volume of the container's total capacity remains if the container is less than or equal to 110 gallons,

or

- having no more than 0.3 percent by weight of the container's total capacity remains if the container is greater than 110 gallons in size.

Pollution Prevention Idea: Waste minimization

Switch from hazardous organic-based to non-hazardous aqueous-based paints. This will reduce the amount of hazardous waste generated from your painting operation. Purchase paint in recyclable and/or returnable containers to reduce disposal costs.

For more information:

See Chapter III: Clean Water Act

See Chapter III: The Resource Conservation and Recovery Act

See Chapter III: Clean Air Act

MECHANICAL

Paint Stripping/Shot Blasting

Major compliance Issues: Regulated waste generation, Air releases

Paint stripping via shot or grit blasting operations can be a source of hazardous waste solids and air pollutants, depending on the type of coating removed. The grit blast itself is a non-hazardous substance, but older paints may contain metals such as lead or chromium that would cause the resultant stripping waste to earn a hazardous waste designation. If hazardous solvents or other hazardous stripping materials are used to remove paint, the resultant paint sludges and cleaning wastes will also be hazardous substances and must be disposed of properly. In large grit blasting operations, the release of process air may require permitting under local air regulations.

What to do:

Regulated waste generation:

Paint, rust, grease, and oil are all removed by the shot blast material and must be disposed of properly. If lead-based paints are removed, the wastes must be handled as hazardous. If railcars are grit blasted, petroleum-containing wastes may result, which may require special handling in your state.

✓*Case Example:* In the waste at one facility, the proportion of shot blast grit to other waste products was high enough that the waste was not classified as hazardous. Testing was required, however, to determine the hazardous or non-hazardous status of the shot blast waste generated at the facility.

If unsure of the status of waste created by your shot blasting facility, contact a local environmental representative. Local environmental representatives are found in Appendix A.

Air releases:

The air containing shot blast and removed materials may require venting to a treatment system such as a baghouse. This system removes particulate pollutants from shot blast process waste air before allowing it to vent to outdoor air.

Other:

Various worker protection requirements apply to shot blasting operations. For example, employees must wear protective clothing and NIOSH-approved respirators when conducting shot blasting operations.

If conducting shot blasting or paint removal operations outdoors, proper measures should be taken to prevent waste material contamination of air, water, and soil. If bridges or other

structures are blasted, it is recommended that barriers be constructed around blasting operations to avoid dust contamination of the surrounding environment. Contact local environmental officials (contacts may be found in Appendix A) and local regulations to ensure compliance with applicable local air and water regulations

For more information:

See Chapter III: The Resource Conservation and Recovery Act

See Chapter III: Clean Air Act

MECHANICAL

Spent Battery Storage and Disposal

Major compliance issues: Regulated waste generation

Used battery storage and disposal can be a significant environmental liability for short line railroads since many spent signal batteries are classified as hazardous wastes under the Resource Conservation and Recovery Act, or RCRA. RCRA hazardous wastes have very specific disposal requirements. As presented in the following table, various battery types used at your facility will require various environmental compliance requirements

Used Battery Disposal Requirements		
Battery Type	Common Usage	Disposal Requirements
<ul style="list-style-type: none">• Lead Acid	Locomotives, end of train	Lead acid batteries are not hazardous as long as they are recycled.
<ul style="list-style-type: none">• Nickel Cadmium• Nickel Iron• Carbonaire batteries• Lead acid	Communication and signal, track signal equipment, motor and/or shop utility vehicle batteries	Treat as Hazardous Wastes, has special disposal requirements. Some recycle options are available. Recycling lead acid batteries avoids hazardous waste requirements.
<ul style="list-style-type: none">• Single-use disposable• Carbon/zinc batteries (with and without mercury)	Lantern batteries	Non-hazardous, return to retailer for recycle or dispose of as normal solid waste.

Improperly stored or disposed batteries can result in major fines or clean-up costs for spills of hazardous battery materials.

What to do:

Spent signal batteries may be hazardous wastes under RCRA. The amount of signal batteries generated at your facility affects the responsibilities your facility faces under RCRA law (See Chapter III: Guide to Federal Environmental Laws for more information). Spent lead acid batteries, including locomotive batteries, should be recycled to avoid their designation as hazardous wastes under RCRA. There may be recycling options available for batteries of other types (e.g., nickel cadmium); in general, recycling batteries may reduce the amount of hazardous waste stored at your facility and thus your responsibilities under RCRA.

Some examples of variable RCRA compliance requirements applicable to waste signal batteries include limitations on *storage time* of 90 or 180 days, and limitations on *amount* of batteries that can be stored on site, more or less than 13,230 pounds.

When storing used batteries some recommended best management practices are as follows:

- ✓ Palletize and label them by battery type (e.g., lead acid, nickel cadmium);
- ✓ Protect them from the weather with tarp, roof, or other means;
- ✓ Store them in an open rack or in a water tight secondary containment unit to prevent leaks. An example of secondary containment might be a water tight bin (See Figure 2);
- ✓ Inspect and document them for cracks and leaks as they come in to your storage program. If a battery is dropped, treat it as if it is cracked. Acid residue is hazardous because it is corrosive and may contain lead and other toxics;
- ✓ Avoid skin contact with leaking or damaged batteries; and
- ✓ Neutralize acid spills and dispose of the resulting waste as hazardous waste if it still exhibits a characteristic of a hazardous waste.

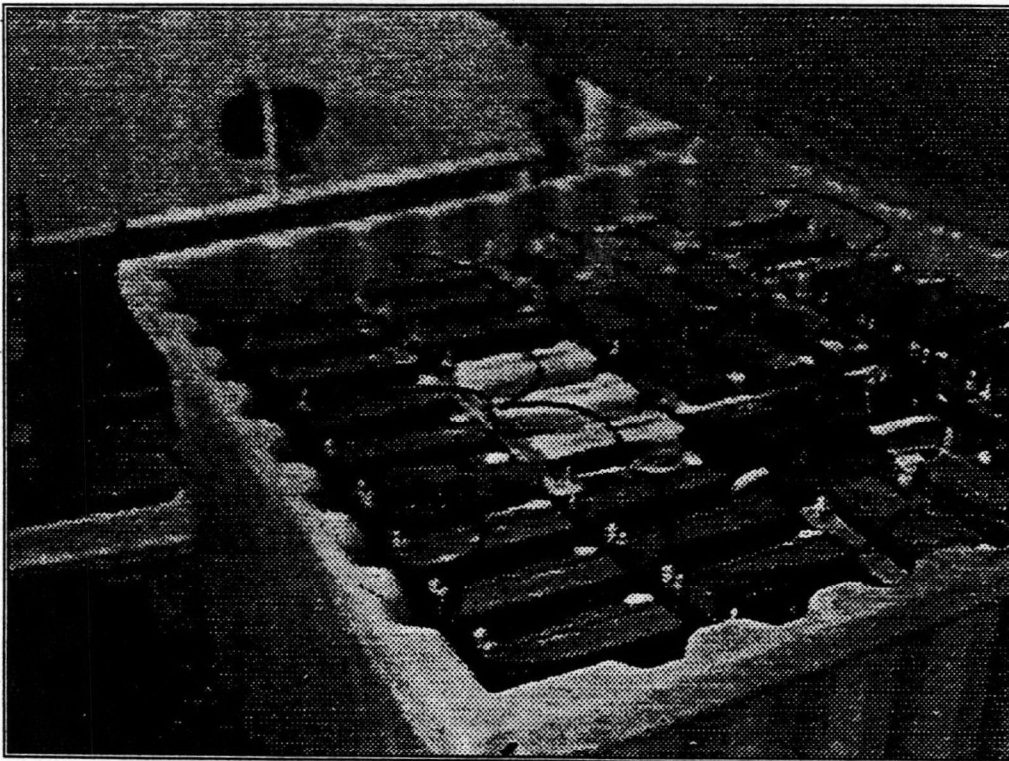


Figure 2: Properly Stored Batteries

Note: Hazardous Material Label is not visible from this angle

MECHANICAL

If possible, batteries should be recycled through your supplier and the shipping receipt kept on file. Recycling used batteries saves money, is good for the environment, and may significantly affect your compliance requirements. Many battery suppliers accept used lead acid batteries for recycle. Used lead acid batteries intended for recycle do not have to be manifested as hazardous wastes in some states. If no battery suppliers in your area accept used batteries or will not accept small loads, perhaps a friendly Class I railroad may allow the use of its battery recycling program

It is important to remember the storage limitations for hazardous wastes. If more than 220 pounds of signal batteries that are characterized as hazardous wastes are in storage for more than 180 days at your facility then you are in violation of RCRA law.

✓Case Example: There were various battery disposal options open to one facility: recycling through a local Class I, recycling through a supplier, or direct disposal. This facility determined that overall costs and environmental liabilities were lowest when batteries were recycled via a supplier. It may be necessary to explore a few recycling scenarios before finding one that is right for your facility.

For more information:

See Chapter III: The Resource Conservation and Recovery Act

See Appendix B: Material Storage and Disposal Overview

See *Recommended Instructions for Disposal and Recycling of Batteries*, Association of American Railroads Communications & Signal Manual Part 9.5.5, 50 F Street, NW, Washington, DC 20001, Phone: 202-639-2211, Fax: x2156.

Spills/Leaks: Hazardous Substances

Major compliance issues: Regulated waste generation, Clean-up liabilities

Spills of hazardous substances harm the environment, create safety problems, and may require costly cleanups. A variety of reporting and clean-up requirements are prescribed by environmental regulations under such laws as the Comprehensive Environmental Response Compensation, and Liability Act (CERCLA). *Understanding where hazardous waste releases are most likely to occur is an important step in their prevention.* If a spill does occur, an understanding of the correct strategies and the correct locations of information resources can minimize spill impacts on the environment as well as resulting company liabilities.

What to do:

The safety of you and your fellow employees should always come first. Contain and clean-up spills with absorbent materials as soon as it is safe to do so. Consult Material Safety Data Sheets (MSDSs) to determine the appropriate safety precautions when cleaning material spills. MSDS sheets accompany any hazardous materials or products. MSDSs contain emergency contact and safety information. Spills should be prevented from entering facility drain systems, where they may overload treatment facilities, cause costly water discharge permit violations, and harm the environment.

The volume of the spill will determine what reporting requirement to follow:

- The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) contains a list of approximately 700 hazardous substances. Each substance has a Reportable Quantity (RQ) value of either 1, 10, 100, 1,000 or 5,000 pounds. When a hazardous substance is released in amounts that are greater than or equal to its RQ, **the National Response Center (1-800-424-8802)** must be notified *within the 24-hour period following substance release.*
- National Response Center notification is required under the Resource Conservation and Recovery Act when hazardous wastes are released into the environment. *Hazardous substances that are not identified on the CERCLA list can be assumed to have an RQ of 100 pounds.* If the substance is spilled onto concrete and can be cleaned up immediately and recycled or repackaged for reuse, the spill need not be reported.
- Some spills are subject to reporting requirements of the Emergency Planning and Community Right-to-know Act (EPCRA). Many of the chemicals under EPCRA reporting requirements are also on the CERCLA list. *EPCRA requires immediate reporting to state and local response authorities and fire departments of covered releases.*

MECHANICAL

✓**Case Example:** Facilities have conducted semi-formal audits of the spill possibilities at their facilities. Spills can be avoided by determining those locations and situations where spill events are likely to take place and making employees aware of them. Some facilities have posted signs at likely spill locations or conducted training with their employees on spill awareness and preparedness. In addition, MSDS sheets can be centralized for easy access in case of a spill event. A folder or binder can be used for this purpose and should be maintained by a designated MSDS collection person

For more information:

See Chapter III: Comprehensive Environmental Response, Compensation and Liability Act

Emergency Handling of Hazardous Material in Surface Transportation, Association of American Railroads, Bureau of Explosives (BOE), 50 F Street, NW, Washington, DC 20001, 202-639-2222. This publication has emergency handling information for hazardous materials in case of an incident. The information includes environmental considerations.

Chemtrec is a good source of material safety data sheets in case of an emergency. Chemtrec is an operation of the Chemical Manufacturers Association (CMA). CMA can be reached at 1300 Wilson Boulevard, Arlington, VA 22209, Telephone # 703-741-5000. The emergency phone number for Chemtrec is 800-424-9300.

Spills/Leaks: Oil and Petroleum Substances

Major compliance issues: Regulated waste generation, Wastewater generation, Reporting requirements

The most common spills or leaks in the shop will be of oil or petroleum substances

<p>While good housekeeping practices should be implemented to prevent oil and other spills, if a spill occurs, clean it up <i>immediately</i>.</p>	<ul style="list-style-type: none"> ✓ Oil can soak into the soil very quickly, making it difficult to remove without digging up the contaminated area. ✓ If oil spills occur in an area where spills may be carried by rainwater, stormwater runoff may be a pollution source. ✓ Oil drips or spills in the shop may be carried into floor drains, potentially violating your wastewater discharge permits or pretreatment agreements with local wastewater treatment authorities.
---	--

What to do:

Absorbent materials (e.g., pigmat) can be used to catch drips or spills during activities where oil drips might occur. These materials should then be disposed of properly. *Do not allow used oil or oil drips to enter your drainage system, unless it is designed and permitted to handle it.* Close shut-off valves if the spill or leak will overload your water treatment facilities. Use portable inflatable berms to contain large spills until spill cleanup contractors can arrive. If these materials enter the environment, costly cleanups may be required. *Used oil is recyclable, so recycling is the preferred option.*

If available, employees should consult your facility's Spill Prevention Countermeasure and Control plan, or SPCC plan, in the event of a oil spill or leak. The SPCC plan contains detailed information on spill cleanup and remediation.

Oil and petroleum products are *not* classified as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the environmental law governing waste cleanup. However, various reporting requirements result if oil or petroleum substances are spilled above certain reporting thresholds — and, although classified as non-hazardous, spills of waste oils are *not* excluded from CERCLA reporting (See Mechanical: Spills/Leaks of Hazardous Substances)

Any releases or spills of oil into a body of water, regardless of the amount of oil or fuel involved, must be reported immediately to the National Response Center (NRC, 24 hour Hotline: 1-800-424-8802), if a sheen appears on the water surface. Most states (Virginia and North Carolina are examples) require reporting of oil spills onto land, but the reporting requirements depend upon the Reportable Quantity (RQ) for the state. Check with your local

MECHANICAL

hazardous material environmental official for your state and local requirements. Local environmental officials are listed in Appendix A.

✓*Case Example:* Many facilities keep pigmat or kitty litter-style absorbent materials close to oil drums or oil handling locations. If spills occur, they can be quickly contained. Other facilities have installed track pans under locomotive idle and storage areas to catch drips of oil, fuel, and coolant. An example of these catchment pans is pictured below in Figure 3.

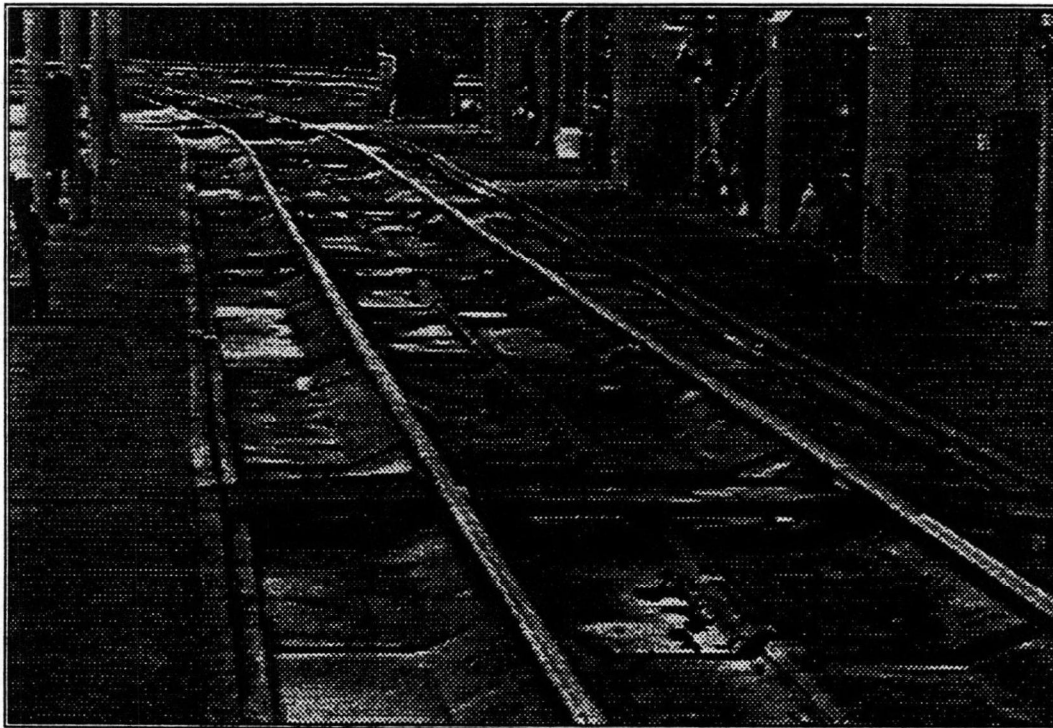


Figure 3: Track pan catchment system for oil and fuel drips

For more information:

See Mechanical: Oil Filter Replacement and Used Oil Disposal

See Engineering: Above Ground Storage Tanks for more information on SPCC requirements

See Chapter III: Comprehensive Environmental Response, Compensation and Liability Act

ENGINEERING OPERATIONS

Engineering operations include any work done to maintain fully operational railroad track and facilities. The following engineering operations activities that are subject to environmental regulations are discussed in this section:

- Above Ground Storage Tanks
- Air Conditioner/Refrigerator Service and Disposal: CFCs (Chlorofluorocarbons)
- Ballast Replacement, Storage, Disposal
- Building Renovation/Demolition: Asbestos Concerns
- Construction and Facility Maintenance
- Crosstie Replacement and Disposal
- Facility Power Generation/Incineration
- Herbicide Use- Maintenance of Way
- Landfills/Dumps
- Land Issues: Buying and Leasing Property
- Painting/Paint Blasting
- Tracksides Lubricators
- Transformers and Other Electrical Equipment Containing Insulating Fluids: PCBs
- Underground Storage Tanks
- Wastewater Treatment Systems and Oil-Water Separators
- Yard Maintenance/Dust Control

Above-Ground Storage Tanks

Major compliance issues: Clean Water Act, Stormwater runoff

Above-ground storage tanks (ASTs) are tanks on or above the ground surface. If the underground capacity of the tank plus the capacity of any underground piping exceed 10 percent of the tank's capacity, then the entire tank and piping system is categorized as an *underground* storage tank (See Figure 4 below). Above-ground storage tanks need to be managed properly to reduce spill and leak risks. Spills and leaks of tank contents can cause environmental damage, environmental liabilities, financial loss, and operational disruptions

What to do:

Certain states now require registration of ASTs and payment of annual fees. Certain states have AST regulations. Stormwater regulations also apply to activities associated with above-ground storage tanks.

Tanks should be included in a program of regular inspection and maintenance:

- ✓ Inspect above-ground storage tanks, connected piping, and associated pump equipment to guard against possible spills, leaks, or equipment failure.
 - ✓ All tanks should be labeled to identify tank contents.
 - ✓ Adequate secondary containment is vital to preventing spilled material from getting into water systems. Adequate containment includes dikes designed to contain the entire tank volume, plus 10 percent or one foot of additional freeboard of the tanks they surround.
 - ✓ Dikes and tank farm floors should be constructed of an impermeable material such as concrete, membrane liner, or densely packed clay to prevent spilled liquids from leaching into the soil and entering the groundwater.
 - ✓ Underground piping should be pressure tested periodically.
-

✓ **Case Example:** At one short line facility, a variety of diking systems were installed to prevent fuel storage area stormwater runoff from reaching waterways and storm drains. Fuel tanks were diked to prevent stormwater runoff and provide spill containment. Under the stormwater plans required at this facility, collected rainwater was examined for oil contamination before release. Any identified contamination was treated before releasing stormwater to storm drains.

SPCC Plan Requirements

Facilities are required under the Clean Water Act to develop Spill Prevention Control and Countermeasure (SPCC) Plans if the facility has one above ground storage tank of at least 660 gallons capacity, two or more above-ground vessels totaling more than 1,320 gallons capacity, or one underground storage of 42,000 gallons *or more* of capacity used for storage of petroleum products or other regulated substances. Plans are specific for each facility location and spell out in detail storage tank locations, volumes, contents of each tank, types of secondary containment, and emergency procedures to be followed in case of spill emergency. Some key components of an SPCC are.

- SPCC plan placement for ready identification and use in the event of an emergency (See Figure 6: Properly displayed SPCC plan, page 85)
- Frequent inspections of fuel storage and handling facilities
- Visual inspection of tanks, hoses, pumps, and nozzles, prior to using the fueling facility
- Fueling monitoring at all times
- Containment to prevent spills from entering any surface water or ground water. Containment is either a concrete or earthen dike and must be able to hold a volume equal to the largest single tank within the area, with allowance for snow and rainwater
- Employee training

SPCC plans are important enough to require review and certification by a Registered Professional Engineer on a periodic basis. *SPCC plans must be revised at least once every three years and must be kept on file.*

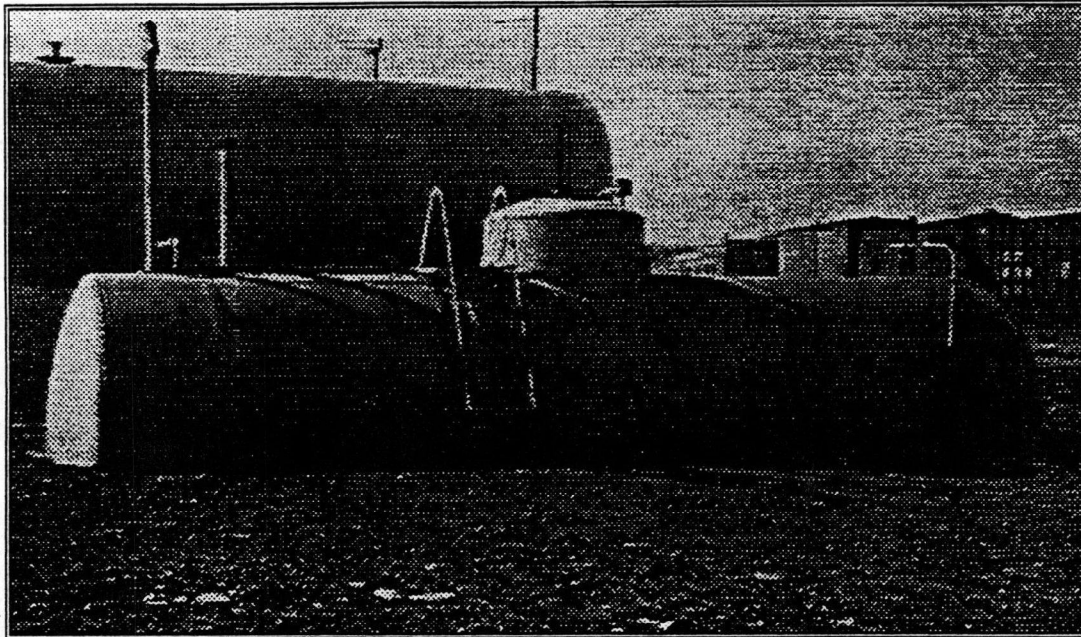


Figure 4: Underground storage tank

Note: Only 10% of total tank volume, including piping, must be underground for tank to receive underground classification

For more information:

See Chapter III: Clean Water Act

Air Conditioner/Refrigerator Service and Disposal: CFCs (Chlorofluorocarbons)**Major compliance issues: Clean Air Act**

Motor vehicle air conditioners, certain appliances (air conditioners, refrigerators, freezers), industrial process refrigeration units, and certain aerosol products and pressurized dispensers may use chlorofluorocarbons, also called CFCs (e.g., freon), and other class I and class II substances as refrigerants or propellants. These chemicals have been banned from manufacturing and use in *new* refrigeration units due to their negative affects on the ozone layer, the atmospheric layer that filters out the harmful solar radiation. Scientists anticipate that ozone layer depletion will cause an overall increase in the incidence of skin cancers, eye damage, crop damage, and potentially cause global warming. After July 1, 1992, it became unlawful for any person maintaining, servicing, repairing, or disposing of any appliance or industrial process refrigeration unit to knowingly vent release, or dispose of any ozone depleting substances into the environment. Check with local authorities to determine if exceptions apply to fire suppression systems and warning horns that may be used by track crews. The Clean Air Act calls for an end to the manufacture and use of these chemicals by the end of the century.

What to do:

Servicing of air conditioners and refrigeration units containing CFCs must be performed by a trained and certified technician who uses approved refrigerant recycling equipment. *Do not dispose of CFC-containing refrigeration units without properly removing the CFC propellants beforehand.* If not properly removed, CFCs such as freon are often released during refrigerator disposal due to cooling system breakage.

For more information:

See Chapter III: Clean Air Act

Ballast Replacement, Storage, Disposal

Major compliance issues: Regulated waste generation, Stormwater runoff

Ballast wastes are not hazardous unless they have been contaminated by hazardous substances. If stored on-site, stormwater runoff from contaminated or uncontaminated ballast can violate stormwater runoff regulations.

What to do:

If ballast materials become contaminated by petroleum products or hazardous materials, they may need to be stored and disposed of with the requirements for that particular contaminating substance. It is recommended that uncontaminated ballast also be stored properly to prevent dust releases to the air and water.

- Clean Water Act regulations prohibit the discharge of any substance, including uncontaminated ballast or ballast silt, into the waters of the U.S. without a permit.
- Ballast should be stored away from drains, waterways, and flood plains.
- Uncontaminated ballast may be stored on-site until reused.

For more information:

See Chapter III: The Resource Conservation and Recovery Act

Building Renovation/Demolition: Asbestos Concerns

Major compliance issues: Asbestos Hazard Emergency Response Act (AHERA)/ CAA National Emission Standards for Hazardous Air Pollutants (NESHAPs), Stormwater runoff

Renovation or demolition on your property can affect the environment in two major ways

- Stormwater runoff from your construction site may contaminate local water sources.
- Asbestos fibers released during renovation can create serious worker health and safety problems.

Asbestos issues are discussed below. Storm water compliance from construction sites is discussed in Engineering Operations: Construction and Facility Maintenance.

Asbestos is an insulating material widely used in the past where fire retardation was required or desirable. Applications for asbestos include, but are not limited to, floor tiles, ceiling tiles, siding, and thermal system insulation. Asbestos fibers have been linked to serious adverse health effects from the inhalation of airborne asbestos fibers. The presence of asbestos does not mean that a building's occupants are in danger, however. As long as the material containing the asbestos remains in good condition and is not disturbed, exposure to asbestos fibers is unlikely. Whenever asbestos-containing materials (ACM) are disturbed, through repair, renovation, demolition, or natural disturbances, asbestos fibers may be released. Government regulations now require that asbestos be phased out of production and use.

Under the Asbestos Hazard Emergency Response Act, AHERA, existing asbestos insulation and building materials in schools must be inventoried and managed to prevent human exposures. Many industries and businesses are also conducting inventories and removing asbestos where the potential for human exposure exists. *The chances for human exposure to asbestos are highest during maintenance work or building demolition.*

Many industries and businesses are also conducting inventories and removing asbestos where the potential for human exposure exists, even where it is not required by regulation.

What to do:

Most old building construction materials of unknown content should be considered as likely to contain asbestos. Typical asbestos-containing materials include pipe and duct insulation, fireproofing, roofing materials, floor tile, and transite pipe and sheet goods. Many other building materials, such as ceiling tiles, wall board, plasters, and fire doors, may also contain asbestos.

Although considered a serious health hazard, asbestos is *not* a RCRA hazardous waste. Renovations or demolition operations involving ACM are regulated by the Clean Air Act's

ENGINEERING

National Emission Standards for Hazardous Air Pollutants (NESHAPs). Asbestos disposal requires special handling procedures such as asbestos certified contractors for assessment and demolition of pre-1980 buildings, as well as posting of signs at disposal facilities.

The AHERA regulations require that personnel performing asbestos-related work be accredited by EPA-approved training programs. The rule also provides a proactive approach to identifying asbestos and maintaining it in good condition. ACM should be removed by qualified personnel in accordance with all applicable local, state, and federal laws, *prior* to any demolition or renovation activity. Asbestos removal professionals use OSHA-approved personal protective equipment, proper containment devices, and required removal practices. Contact your regional environmental agency representative (see Appendix A for a list of local contacts) before renovating or demolishing any building or structure, regardless of whether ACM is present or only suspected. *Do not remove or agitate any asbestos-containing materials, unless performed by properly accredited personnel.*

Other demolition-related issues may require compliance also. Many states have a formal notification process before demolition may begin. In Ohio, for example, at least 10 days notice must be given before any demolition or construction activity begins. Other requirements may include inspection by a licensed building inspector before construction or demolition may begin.

For more information:

See Chapter III: Clean Air Act

Construction and Facility Maintenance**Major compliance issues: Asbestos releases, Stormwater runoff, Dust creation**

Construction projects can negatively impact the environment and create compliance liabilities for your facility in three ways:

- 1) Dust releases may cloud the air and violate local visible air emission standards;
- 2) Stormwater runoff may violate Clean Water Act regulations; and
- 3) Asbestos releases from old building floor tiles, ceiling tiles, siding, thermal system insulation, or other fire retardation materials may violate Clean Air Act, OSHA standards, and create significant worker health and safety problems.

What to do:

Coordinate construction activities with your construction firm so as not to violate local air standards and stormwater requirements. Stormwater plans are required for construction sites greater than 5 acres in size.

For more information:

See Engineering: Building renovation/demolition: Asbestos concerns

See Chapter III: Clean Air Act

ENGINEERING

Crosstie Replacement and Disposal

Major compliance issues: Regulated waste generation, Air pollution

Creosote is used to treat and protect railroad ties. Spills of creosote liquid can be a significant soil contamination source.

Important Notes:

- ✓ The presence of creosote has worker health and safety repercussions for crosstie handling.
 - ✓ Crossties may not be burned without special air emission controls. If a crosstie fire occurs, your facility may face fines for air pollution violations.
-

What to do:

Any property transaction involving a railroad yard should have an environmental audit performed prior to the transaction. Because most railroad yards contain large quantities of creosote-treated railroad ties, and previously may have used creosote or had creosote treating plants on the property, creosote should be one of the constituents of concern in the audit process. All testing done by the Association of American Railroads on crossties indicates that cross ties do not meet the definition of hazardous waste. This testing included new as well as used crossties. The preferred method of crosstie disposal is recycling, either for less severe railroad service, landscape use, or cogeneration for energy recovery.

If possible, crossties should be reused or sold to an outside company for landscaping or recycling. Crosstie disposal programs may chip crossties and sell them as fuel to facilities with the air permits required to burn creosote materials. If necessary, a cooperative Class I railroad may allow the use of its crosstie recycling program. If no recycling opportunity is available, crossties may be disposed of in state permitted sanitary landfills.

Crossties should be handled only with appropriate protective equipment to prevent skin contact. When practical, use tongs to lift and move creosote treated crossties. *Gloves should be worn at all times during crosstie handling.*

✓ ***Case Example:*** One facility reused some of its crossties for landscaping railroad grounds.

For more information:

See Chapter III: The Resource Conservation and Recovery Act

See Chapter III: Clean Air Act

A Review of Toxicity Characteristic Leaching Procedure Testing of Railroad Crossties, AAR, 50 F Street, NW, Washington, DC 20001, 202-639-2251, Publication # R-861, July 1994.

Management of Used Treated Wood Products, Treated Wood Lifecycle Management Coalition, AAR, 50 F Street, NW, Washington, DC 20001, 202-639-2251, 1994

AAR Treated Wood Management Workshop, Notebook containing materials presented at the workshop on crosstie management sponsored by AAR, AAR, 50 F Street, NW, Washington, DC 20001, 202-639-2251, August 1995.

Management Practices for Used Treated Wood, Summers, K.V., @ EPRI TR-104966, Project 2879-02, June 1995. Available from AAR, 50 F Street, NW, Washington, DC 20001, 202-639-2251

Facility Power Generation/Incineration

Major compliance issues: Air pollution, Hazardous substance generation

The compliance responsibilities of your facility power plant or incinerator will depend on the types of fuel used for power generation, the technologies in place to remove pollutants from stacks, and the air quality of your region. Clean Air Act (CAA) permit requirements might apply or local regulations may limit the amount of visible stack emissions.

What to do:

Any change in the process or equipment used may result in permitting requirements under the CAA if new pollutants are released, or if there is an increase in process air discharges. If your powerhouse uses steam for electricity generation, local regulations on the amount of visible emissions from your facility may apply. Contact the state CAA permit program to determine if compliance with local air quality regulations is necessary.

For more information:

See Chapter III: Clean Air Act

Herbicide Use- Maintenance of Way**Major compliance issues: Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)**

Improperly applied pesticides or herbicides can be harmful to both the environment and the employee. Pesticide and herbicide overuse can contaminate soil, water, and air, causing damage to plant and animal life. Pesticides and herbicides have been found to be significant causes of reproductive problems in many species of animals, and health problems in improperly protected pesticide application employees.

What to do:

The requirements of the Federal Insecticide, Fungicide, and Rodenticide Act, or FIFRA, govern the application of pesticides or herbicides. FIFRA requires the application of pesticides and herbicides as stated on product labels. FIFRA establishes two categories of pesticides: General use and Restricted use. General use pesticides have fewer application and certification requirements. Restricted use pesticides require the certification of the application employee or contractor.

Care should be taken to avoid the discharge or spray of pesticides or herbicides into water. If accidental water releases occur, contact your local water environmental official immediately. Local officials may be found in Appendix A. Make sure that all pesticide application employees and contractors are properly certified for the pesticides in use at your facility.

For more information:

See Chapter III: Federal Insecticide, Fungicide, and Rodenticide Act

Landfills/Dumps

Major compliance issues: Resource Conservation and Recovery Act, Clean Water Act, The Comprehensive Environmental Response, Compensation, and Liability Act

Although on-site land fills and dumps are discouraged, the environmental compliance requirements that apply to your on-site dump depend on the types of wastes at the location.

The distinction between hazardous and non-hazardous wastes is important in determining the status of your dump or landfill. Some examples of non-hazardous railroad solid wastes include crossties, demolition/construction debris not contaminated with asbestos, discarded cardboard boxes, food wastes, and waste papers. All state laws prohibit the open dumping of non-hazardous solid waste materials without proper permitting. These materials must be disposed of at sanitary landfills or other state approved special landfills.

If hazardous materials have been disposed of in your landfill, cleanup actions may be required under the Comprehensive Environmental Response, Compensation, and Liability Act, also called Superfund. *Your company may be held liable for cleanup of the hazardous waste site even if it had no knowledge of the dumping or the hazardous materials were placed there in the past by previous property holders.* Abandoned containers and drums at your dump should be disposed of properly. Unmarked drums should be treated as if they contain hazardous materials until they can be tested and proven otherwise.

What to do:

Conduct assessments of all dumps on your property to determine waste constituents. If only non-hazardous materials are present in your dumps, local or state permitting is necessary. If hazardous wastes are disposed of at your facility, you must be permitted under the Resource Conservation and Recovery Act as a Treatment, Storage, and Disposal Facility, and you may face legal action for clean-up of any of your facility's sites contaminated with hazardous wastes.

For more information:

See Chapter III: The Resource Conservation and Recovery Act

See Chapter III: Comprehensive Environmental Response, Compensation and Liability Act

Land Issues: Buying and Leasing Property

Major compliance issues:

Under environmental laws, your company is ultimately responsible for the environmental liabilities on any land you own or lease, even if generated by lessees/licensees.

What to do:

The environmental compliance responsibilities of any prospective tenants should be examined carefully before leasing property. Environmental assessments should be conducted of any land under speculation for purchase. Property assessments are usually conducted by outside contractors

For more information:

See Chapter III: Comprehensive Environmental Response, Compensation and Liability Act

ENGINEERING

Painting/Paint Blasting

See Mechanical: Painting/Metal finishing

See Mechanical: Paint stripping/Shot Blasting

Trackside Lubricators**Major compliance issues: Regulated waste generation, Spill cleanup**

Trackside lubricator grease discharges can contaminate the soil and track lubricator used grease liners may be regulated wastes in your state. Trackside lubricator grease is relatively immobile. A report by the AAR, *The Environmental Impact of Wayside Rail Lubrication*, indicates that rail lubricator grease does not leach, and is generally limited to the area immediately adjacent to the lubricator. If lubricator oil is allowed to accumulate over time, clean-up activities may be required. In addition, ballast contaminated with large quantities of oil or petroleum residues must be treated as oil-contaminated waste. Ballast contaminated in this way will have to be specially stored to prevent oily stormwater discharges.

What to do:

As a Best Management Practice, absorbent fabric could be placed around rail lubricators to prevent ground contamination with oil. Used liners should be put into a grease bucket or other container and kept sealed with a lid. Empty lubricant containers should be reused, recycled or disposed of as non-hazardous solid waste.

For more information:

See Chapter III: Resource Conservation and Recovery Act

The Environmental Impact of Wayside Rail Lubrication, Report # R-835, AAR, 50 F Street, NW, Washington, DC 20001, 202-639-2251, May 1993.

Transformers and Other Electrical Equipment Containing Insulating Fluids: PCBs

Major compliance issues: Toxic Substances Control Act (TSCA)

In varying concentrations, the heat-resistant chemicals called polychlorinated biphenyls, or PCBs, have been used in the past as an insulating fluid in electrical equipment such as transformers, capacitors, and lighting ballast. PCBs are suspect carcinogens and are regulated under the Toxic Substances Control Act (TSCA). PCBs are now banned from manufacture and PCB containing equipment must be properly managed to prevent PCB releases to the environment. The three categories of PCB-containing materials under TSCA follow

- *Non-PCB transformers* contain PCBs in concentrations of less than 50 ppm. These units are not regulated and have no restrictions on use, disposal, and servicing. They can be sold at the end of their useful service lives.
- *PCB-contaminated transformers* contain PCBs in concentrations of between 50 and 499 ppm. Although these units have no restrictions on in-service use, disposal of the coolant is regulated.
- *PCB transformers* contain PCB concentrations of 500 ppm or greater. They are closely regulated and some are banned outright. Exterior labeling and periodic inspections and reporting are required for the units not banned.

For spills of PCBs containing 50 ppm or more, several release reporting and spill clean-up requirements, other than those under TSCA, must be satisfied under several statutes. These statutes include the Clean Water Act, and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund. Cleanup standards and requirements exist for certain PCB spill situations: spills directly into surface waters, drinking water, sewers, grazing lands, and vegetable gardens. *These types of spills are subject to final clean-up standards and immediate notification requirements to federal and state agencies.*

What to do:

All electrical equipment manufactured before 1978 containing insulating fluids should be assumed to contain PCBs unless tests or records indicate otherwise.

PCB or PCB-contaminated equipment cannot be sold. Known in-use PCB equipment (i.e., equipment containing fluid with a PCB concentration equal to or greater than 500 parts per million) must be inspected quarterly for leaks. Records must be kept of these inspections. If PCB waste or PCB equipment is disposed of, PCB levels must be ascertained via laboratory analysis. Contact your local environmental agency representative for sampling and/or disposal instructions. You may find your representative listed in Appendix A.

PCB equipment *designated for disposal* must be stored in a designated PCB storage area in the following manner:

- ✓ PCB items must not be stored for more than 30 days.
- ✓ No leaking PCB item should be stored without being placed in a suitable non-leaking container or over pack-drum with enough sorbent material to soak up all fluid released.
- ✓ Place 6" x 6" labels, "CAUTION contains PCBs" on all items and doorways.
- ✓ Make sure that the roof and walls of your storage facility prevent rain from reaching PCB items.
- ✓ Use a relatively impervious floor with a 6" high curb and no drains or other openings. Contained volume must equal at least twice the volume of the largest item stored or 1/4 the volume of all items.
- ✓ The storage area floor must be above the 100-year floodplain.
- ✓ If PCB items are to be shipped, they must move under a hazardous waste manifest and hazardous material waybill.

Any spill of one gallon or more of insulating fluid should be assumed to be a PCB spill, *unless tests or records indicate otherwise*. Regulated spills should be reported to the U.S. EPA regional office, the National Response Center, and state and local authorities. All electrical equipment involved in spills or emergencies should similarly be assumed to be PCB equipment, unless tests or records indicate otherwise. If regulated and involved in a spill, the following actions must be taken:

- Cleanup of PCB spills must be initiated within 24 hours and completed within 48 hours *regardless of holidays or weekends*.
- Cleanup of all PCB spills must be conducted by personnel trained in PCB spill remediation
- There are short- and long- range recordkeeping requirements that result from a spill of PCB-containing, or PCB-suspect, insulating fluids. A clear-cut narrative must be developed describing: detection of the spill (e.g., time, location, date, description of site); steps taken to mitigate environmental impact of spill; steps taken to clean up the spill; notification activities; and, verification of the effectiveness of the cleanup.

Clean-up requirements are developed at the discretion of the regional EPA office. Contact your local environmental agency representative for more information. Local contacts may be found in Appendix A.

ENGINEERING

Appropriate personal protective clothing should always be worn when working with substances that contain or come into contact with PCBs. Any protective or work clothing (including boots, gloves, etc.) which comes into contact with PCB fluid must be disposed of as PCB debris. In the case of inadvertent skin contact with PCBs, the contact area should be washed with soap and water. PCBs are not toxic in short term exposures.

If PCB-containing transformers are involved in a fire, a report should be made to the National Response Center at 1-800-424-8802. ***It is important to notify fire-fighting authorities when PCB materials are involved in a fire.*** PCB materials can form dioxins, another suspect carcinogen, during a fire, smoke from burning PCB items may be toxic.

For more information:

See Chapter III: Toxic Substances Control Act (TSCA)

Underground Storage Tanks

Major compliance issues: Resource Conservation and Recovery Act, Comprehensive Environmental Response, Compensation and Liability Act, Clean Water Act

It is important to note that EPA defines an Underground Storage Tank (UST) as any tank, including underground piping connected to the tank, that has at least 10 percent of its total volume buried underground (See Figure 5 below). USTs are subject to strict state and federal requirements for registration, installation, use, monitoring, and removal. The UST requirements do not apply to any tanks located in basements or tunnels that can be visually inspected.

Depending on contents, leaks from USTs may be regulated by the Resource Conservation and Recovery Act (RCRA) or the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). USTs that contain petroleum products and/or substances meeting the definition of a hazardous waste under RCRA require specific inspection and testing procedures, and have specific guidelines for removal. CERCLA regulates spills from tanks containing CERCLA hazardous materials. CERCLA has no inspection or testing requirements for tanks (or any other containers). CWA requirements apply to USTs with storage capacities of at least 42,000 gallons. These tanks require SPCC plans.

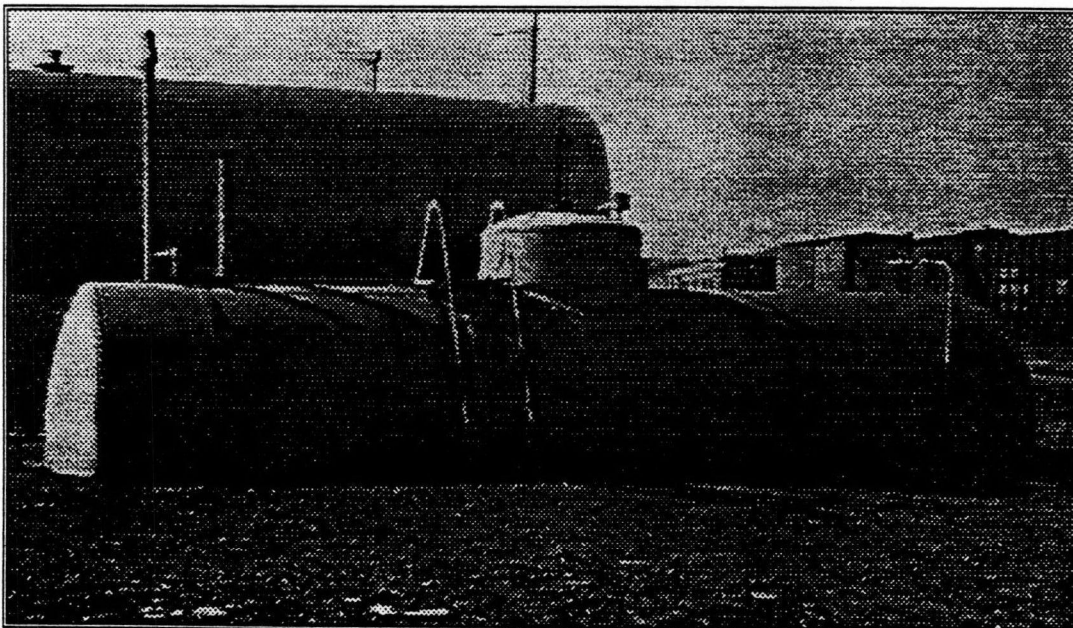


Figure 5: Underground storage tank

Note: Only 10% of total tank volume, including piping, must be underground for tank to receive underground classification

ENGINEERING

What to do:

There are detailed requirements applicable to the operation of USTs, including inventory control, spill monitoring, and overfill protection. federal and state laws mandate strict penalties for failure to report or to respond properly to spills or leakage once detected. Penalties also apply to violations of the requirements for the installation, monitoring, testing, registration, and removal or closure of USTs.

Those tanks *excluded* from UST requirements include:

- Heating oil tanks where the oil is used on the property where it is stored, and the tank is less than the state determined limit (typically 1,000 to 2,000 gallons)
- Tanks on or above the floor in underground areas like basements
- Septic tanks
- Tanks used as part of a flow-through wastewater or stormwater collection system

The U.S. EPA sets the guidelines for USTs, and most states enforce their own UST programs backed by federal law. UST regulations differ by state. A summary of UST requirements is presented below for general information purposes. The information summarized here is based on a cross-section of various state regulations. Consult your local environmental protection officer (see Appendix A for local contacts) for your state's specific UST compliance information.

Underground Storage Tank Requirements and Compliance Penalties

Requirement	Components
Technical Standards and Corrective Action Requirements for Owners and Operators of USTs	<ul style="list-style-type: none"> ✓ Government agency officials must be notified about the existence of USTs. ✓ Specific operating, reporting, closure, cleanup, and investigation requirements must be followed for USTs ✓ Spills above a reportable quantity, which varies state-by-state, must be reported.
Installation and Monitoring of New Tanks	<ul style="list-style-type: none"> ✓ Tanks installed after December, 1988 must meet standards for correct installation, corrosion protection, monitoring, spill and overfill protection. ✓ Spill and overfill prevention for new tanks may include constant monitoring of filling operations, spill prevention devices, basins to catch spills, or systems that automatically alert the operator when the tank is full. Piping also requires similar controls. ✓ Tanks built before December 1988 must be retrofitted to meet UST standards.
Reporting Requirements	<ul style="list-style-type: none"> ✓ All underground storage tanks must be registered with the proper state agency or EPA. ✓ Any suspected or actual release must be reported within 24 hours, and plans for correcting a leaking UST must be filed with the state. Inventory controls and tank gauges are one way to monitor for leaks of underground storage tanks. ✓ Owners/Operators of USTs must notify the state 30 days before permanently closing a tank or changing the activities of a tank. ✓ In the construction of new tanks, a notification form must be sent to state officials with information about construction materials and certification that the tank was installed in compliance with environmental regulations.
Penalties	<ul style="list-style-type: none"> ✓ Failure to comply with an order to stop violating UST requirements carries a fine of up to \$25,000 per day. ✓ Failure to notify regulators of the presence of an UST carries a \$10,000 per day per tank fine.

Other UST requirements include the following:

- Periodic tank tightness tests are required for underground petroleum product storage tanks.
- Accumulated rainwater should be collected from diked areas and disposed of properly. Contact local environmental officials to determine requirements for stormwater in tank diked areas.

✓Case Example: One facility has put a comprehensive leak detection program in place that involves both inventory controls and tank testing. With careful inflow-outflow accounting, the amount of material contained in a tank can be monitored for leak-related losses. One employee has the responsibility for conducting the simple inventory controls and maintaining proper records. Note: While inventory control is a good way to keep track of large discrepancies of fuel, visual inspections of above ground piping, and pressure checks of underground piping are recommended to make sure there are no leaks in the fuel delivery system.

For more information:

See Chapter III: Clean Water Act

See Chapter III: Comprehensive Environmental Response, Compensation and Liability Act

See Chapter III: The Resource Conservation and Recovery Act

Wastewater Treatment Systems and Oil-Water Separators

Major compliance issues: Clean Water Act

The disposal of wastewaters from your facility is governed by the Clean Water Act. Review of Clean Water Act requirements presented in Chapter III is helpful in understanding the information presented below.

The proper operation of your oil-water separator or other wastewater treatment facility is important for compliance with Clean Water Act (CWA) environmental regulations. Permits (called NPDES permits) are required by the CWA for the direct discharge of your wastewaters into the waters of the U.S. These permits require specific removal efficiencies for particular pollutants (e.g., oil). If your facility does not discharge directly to a waterway but discharges to a local treatment plant (publicly owned treatment works, or POTW), arrangements may have been made for pollutant removal, also called pretreatment, before your wastewaters enter the sewer. In both of these scenarios, permit violations and fines may result if spills or upset conditions overload your treatment system. Other compliance issues for your wastewater treatment involve sludges that may have special disposal requirements.

What to do:

If your facility routes its wastewaters to a local POTW, contact the POTW to discuss pretreatment requirements if they are not already in place. A discharge permit must be obtained if your wastewaters are discharged directly to the waters of the U.S.; *it is illegal under the CWA to discharge wastewaters directly without a permit*. If a municipal treatment plant is not available or will not accept your waste, install a treatment system and obtain a permit, or route the wastewaters to a tank or container for proper accumulation and disposal.

Berms or dikes should be constructed around hazardous material storage areas to prevent spills that may get into drains and overload treatment systems. Emergency shut-off valves on system plumbing are another good line of defense against system overload.

Keep wastewater from service bays out of stormwater drains unless they drain into oil-water separators or other treatment systems. Industrial waste discharges to septic systems, drain fields, dry wells, cesspools, pits, or separate storm drains may be in violation of federal, state, or local requirements and subject to monetary penalties.

✓ **Case Example:** The operation specifications of an oil-water separator at one facility were closely coordinated with a local sewer utility to determine the maximum amount of waste products that could be disposed of legally to the local sewer system.

For more information:

See Chapter III: Clean Water Act

ENGINEERING

Yard Maintenance/Dust Control

Major compliance issues: Air pollution

The control of fugitive dust and exhaust from your intermodal facilities, unpaved yards, locomotive sanding towers, and bulk handling facilities may be required in order to comply with local regulations on visible air pollution from your facility under the Clean Air Act (CAA)

What to do:

Actions to reduce dust emissions from your yard can include spraying dirt roads with water during dry and windy days, capping or carefully maintaining locomotive sanding towers to prevent sand loss, or using crusting compounds to contain open hopper cars. While use of used oil as a dust suppressant is prohibited under the federal used oil regulations, some states may authorize its use. While most railroads do not feel that use of used oil is an environmentally sound practice, it may be allowed in some states. Check with your state before engaging in this practice.

✓*Case Example:* At one railroad facility, a CAA violation was issued due to the fugitive dust from its coal piles. A water spraying system was installed to suppress the dust.

For more information:

See Chapter III: Clean Air Act

TRANSPORTATION OPERATIONS

The transportation operations category consists of all activities associated with the movement of locomotives and cars over a section of track. The following environmental compliance issues associated with transportation operations are discussed in this section:

- Fueling
- Hazardous Material Transport: Normal Operations
- Locomotive Oil and Coolant Releases
- Locomotive Stack Emissions
- Spills/Leakage During Transport

Fueling

Major compliance issues: Air releases, Wastewater generation, Stormwater runoff

Air pollution and fuel spillage are the major environmental concerns associated with fueling operations. While air emissions are a problem for volatile petroleum products such as gasoline, the railroad industry uses very little gasoline on site. Their largest fuel product is diesel fuel, which is less volatile. If gasoline is dispensed on site, it could contribute to local air quality problems, and may require permitting and controls. Spilled fuel may contaminate soil, ground water, or other water bodies. Some supertanker fueling systems deliver fuel at approximately four gallons per second, so a small connection malfunction can result in a large spill event. Even small spills can be carried by rainwater into the surrounding environment, so management of all spill events is important.

Fuel is considered a “special” waste substance. If not properly contained, spillage events may require costly cleanups. Filling and maintenance of fuel storage areas may require air quality permitting in some states.

What to do:

Preventing fuel-related pollution

Self-locking fueling nozzles minimize the risk of both fuel spillage and air pollution by ensuring a secure seal between the fuel source and fuel tank. During locomotive fueling, stay alert for fuel drippage and spillage. Catchment pans on either side of and between the rails will collect fuel spills and prevent soil contamination. These pans can be cleaned periodically by railroad personnel to remove fuel debris and accumulated wastes for proper disposal. In most states, petroleum and oil wastes are not classified as hazardous wastes, but may face special disposal requirements if not accepted at municipal landfills or disposal facilities (see Chapter III).

TRANSPORTATION

Statutory Overview discussion of RCRA and Special Wastes). If an oil-water separator is maintained at your facility, oily wastes should be drained to it for disposal.

Options for Preventing Fuel Spills	
<i>Spill Protection</i>	<i>Purpose</i>
Daily inspection of fueling equipment/tanks	Prevent potential spills
Drip pans or sorbent pads	Catch or soak up spills
Automatic fuel nozzles	Prevent overfill
Drain to oil separator	Catch oily stormwater
Containment dikes at tanks	Contain spills and leaks
SPCC Plan	Emergency Preparedness
Tank gauges and alarms	Warn of near full status

Contact your local air pollution authority (contacts are listed in Appendix A) to determine if air releases from fueling operations need to be regulated. Environmental compliance requirements under the Clean Air Act depend on the air quality of your region. Unless your area is rated as "serious non-attainment", air releases from refueling operations are probably not regulated.

Cleaning a Fuel Spill

Emergency spill response equipment should be available at fueling stations for rapid spill cleanup. Some useful items are:

- absorbent booms, pads or blankets to help contain spills and soak up pooling liquid
- rubber gloves and boots
- a shovel

Use absorbent blankets or materials to absorb spills as they happen. Absorbent materials contaminated with oil or fuel waste can be stored in plastic bags. *Any releases or spills of oil into a body of water, regardless of the amount of oil or fuel involved, must be reported immediately to the National Response Center (NRC, 24 hour Hotline: 1-800-424-8802), if a sheen appears on the water surface.* Hazardous substance spills above certain reportable quantities to require reporting to the NRC (See 40 CFR 116 and 117 for more information on reportable quantities). The amount triggering the reporting requirement varies from state to state. For example, in California only spills of hazardous substance greater than 42 gallons need be reported to the NRC, whereas Texas requires that all spills be reported to the NRC.

For more information:

See Chapter III: The Resource Conservation and Recovery Act

See Chapter III: Comprehensive Environmental Response, Compensation and Liability Act

Hazardous Material Transport: Normal Operations

Major compliance issues: Department of Transportation Regulations, Hazardous material spills

If hazardous materials are transported, DOT regulations exist for car inspections, car placement, switching, and shipping papers (e.g., waybills, manifests) If hazardous materials pass through your yard, rail containers should be inspected for:

- proper labeling
- valve cover placement
- any signs of leakage (See Spills/Leakage During Transport)
- proper car stenciling
- fulfillment of other DOT requirements

What to do:

Placarding and/or labeling is required for all containers carrying hazardous materials. A variety of railcar containers are used to transport these materials, but the most common variety are pressurized and general service tank cars. Hazardous materials are also transported in covered hoppers, intermodal trailers/containers, or portable tanks. Notify the shipper of the incident and gain information on the cargo.

For more information:

See Chapter III: Comprehensive Environmental Response, Compensation and Liability Act

See Chapter III: The Resource Conservation and Recovery Act

For general information on Hazardous Material Transportation, contact the Hazardous Materials Information Exchange, 1-800-752-6367. For information on specific regulatory requirements call the U.S. Department of Transportation Hotline, 202-366-4488

The Emergency Handling of Hazardous Material in Surface Transportation, Association of American Railroads, Bureau of Explosives (BOE), 50 F Street, NW, Washington, DC 20001, 202-639-2222 This publication has emergency handling information for hazardous materials in case of an incident. The information includes environmental considerations.

Chemtrec is a good source of material safety data sheets in case of an emergency. Chemtrec is an operation of the Chemical Manufacturers Association (CMA). CMA can be reached at 1300 Wilson Boulevard, Arlington, VA 22209, Telephone # 703-741-5000. The emergency phone number for Chemtrec is 800-424-9300.

TRANSPORTATION

Locomotive Oil and Coolant Releases

See Mechanical Operations: Oil Filter Replacement and Used Oil Disposal for information on compliance with locomotive oil releases

See Mechanical Operations: Locomotive and Motor Vehicle Coolant Disposal for information on locomotive coolant releases.

Locomotive Stack Emissions

Major compliance issues: Air releases

Section 213(a)(5) of the Clean Air Act (CAA) requires EPA to regulate emissions from locomotives. EPA is expecting to propose locomotive emission regulations in the latter part of 1996 and issue final regulations in the latter part of 1997. The final regulations are expected to impose emission limits on remanufactured and new locomotives.

Most areas around the country have general smoke limits, usually expressed as an opacity percentage (the amount of light blocked by the emission). However, only in isolated instances has there been an active attempt to apply state and local smoke limits to locomotives. The forthcoming EPA locomotive emission regulations will have smoke limits insofar as locomotives covered by the EPA regulations are concerned.

What to do:

Contact your local air quality administrator to determine (a) local visible emissions standards and (b) if locomotives are regulated under the Clean Air Act in your area. Local environmental representatives are listed in Appendix A. If locomotives are regulated mobile sources in your area, there will be specific required emissions levels for your locomotives.

Be prepared to comply with EPA's locomotives emissions regulations. The regulations are expected to have an effective date in the 2000-2001 time period.

For more information:

See Chapter III: Clean Air Act

Sections 209(e) and 213(a)(5) of the CAA.

TRANSPORTATION

Spills/Leakage During Transport

Major compliance issues: Hazardous material generation

Approximately 16 percent of all hazardous material releases to the environment in 1988 were from rail transport, according to Department of Transportation (DOT) statistics. In addition to being harmful to the environment, hazardous material spills and releases are subject to a variety of environmental regulations that can require costly cleanups or fines. *Understanding where hazardous material releases are most likely to occur is an important step in their prevention.* If a spill does occur, an understanding of the correct strategies and the correct locations of information resources can minimize spill impacts on the environment as well as resulting company liabilities.

Valve leakage or safety valve releases can be sources of material spills on pressurized and general service tank cars or other hazardous material containers such as covered hoppers, intermodal trailers/containers, or portable tanks. These leaks can manifest themselves as:

- odors or vapor clouds from tanker top valves
- spraying or splashing from the tanker top valves
- wetness on the side of the car
- dripping from the bottom outlet valve

In intermodal cars, spills/leaks can result from improper packing and resultant load shifting during transport. Intermodal container doors and other openings can be spill/release sources. Unloading and transfer facilities are high potential spill and release areas.

What to do:

-
- ✓ Clean up spills and leaks immediately if possible and safe to do so.
 - ✓ Consult material safety data sheets (MSDS) for product safety information.
 - ✓ Contact material shipper for information on cargo and safety precautions.
 - ✓ Spill and leak containment equipment should be readily available for use in a release event especially at unloading and transfer facilities at high risk for spills and releases.
 - ✓ There are a variety of reporting requirements if a spill or leak is of sufficient volume. Reporting requirements and spill clean-up procedures must be followed properly or fines may result.
-

For more information:

See Mechanical: Spills/Leaks for more information on reporting requirements and clean-up procedures

See Chapter III: Comprehensive Environmental Response, Compensation and Liability Act

For general information on Hazardous Material Transportation, contact the Hazardous Materials Information Exchange, 1-800-752-6367. For information on specific regulatory requirements call the U.S. Department of Transportation Hotline, 202-366-4488.

The Association of American Railroads (AAR) Transportation Technology Center (TTC) located in Pueblo, CO conducts training courses on the transportation of hazardous materials throughout the year. For information concerning class times contact: AAR - Transportation Technology Center, Hazmat Training, P.O. Box 11130, Pueblo, CO 81001, Telephone: 719-584-0584, Fax: 719-584-0790.

The Emergency Handling of Hazardous Material in Surface Transportation, Association of American Railroads, Bureau of Explosives (BOE), 50 F Street, NW, Washington, DC 20001, 202-639-2222. This publication has emergency handling information for hazardous materials in case of an incident. The information includes environmental considerations.

Chemtrec is a good source of material safety data sheets in case of an emergency. Chemtrec is an operation of the Chemical Manufacturers Association (CMA). CMA can be reached at 1300 Wilson Boulevard, Arlington, VA 22209, 703-741-5000. The emergency phone number for Chemtrec is 800-424-9300.

TRANSPORTATION

NOTES

CHAPTER III: GUIDE TO FEDERAL ENVIRONMENTAL LAWS

MAJOR ENVIRONMENTAL LAWS APPLICABLE TO THE SHORT LINE RAILROAD INDUSTRY

The major federal environmental laws applicable to short lines are discussed below. They are, in order of appearance:

- The Resource Conservation and Recovery Act
- The Clean Water Act
- The Clean Air Act
- The Toxic Substances Control Act
- The Comprehensive Environmental Response, Compensation, and Liability Act
- The Emergency Planning and Community Right-to-Know Act
- The Federal Insecticide, Fungicide, and Rodenticide Act
- Noise Control Act
- Other Regulations Potentially Affecting Railroad Operations

Only those regulatory requirements that have the greatest impact on railroad operations are presented below; the discussions of environmental statutes are not intended to be exhaustive. The history of major environmental laws, the railroad operations they regulate, their compliance requirements, and non-compliance penalties are presented for each environmental statute. The Code of Federal Regulations (CFR) citation for each regulation is presented for further research purposes. The CFR citation contains the text of the regulations discussed here. Contact your local environmental agency or public library to determine the closest source of CFR materials.

Please note: This handbook discusses only federal environmental laws and their related regulations. However, many states have been given the authority to put their own environmental programs in place if these programs are at least as strict as the federal ones discussed below. Even where federal regulations apply, individual states may impose additional requirements for environmental compliance. As a result, the type and stringency of environmental requirements will differ from state to state. Since state standards may be considerably more restrictive, the compliance requirements discussed below should be considered as a baseline- the lowest potential level of activity required for compliance with environmental laws. This document should not be used as an explicit guide to compliance; it is intended to provide a background on environmental compliance issues. You can determine the

compliance requirements particular to your state by contacting your state's environmental officials listed in Appendix A.

Some examples of the applicability of environmental laws to short line railroad operations are presented in the table below:

Major Environmental Laws, What They Regulate, and Their Application to the Short Line Railroad Industry		
<i>Regulation</i>	<i>Sample of Materials Regulated</i>	<i>Applicability to the Short Line Railroad Industry</i>
Resource Conservation and Recovery Act (RCRA)	<ul style="list-style-type: none"> • Signal Batteries • Underground Storage Tanks • Used Oil • Paint sludges 	Governs storage and disposal of common railroad wastes
Clean Water Act (CWA)	<ul style="list-style-type: none"> • Locomotive wash waters • Stormwater runoff from refueling stations 	Treatment and permitting requirements for railroad wastewater discharge
Clean Air Act (CAA)	<ul style="list-style-type: none"> • Bulk storage • Solvent cleaning stations • Yard dust • Asbestos, CFCs 	Requires permits for releases of specific compounds to the air
Toxic Substances Control Act (TSCA)	<ul style="list-style-type: none"> • Transformers: PCBs 	Proper disposal and storage of transformers
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	<ul style="list-style-type: none"> • Waste dumps containing hazardous materials • Hazardous material reporting • Non-permitted landfills 	Clean-up of hazardous waste sites and proper reporting requirements for hazardous material incidents
Emergency Planning and Community Right-to-Know Act (EPCRA)	<ul style="list-style-type: none"> • Material Safety Data Sheets 	Worker and community knowledge of chemicals on-site
Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)	<ul style="list-style-type: none"> • Pesticides and herbicide application procedures 	Track maintenance
Noise Control Act	<ul style="list-style-type: none"> • Maximum allowable sound levels from specific railroad operations 	Operation of certain rail equipment, retarders, car coupling, and load cell testing

Note: This table is for reference purposes. The sections below provide more detailed information on the regulations concerned.

The Resource Conservation and Recovery Act

Acronym: RCRA (pronounced, rick-rah)

What is RCRA? A History and General Overview of the Law

The Resource Conservation And Recovery Act, or RCRA as it is more commonly known, was passed in 1976 to regulate the management of solid wastes, hazardous wastes, and underground storage tanks. One major component of RCRA that affects railroad operations directly is the “cradle to grave” management system for hazardous wastes- a tracking system that requires labeling and manifesting to record the progress and location of hazardous waste from time of generation to time of disposal. The original RCRA law has been amended twice since 1976. The information presented below represents the federal law as of September, 1995, other amendments or changes may have occurred since that time.

To see the regulations:

- 40 CFR 260-299 RCRA Regulations

How Does RCRA Apply to Your Railroad Operations?

RCRA regulates the proper storage, handling and disposal of railroad wastes (called solid wastes and hazardous wastes under RCRA) and the proper management of underground storage tanks such as petroleum tanks. Railroad facilities produce a variety of RCRA regulated wastes in the course of normal operation and utilize underground storage tanks for product and fuel storage.

RCRA compliance information is presented below in detail. Operations that require RCRA compliance are discussed in Chapter II, Environmental Compliance Issues Facing Short Line Railroads: A Listing by Railroad Operations. Please note that many RCRA requirements are implemented by state laws which may be more stringent than the federal requirements listed below. Always contact your state’s environmental protection offices when determining which requirements apply to your railroad.

Basic federal compliance requirements are discussed below by four general RCRA categories:

- 1) Hazardous Solid Waste**
- 2) Non-Hazardous Solid Waste**
- 3) Special Waste**
- 4) Underground Storage Tanks**

There are two types of solid wastes, hazardous and non-hazardous, each with its own disposal requirements under RCRA. Hazardous solid wastes are discussed in the next section, Hazardous Solid Waste. The hazardous waste compliance section below is more detailed than the other sections in this chapter. This is due to the variety of common railroad wastes (e.g.,

signal batteries, spent solvents) that are considered hazardous wastes under RCRA law. It would be repetitive to discuss the many RCRA hazardous waste compliance responsibilities for each specific hazardous waste producing operation in Chapter II, Environmental Compliance Issues Facing Short Line Railroads. A Listing by Railroad Operations. All of the hazardous waste producing operations presented in that chapter refer to the section below.

Hazardous Solid Waste

Hazardous Solid Waste is a solid waste, or a combination of solid wastes, which, because of its quality, concentration, source of generation, or physical, chemical, or infectious characteristics, can cause or contribute to illness or death. Interestingly enough, "solid waste" does not actually have to be "solid" in the standard meaning of the term to qualify under RCRA law. Federal regulations define "solid waste" as any gaseous, solid, or liquid material that is abandoned, burned, disposed, spilled or handled in any other way intended to dispose of the material

A waste is defined as hazardous if it is:

- *ignitable* (has a flash point less than 140°F, is an oxidizer, or is a solid which is combustible through friction, adsorption of moisture, or can spontaneously combust)
- *corrosive* (has a pH of 2.0 or less, has a pH of 12.5 or more, or corrodes steel at a rate greater than 0.25 inch per year)
- *reactive* (unstable or undergoes violent changes without detonation, reacts violently with water, forms potentially explosive mixtures with water, is a cyanide- or sulfide-bearing waste which when exposed to pH conditions between 2.0 and 12.5 can generate toxic gases, vapors, or fumes; or is a forbidden explosive, a class A explosive, or a class B explosive)
- *toxic* (as defined by the toxicity characteristic leaching procedure)
- *specifically listed* in EPA regulations by the name or process that produces the waste

Federal Requirements for Hazardous Wastes

Three major factors determine whether and to what extent RCRA hazardous waste requirements apply to your facility:

- the *types and kinds* of hazardous wastes being produced at the facility,
- the *volume* of hazardous waste produced per month at the facility, and
- the *length of time* the hazardous waste remains on site at the facility.

Under RCRA law, facilities producing hazardous wastes are called hazardous waste *generators*. Many railroad facilities qualify as hazardous waste generators under RCRA law. Under RCRA law it is your responsibility to determine whether or not a waste is hazardous. Or, as stated in RCRA terminology, the burden of proof is on the generator. Some potentially relevant hazardous wastes produced at your facility are presented in the table below. *Note:* The final designation of hazardous for a waste depends on state and local laws. It is important for your facility to determine whether or not a waste is hazardous as dictated by those laws. See 40 CFR 261.31-261.33 for full list of EPA hazardous wastes. Appendix B presents common railroad wastes and their designation as hazardous or non-hazardous under environmental laws.

Some examples of hazardous wastes produced during railroad operations include solvent residues from parts cleaning and spent nickel cadmium batteries. Used oil is currently not listed as a hazardous waste under RCRA regulations. However, if used oil meets one of the hazardous waste characteristics (e.g., ignitable) or is mixed with a listed hazardous waste, it must be stored and disposed of as a hazardous waste. Most waste oil generated by a short line railroad (e.g., spilled diesel fuel, motor oil) is not a hazardous waste, but cutting oil, hydraulic oil, and any oil containing solids may require hazardous waste handling.

Potential RCRA Hazardous Wastes Generated During Railroad Operations	
•	Absorbent materials contaminated with hazardous substances
•	Aerosol cans, still pressurized
•	Cutting oils, hydraulic oils, and any oils containing solids
•	Grit blast wastes
•	Ignitable paint thinners
•	Lead-based or ignitable paint and related wastes
•	Lead acid batteries, non-recycled
•	Nickel cadmium, nickel iron, and carbonaire batteries
•	Oil filters constructed with "terne" metal (a lead-tin alloy)
•	Solvents and solvent sludge

Once you have determined that your facility generates hazardous waste, the amount of waste you produce is important in determining your compliance responsibilities under RCRA law. There are three size categorizations for hazardous waste generators, each based on the total amount of hazardous waste produced and stored at your facility: 1) conditionally exempt small quantity generators, 2) small quantity generators, and 3) large quantity generators. For example, used nickel cadmium, nickel iron, and carbonaire batteries are considered hazardous wastes under RCRA. The number of signal batteries used at your facility is a simple measure of railroad facility size designation under RCRA. The generator category definitions are presented in a table below along with the approximate number of signal batteries required to fill the category. Short line railroads more often qualify as small quantity generators or conditionally exempt small quantity generators because of their small volumes of waste generation. The compliance requirements for these three size categories are discussed in detail below and are

referenced in the Hazardous Material Storage and Disposal section of Chapter II, Environmental Compliance Issues Facing Short Line Railroads A Listing by Railroad Operations.

To see the regulations:

40 CFR 261: Identification and Listing of Hazardous Wastes

Hazardous Waste Generator Categories		
Waste Category	Category Criteria	
	Production	Storage
Conditionally Exempt Small Quantity	Produces less than 100 kg per month of hazardous waste (220 lbs. or 4 signal batteries)	Accumulates less than 1,000 kg of hazardous waste in storage
Small Quantity	Produces less than 1,000 kg per month of hazardous waste (2,200 to 220 lbs. or 48 to 4 signal batteries)	Accumulates less than 6,000 kg of hazardous waste in storage
Large Quantity	Produces more than 1,000 kg per month of hazardous waste (2,200 lbs. or 48 signal batteries)	Accumulates more than 6,000 kg of hazardous waste in storage

Conditionally Exempt Small Quantity Generators

Only a few hazardous waste regulations apply to firms that qualify as *conditionally exempt small quantity* generators. A facility qualifies for this category if it:

- Generates less than 100 kg per month of hazardous waste
- Never has more than 1,000 kg of accumulated hazardous waste on site at any one time

Conditionally exempt small quantity generators are exempt from all RCRA regulations except for the following requirements:

- They must evaluate the waste to determine whether it is hazardous
- They may not accumulate more than 1,000 kg of hazardous waste at any time
- They must treat or dispose of the waste on site or ensure delivery to a permitted or interim status treatment, storage and disposal facility, a state approved municipal or solid waste facility, or a legitimate recycling facility. This may require obtaining a generator identification number, explained further below.

To see the regulations:

- 40 CFR 261: Conditionally Exempt Small Quantity Generator Requirements

Large and Small Quantity Generator Requirements

Those generators that do not qualify for conditionally exempt status are classified as large or small quantity generators. Large and small quantity generators have some common compliance requirements. The common requirements of large and small quantity generators are discussed here. Compliance requirements specific to each category are discussed in the next section.

Large and small quantity generators are required to:

- ✓ Obtain a generator identification number;
- ✓ Store and ship hazardous waste in suitable containers or tanks;
- ✓ Manifest the waste properly;
- ✓ Maintain copies of the manifest, a shipping log covering all hazardous waste shipments, and test records;
- ✓ Comply with applicable land disposal restriction requirements; and
- ✓ Report releases or threats of releases of hazardous waste.

These compliance requirements are discussed individually below.

Generator Identification Number

If you qualify as a hazardous waste generator, you must contact your local RCRA official for a generation identification number for use in manifesting and reporting to EPA, or, in some cases, the state office.

Storage Requirements

All waste must be placed in approved storage containers, labeled "Hazardous Waste" and marked plainly with the date waste accumulation began and detailed description of contents. Labels and placards must be used as required by EPA and DOT regulations (See Contacts list). Hazardous waste must be stored in a closed, non-leaking container that is inspected at least

once weekly. The amount of time you are allowed to keep stored hazardous waste on site at your facility is dictated by the amount of hazardous waste you generate per month- your designation as a large or small quantity generator (See Requirements that Vary by Small or Large Quantity Generator Status later in this section for more information)

Do not mix hazardous and non-hazardous wastes in the same drum. Any waste mixed with a hazardous waste must be disposed of as hazardous under current RCRA law.

Both large and small quantity generators must ensure that hazardous wastes destined for off site shipment are kept in areas that meet the following basic safety requirements:

- The storage area must be 50 feet from a property line and secured by a fence or other barrier to prevent unauthorized entry
- There must be a sign at each area entrance which reads "Danger - Unauthorized Personnel Keep Out"
- There must be curbed or diked areas to contain each category of non-compatible fluids stored
- The area must be posted "No Smoking" inside and immediately outside the fence or barrier

To see the regulations:

- 40 CFR 262: Labeling Requirements
- 40 CFR 265: Container requirements

Manifest and Record Keeping Requirements

Three types of records must be kept by a hazardous waste generator:

- A copy of each signed Uniform Hazardous Waste Manifest must be kept for three years from the date of transportation (these manifests may be obtained from State environmental agencies)
- Copies of all reports required to be filed with the EPA must be kept for three years from the due date of the report
- Copies of all test reports used to determine the status of waste generated (hazardous or non-hazardous) must be kept for three years from the last transportation date for each waste stream

Note: If your facility has an agreement with a hazardous waste reclaimer that specifies waste types, frequency of shipments, and states that the reclaimer provides the vehicle used to transport the waste, no transportation-related manifesting may be required beyond a copy of

the agreement. See the applicable regulations below at 40 CFR 262.2 and contact your state and local hazardous material officials to determine your specific responsibilities

To see the regulations:

- 40 CFR 262.20 Uniform Hazardous Waste Manifest Information

Land Disposal Restrictions

To reduce the amount of land-disposed wastes that can be safely disposed of in other ways, RCRA establishes a set of restrictions on the land disposal of hazardous wastes. A written land disposal restriction notification must be transmitted to the destination facility with each off-site shipment of hazardous waste. The land disposal notification form must include the EPA hazardous waste number, corresponding treatment standards, manifest number associated with the shipment of waste, and waste analysis data if available. A copy of the statement must be filed with the appropriate manifest copies.

To see the regulations:

- 40 CFR 268: General Land Disposal Requirements
- 40 CFR 268.7: Written Land Disposal Notification Requirements

Reporting Releases or Release Threats

In the case of fire, explosion, or other release of hazardous waste to the environment, the generator must immediately contact the National Response Center at 800-424-8802 and be prepared to supply the following information:

- Generator name, address, and EPA identification number
- Date, time, and type of incident
- Quantity and type of hazardous waste(s) involved
- Extent of injuries, if any
- Estimated quantity and disposition of recovered material, if any
- For *large quantity generators*, an assessment of the actual or potential hazards to human health and the environment

To see the regulations:

- 40 CFR 262.34: Release or Threat of Release Reporting

Requirements that Vary by Small or Large Quantity Generator Status

Your facility will have a set of variable requirements under RCRA that hinge on your designation as a large or small quantity generator. These requirements include

- Maximum allowable hazardous waste storage time before additional permitting is necessary
- Biennial reporting requirements
- Document retention periods
- Required training, preparedness, and emergency procedures

These requirements are discussed individually below.

Maximum Hazardous Waste Storage Time

No matter what your monthly waste output, if you dispose of hazardous wastes on site you qualify as a hazardous waste Treatment, Storage, and Disposal (TSD) facility under RCRA and must pursue additional permitting. Railroads are unlikely to fall into this category. If you don't dispose of waste on-site, but you store waste on-site at your facility longer than certain timeframes, then you must also obtain TSD permitting, although deadline extensions are sometimes available.

Maximum Hazardous Waste Storage Time On-site		
Generator Category	Amount Stored	Maximum time
Large quantity	More than 6,000 kg	90 days
Small quantity	Less than 6,000 kg	180 days

To see the regulations:

- 40 CFR 261: Hazardous Waste Storage Requirements

Biennial Reporting Requirements

Large quantity generators must submit a biennial report on their hazardous waste generation and management activity by March 1 of every even-numbered year. In the report, the generator must identify each waste Transporter and each Transfer Storage and Disposal facility (TSD) used throughout the year. The generator also must describe the hazardous waste generated and shipped, efforts made to reduce the volume and toxicity of the waste, and changes made in the volume and toxicity of the waste compared with those achieved in previous years. For generators who treat, store, or dispose of wastes on-site, additional reporting is required on methods of treatment, storage, or disposal.

To see the regulations:

- 40 CFR 262.41: Biennial Reporting Requirements

Document Retention Periods

Large and small quantity generators must maintain copies of each manifest, exception report, test result, and waste analysis, for at least three years. Large quantity generators must also maintain copies of their biennial report for the same period of time. This time period is automatically extended during the course of an unresolved EPA enforcement action regarding the regulated activity, or as requested by the Administrator. In addition, you must keep a copy of each land disposal restriction notification form for at least 5 years.

To see the regulations:

- 40 CFR 262.40: Document Retention Periods
- 40 CFR 268.7: Document Retention; land disposal restriction notification

Required Training, Preparedness, and Emergency Procedures

These requirements apply to those large and small quantity generators that store waste on-site. The requirements state that, among other things, personnel must be familiar with emergency procedures to be followed in the event of spills, fires or other releases of hazardous waste. The specific requirements differ for large and small quantity generators, as illustrated in the following table:

Training, Preparedness, and Emergency Procedure Requirements	
Generator Category	Requirement
Large quantity	<ul style="list-style-type: none"> • Establish an appropriate hazardous waste handling training program for employees. • Prepare a contingency plan designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned release of hazardous waste or hazardous waste constituents.
Small quantity	<ul style="list-style-type: none"> • Ensure that employees handling hazardous waste are thoroughly familiar with proper waste handling procedures. • Maintain a person on-call or on-premises with responsibility for coordinating all response measures in the event of an emergency.

To see the regulations:

- 40 CFR 262.34: Training, preparedness, and emergency procedure requirements

Non-Hazardous Solid Waste

Non-Hazardous Solid Waste is defined as any garbage, refuse, or sludge from waste treatment plants, water treatment plants, or air pollution control equipment. Remember that “solid waste” does not actually have to be “solid” in the standard meaning of the term to qualify under RCRA law. Federal regulations define “solid waste” as any gaseous, solid, or liquid material that is abandoned, burned, disposed, spilled or handled in any other way intended to dispose of the material.

Some examples of non-hazardous railroad solid wastes include crossties, discarded cardboard boxes, food wastes, waste papers, and demolition/construction debris not contaminated with asbestos. RCRA sets up a framework for non-hazardous solid waste handling and disposal, but design and operational requirements for solid waste disposal facilities have been delegated to the states. All state laws prohibit the open dumping of non-hazardous solid waste materials. These materials must be disposed of at sanitary landfills or other state approved special landfills. Railroad solid waste dumps are subject to state RCRA requirements.

Federal Requirements for Solid Waste Category

The federal government has delegated design and operational requirements for solid waste facilities to state government. You must contact your state agency responsible for solid waste management to get a copy of its requirements if you currently dispose of solid wastes on your premises (See Appendix A for state contacts). If your solid wastes are currently disposed off-premises, they must go to a state-approved landfill.

Special Waste

Special Waste is a term applicable to those wastes that must be handled as hazardous despite non-hazardous designation under RCRA law. This situation may arise if municipal or local landfills do not accept certain wastes. If these special wastes are not accepted by the disposal facility, they must then be disposed of as hazardous. Any sludge or soil with oil contamination may fall into the special waste category. Used oil recycling and disposal is also regulated by RCRA, and may be considered a special waste. Local disposal regulations will determine the status of special wastes.

Underground Storage Tanks

Underground Storage Tanks are containers, including pipes, that are or have been used to contain regulated materials and that have at least 10% of volume below the surface of the ground. Typically, underground storage tanks are used for fuel or oil storage at short line railroads.

Federal Requirements for Underground Storage Tanks

The underground storage tank regulations cover the following areas:

- Design and construction standards (All underground storage tanks built before December 1988 must be upgraded to comply with the current design and operating standards. All underground storage tanks built after December 22, 1988, must comply with the current regulations before they are used.)
- Operating requirements
- Release detection and cleanup requirements
- Release reporting and investigation (The reportable quantity of a spill varies from state to state. You must contact your state agency responsible for underground storage tank management to get a copy of their requirements. Your state's environmental officials are listed in Appendix A.)
- Release cleanup
- Financial responsibility and closure requirements

See Underground Storage Tanks section in Chapter II for detailed compliance information.

To see the regulations:

- 40 CFR 280: Underground Storage Tank Requirements

RCRA Enforcement Provisions and Penalties

General enforcement penalty information is presented below for the solid waste, hazardous waste, and underground storage tank categories of RCRA regulations. Responsibility for RCRA enforcement belongs to the Federal or State Environmental Protection agency. The specific penalties and provisions of your state may be more stringent than the federal penalties listed below

Solid Waste

- Federal law does not establish specific penalties for civil or criminal violations of the solid waste program. Enforcement of the solid waste program relies on state law

Hazardous Waste

- Federal law for the hazardous waste management program has civil and criminal penalties.
- Civil penalties are a maximum of \$25,000 per day of non-compliance per incident and the company's permit may be revoked. The criminal penalties apply to individuals within a company and are a maximum of 2 years imprisonment and a maximum penalty of \$50,000 per day of non-compliance per incident.

Underground Storage Tanks

- Federal law for the underground storage tank program has civil penalties of \$25,000 per day of non-compliance with a consent order.
- Federal law also has a non-notification fine of \$10,000 per day of non-compliance. All underground storage tanks must be registered with the proper state agency or U.S. EPA.

The Clean Water Act

Acronym: CWA (name is usually spoken fully as Clean Water Act)

What is the CWA? A History and General Overview of the Law

In 1972 Congress enacted the Federal Water Pollution Control Act (FWPCA). The FWPCA was renamed the Clean Water Act, and amended several times, most recently in 1987. The goals of the CWA are to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The Clean Water Act regulates the discharge of pollutants into the surface waters of the United States. A pollutant can be liquids, such as waste oil or solvents for parts cleaning, or can be solids, such as ballast, garbage, chemical waste, rock sand, or many other wastes created at a railroad facility. The information presented below represents the federal law as it stands at the date of publication, other amendments or changes may have occurred since that time. More importantly, only the compliance requirements for federal laws are presented below. While the basis for the requirements is the federal law and its meanings, your state and local governments may (and probably do) have more stringent compliance requirements. These can take the form of stricter limits for pollutant discharges than required by federal law, greater coverage of laws, or stiffer penalties for non-compliance. Contact your local governmental environmental representative for up-to-date information. These representatives are listed in Appendix A.

To see the regulations:

- 40 CFR 110-122, 40 CFR 400-500 Clean Water Act and Effluent Guidelines

How Does the CWA Apply to Railroad Operations?

The CWA applies to a variety of short line railroad operations. Any railroad operation that produces a wastewater (e.g., locomotive and small parts washing) or deposits substances on the ground that may be carried away by stormwater (e.g., fuel and oil spills and other debris), will trigger CWA requirements. The CWA is set up to regulate these two different types of water pollution: one from a wastewater source, often called a point source, (e.g., an outflow pipe from a parts-washing basin) the other from a diffuse source, often referred to as a non-point source (e.g., non-drained ground where oil has dripped).

The CWA requires the following from short line railroads:

- NPDES permits
- Stormwater discharge permits
- SPCC plans and spill reporting

Some elements of these requirements are summarized below, and are then discussed in greater detail in this section.

Some CWA Requirements Applicable to Short Line Railroads		
NPDES permits	Stormwater discharge permits	SPCC plans and spill reporting
<ul style="list-style-type: none"> • Disclosure of volume and nature of discharge • Limitations on quantity of certain pollutants • Monitoring and reporting requirements • Non-point pollution • <i>Note: facilities discharging to POTWs do not require NPDES permits.</i> 	<ul style="list-style-type: none"> • Required if stormwater drains to a municipal separate storm sewer system or directly to receiving water • Required for facilities involved in vehicle maintenance or equipment cleaning • Site maps, drainage and discharge structures, and other information required on applications 	<ul style="list-style-type: none"> • Triggered by oil or petroleum product storage in excess of 660 gallons in a single tank or 1,320 gallons in aggregate at facility • Local environmental representatives to be contacted in case of discharge • Documentation of storage vessels, types of containment, emergency equipment available, etc.

General Federal CWA Requirements

NPDES Permit Requirements

The National Pollutant Discharge Elimination System (NPDES) permit program requires anyone discharging pollutants directly to U.S. waters to file and be approved for an official permit. Those facilities that discharge wastewater to wastewater treatment facilities (commonly referred to as Publicly Owned Treatment Works, or POTWs) do not require NPDES permits, but do have other requirements. In addition, NPDES permits were required for stormwater discharges in 1990. The permit requires disclosure of the volume and nature of the discharge, imposes limitations on the quantity of certain pollutants in the discharges, and has monitoring and reporting requirements. Most state environmental protection agencies have control over state implementation of the CWA; in cases of state CWA implementation, state abbreviations are often inserted for the "N" in NPDES (e.g., in Rhode Island, a RIPDES permit). If your railroad discharges to a local wastewater treatment facility then the POTW will usually set discharge levels for the pollutants in your wastewater.

To see the regulations:

- 40 CFR 122: National Pollutant Discharge Elimination System Permit Regulations

Stormwater Discharge Permits

In November 1990, the U.S. EPA published its final rules that require NPDES permits for stormwater discharges. Stormwater permits are required for areas where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products, or industrial machinery are exposed to stormwater that drains to a municipal

separate storm sewer system or directly to a receiving water. *Stormwater permits are not required where the runoff flows through a combined sewer to a POTW.*

At the time the stormwater rules were originally published in 1990, there were three options provided for industry to be covered under this program, 1) an individual permit, 2) a general permit, and 3) a group permit. The group permit was the option selected by the rail industry because it allowed sampling fewer sites being permitted. Phase I of the group application was due September 30, 1991, and Phase II was due October 1, 1992. The permit was issued on September 29, 1995. The permit is called the Storm Water Multi-Sector General Permit (MSGP) for Industrial Activities. It is available in 11 non-authorized states as follows: Arizona, Florida, New Mexico, Oklahoma, Texas, and the District of Columbia. Authorized states have their own programs, and you should check with them to see where they are in the permitting process if you have not already done so. The MSGP permits stormwater activities associated with industrial activity from Rail Transportation Facilities as well as many other industrial activities. The permit covers railroad facilities that perform vehicle and equipment maintenance, and equipment cleaning.

Some of the activities at vehicle and equipment maintenance and equipment cleaning locations potentially affected include:

- ✓ Vehicle and equipment maintenance
 - ✓ Equipment cleaning
 - ✓ Painting
 - ✓ Fueling
 - ✓ Outdoor vehicle storage
 - ✓ Locomotive sanding
 - ✓ Above ground liquid storage
 - ✓ Cold weather activities
 - ✓ Construction covering more than 5 acres
 - ✓ Landfills, land application sites, and open dumps
-

Plans for coverage under the MSGP required the submission of a notice of intent by March 28, 1996, and preparation of a Storm Water Pollution Prevention Plan (SWPPP) by September 25, 1996. Plans for coverage under the Baseline Industrial General Permit, the other permit option, required submission of a notice of intent by March 28, 1996, and implementation of a SWPPP by the same date.

Stormwater permits require that a variety of specific facility data be submitted for the estimation of storm runoff loads. Typical stormwater permit applications include:

- Site maps showing facility topography, drainage and discharge structures

- Drainage areas of stormwater outfalls
- Paved areas and buildings within each drainage area
- Materials loading and access area
- Each existing structural control measure to reduce pollutants in stormwater runoff

Other requirements may be, depending on the type of permit that applies.

- The estimation of impervious surfaces
- Certification that all outfalls have been tested or evaluated for presence of non-stormwater discharges
- Visual inspection of stormwater discharge at the facility (i.e., samples taken during storm events) may be required including color, odor, turbidity, floating solids, oil sheen or other obvious indicators of stormwater contamination

To see the regulations:

- 40 CFR 122.26: Stormwater permit regulations

Preventative Measures and Reporting Requirements For Releases: Spill Prevention Control and Countermeasure Plans and Spill Reporting

The CWA also requires specific contingency plans for petroleum products, such as oil, if they are stored in large quantities at a particular railroad. These spill prevention control and countermeasures plans, commonly called SPCC plans, are a preventative measure required by law. SPCC plans document the location of storage vessels, the types of containment, the dangers associated with a major release of material from the tanks, the types of emergency equipment available at each site, and procedures for notifying the appropriate regulatory and emergency agencies. No SPCC plan is considered complete until it has been reviewed and certified by a Registered Professional Engineer.

Oil or petroleum product storage in excess of specific quantities trigger submission of a SPCC plan:

- Oil products stored above ground in excess of 1,320 gallons (regardless of number or size of container)
- Oil products in one or more above-ground, 660-gallon or larger storage tanks
- Oil products stored in excess of 42,000 gallons in underground storage tanks

SPCC plans must be easily accessible in case of a spill. A properly displayed SPCC plan is presented in Figure 6 below.



Figure 6: Properly displayed SPCC plan

If any *discharge* events occur, local environmental representatives should be contacted immediately. The CWA regulation defines the term *discharge* to include any spilling, leaking, pumping, pouring, emitting, emptying, or dumping so that:

- Applicable water quality standards are violated; or,
- Oil causes a film or sheen upon the surface of the water, or causes discoloration of water or adjoining shore lines. In addition, the discharge causes a sludge or emulsion deposit beneath the surface of the water or upon adjoining shorelines.

There are two types of reportable discharges: oil releases and hazardous substance releases. Any releases or spills of oil into water, regardless of the amount of oil involved, must be

reported immediately to the National Response Center (NRC, 24 hour Hotline. 1-800-424-8802), even if only a sheen appears on the water surface. Spills into ditches, sewer lines, or other conduits to any body of surface water (pond, creek, stream, river, lake, ocean) must be reported. Hazardous material spills, on the other hand, must be above certain reportable quantities to merit reporting to the NRC (See 40 CFR 116 and 117 for more information on reportable quantities of hazardous substances). The amount triggering the reporting requirement varies from state to state. For example, in California only spills of hazardous substance greater than 42 gallons need be reported to the NRC, whereas Texas requires that all spills be reported to the NRC.

To see the regulations:

- 40 CFR 112: Oil Pollution Prevention Requirements

CWA Enforcement Provisions and Penalties

An increased emphasis on penalties as an enforcement tool was a major focus of Congress in the 1987 amendments to the CWA. Congress added new authority for assessment of administrative penalties and increased penalties for civil and criminal violations. Some penalties for CWA non-compliance include:

- Failure to Give Notice: \$10,000 fine and/or one year imprisonment;
- Penalties for Discharges: Persons who knowingly violate certain Clean Water Act requirements are subject to criminal penalties of up to \$50,000 and/or three years imprisonment. Anyone "who knows at that time that he thereby placed another person in imminent danger of death or serious bodily injury" is subject to criminal penalties of up to \$250,000 and/or 15 years imprisonment; or,
- Cleanup Obligations: The owner/operator of a facility is liable to the United States or a state for the cost of cleaning up a discharge of oil or hazardous substances and for damages resulting from injury or loss of natural resources (up to certain limits). There is no such liability for discharges caused solely by an act of God, an act of war, negligence on the part of the federal government, or the act or omission of a third party.

The Clean Air Act

Acronym: CAA (name is usually spoken fully as Clean Air Act)

What is the Clean Air Act? A History and General Overview of the Law

The Clean Air Act was passed to “protect and enhance” the nation’s air quality for the “public health and welfare” of U.S. citizens. The act is intended to protect citizens from health effects, damage to private property, as well as decreased agricultural crops and livestock production from air pollution. The original Clean Air Act (CAA) dates back to 1955; it is one of the nation’s oldest environmental laws. The CAA has been added to and changed a number of times, most recently in 1990. The 1990 amendments expanded the requirements of the CAA substantially to include measures designed to combat acid rain, the degradation of the ozone layer and other problems. The CAA is now often referred to as the CAAA to reflect the 1990 amendments. For the purposes of this document, the abbreviation CAA is used to refer to both the original legislation as well as the 1990 amendments.

The CAA is based on the National Ambient Air Quality Standards, a set of standards that designate acceptable quantities of certain pollutants in the air of a region. If the concentration of any of these air pollutants (ground-level ozone smog, carbon monoxide, particulates, sulfur dioxide, and oxides of nitrogen) is above the National Ambient Air Quality Standard levels, the area is considered “non-attainment” of required values and faces specific requirements under the CAA. Almost every major metropolitan area in the country is considered non-attainment for the ozone standard. States must prepare and implement a plan for achieving attainment by a specified date. The levels of these pollutants is reduced by New Source Performance Standards (NSPS) which set emission limits on specific industrial processes (e.g., petroleum refining). Air pollution can be caused in a variety of ways; industrial processes, boilers and incinerators, and motor vehicles may release hazardous chemicals or dust and ash into the air.

In addition to the ambient air quality standards above, the CAA regulates the release of chlorofluorocarbons (CFCs) and Asbestos-containing Materials (ACM) from railroad operations. CFCs are ozone depleting chemicals: they weaken the ability of the earth’s atmosphere that to guard against the harmful radiation that causes skin cancer, eye damage, and global warming. Asbestos is an insulating material widely used in the past for floor tiles, ceiling tiles, siding, thermal system insulation, and other applications where fire retardation was required or desirable. Asbestos fibers have been linked to serious adverse health effects when airborne asbestos fibers find their way into human lungs. Releases of asbestos-containing materials can occur during building renovation or demolition.

As is the case with other major environmental laws, the U.S. Environmental Protection Agency has primary responsibility for the implementation of the CAA, but has delegated this authority to state programs in many cases. State CAA requirements must be at least as stringent as the federal requirements and are often much more so. In addition, since the CAA is based on the National Ambient Air Quality Standards, your facility’s requirements will hinge on the air quality conditions of your area (i.e., the designation of your area as attainment or non-attainment of NAAQS standards). The requirements discussed below are federal level only and

are intended to provide a general picture of environmental compliance responsibilities under this law. *Your particular state may have additional requirements under its own CAA laws. In addition, the NAAQS designation of your particular air quality region will affect your compliance responsibilities. Contacting your local environmental agency representative is crucial to understanding your CAA requirements.* Your state's environmental officials are listed in Appendix A.

To see the regulations:

- 40 CFR 50: National Primary and Secondary Ambient Air Quality Standards
- 40 CFR 70: Permits
- 40 CFR 82: Ozone Depletion

How Does the CAA Apply to Railroad Operations?

The CAA sets up two major categories for air pollution regulation: mobile sources (e.g., automobiles, locomotives) and stationary sources (e.g., power boilers, solvent-based cleaning stations). Possible air pollution sources for the railroad industry include boilers, incinerators, forges, foundries, painting or refinishing operations, shop blasting and dust collection control systems, degreasers, and the filling and maintaining of fuel storage tanks.

The CAA regulations on chlorofluorocarbons (CFCs) and asbestos-containing materials also affect short line railroad operations. Equipment containing CFCs, such as refrigeration units or air conditioning systems, are common. In addition, many old railroad facilities have asbestos-containing materials in floor tiles, ceiling tiles, siding, or thermal system insulation.

Title II of the 1990 CAA amendments deals with "mobile sources" and seeks to phase in a new set of limits on pollution production (also known as air "emissions") between 1994 and 1998. If necessary, the EPA has the discretion to implement an additional round of mobile source emission limits in 2003.

General Federal CAA Requirements

The NAAQS designation of your particular air quality region will affect your compliance responsibilities under state and federal laws. Compliance responsibilities may change if processes are changed or the output of air pollutants is significantly increased.

Air Toxics

The 1990 CAA greatly expands U.S. EPA's control over air toxic pollutants and their emissions. The CAA regulates 189 hazardous air pollutants, requires the installation of control mechanisms to reduce toxic air emissions from specific equipment, and requires that a program to control accidental releases of toxic pollutants be established. In addition, it is unlawful for any person maintaining, servicing, repairing, or disposing of any appliance to knowingly release

CFCs Some air toxics potentially used at railroad facilities include solvent releases from painting and/or paint stripping operations and CFC releases from improperly disposed cooling equipment (such as refrigerators).

To see the regulations:

- 40 CFR 50: National Primary and Secondary Ambient Air Quality Standards

Mobile Sources

Because mobile sources are one of the primary contributors to air pollution, the CAA establishes pollution standards for new vehicles, including locomotives, in addition to regulating emissions from vehicles during various in-use operating conditions. *While there are currently no national locomotive emission standards, EPA is scheduled to issue a notice of proposed rule making concerning locomotive emissions in 1996.* Some regions have attempted to apply visible smoke standards to locomotives.

Air Quality Permitting

Large stationary sources of pollution are regulated by states, but operating permits are required for various railroad processes that are not exclusive to large or "major" facilities. These processes may include:

- Filling and maintaining fuel storage tanks (may be regulated for gasoline, but permitting is normally not required for diesel fuel storage due to its low volatility)
- Cleaning equipment for parts such as degreasers which use solvent materials
- Refinishing or painting rail cars in spray booths
- Operating a boiler or incinerator at the steam power house
- Shot blasting and dust collection control system.

Railroad facilities may also be required to install special equipment to abate the emissions, report material usage, and/or conduct various compliance tests.

To see the regulations:

- 40 CFR 70: Permit Requirements

Asbestos-Containing Materials (ACM)

A variety of environmental regulations pertain to the removal and disposal of ACM. Renovations or demolition operations involving ACM are regulated by the Clean Air Act's National Emission Standards for Hazardous Air Pollutants (NESHAPs). Asbestos abatement activities done in conjunction with demolition or renovation should be conducted only by trained asbestos abatement personnel. Personal protective equipment must be worn, per

Occupational Safety and Health Administration (OSHA) requirements (For more compliance information see Chapter II: Building Renovation/Demolition: Asbestos concerns).

CAA Enforcement Provisions and Penalties

Enforcement penalty information for civil, criminal, and field-issued penalties are described below. The enforcement penalties are, for the most part, directed at senior management personnel or corporate officers, but a staff member who willfully and knowingly violates a regulation that can lead to injury of others can also be convicted. Field penalties are those that are issued by an inspector who has dropped by unannounced for an inspection.

- Federal civil penalties: fines of up to \$25,000 per day per violation. These penalties also apply to violations of an air use permit, and violations for a state's attainment plan or federal regulation.
- Federal criminal penalties for negligence: fines as high as \$2,000 per day per violation and 5 years imprisonment.
- Federal criminal penalties for a knowing violation: fines as high as \$1,000,000 per day per violation and 15 years imprisonment.
- Field citation penalties: as high as \$5,000 per violation.

The Toxic Substances Control Act

Acronym: TSCA (pronounced, toss-kah)

What is TSCA? A History and General Overview of the Law

Congress enacted the Toxic Substances Control Act, or TSCA, to authorize the U.S. EPA to identify and control chemical substances that are distributed in the marketplace. The purpose was to protect the consumer public against unreasonable risk to health and to the environment. Originally passed in 1976 and subsequently amended, TSCA applies to the manufacturers, processors, importers, distributors, users, and disposers of chemical substances. The main substances regulated include: polychlorinated biphenyls (PCBs), asbestos-containing materials (ACMs), and chlorofluorocarbons (CFCs). CFCs and asbestos-containing materials are discussed in the Clean Air Act (CAA) portion of this chapter, PCBs are discussed below.

PCBs were first commercially produced in 1929 for use as a fire-resistant fluid in transformers, capacitors, and heat transfer and hydraulic equipment. The manufacture, distribution, processing, and new uses of PCBs were banned in 1978 due to their suspected carcinogenicity.

To see the regulations:

40 CFR 700-799

How Does TSCA Apply to Railroad Operations?

Short line railroad operations are most affected by TSCA because of electrical equipment, such as transformers, containing PCBs. The regulations require proper use, inspection, labeling and marking, recordkeeping, storage, reporting, transportation, management, and disposal of all equipment containing PCBs (For more compliance information See Chapter II, Engineering Operations: Transformers and Other Equipment Containing Insulating Fluids)

General Federal TSCA Requirements

The PCB regulations include a ban on the manufacture, processing, and distribution in commerce of PCBs, as well as requirements for proper use, storage, disposal, record keeping and marking. Regulations authorize the use of most electrical equipment containing PCBs for the remainder of their useful lives. Three categories for transformers containing PCBs were established in 1982:

- “Non-PCB transformers” contain PCBs in concentrations less than 50 ppm. These units are not regulated and have no restrictions on use, disposal, and servicing. They can be sold at the end of their useful service lives.
- “PCB-contaminated transformers” contain PCBs in concentration between 50 and 499 ppm. Although these units have no restrictions on in-service use, disposal of the insulating fluid is regulated.

TSCA

- “PCB transformers” contain 500 ppm PCB or greater. They are closely regulated and some are banned outright. PCB transformers in use require exterior labeling, periodic inspections, and reporting

For spills of PCBs containing 50 ppm or more, release reporting and spill clean-up requirements, other than those under TSCA, must be satisfied under the Clean Water Act and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund. Cleanup standards and reporting requirements exist for certain PCB spill situations: spills directly into surface waters, drinking water, sewers, grazing lands, and vegetable gardens.

TSCA Enforcement Provisions and Penalties

- Federal civil penalties: fines of up to \$25,000 per day per violation.
- Federal criminal penalties: fines of up to \$25,000 per day per violation and/or imprisonment for up to one year.

The Comprehensive Environmental Response, Compensation, and Liability Act

Acronym: CERCLA (pronounced, sir '-klah)

What is CERCLA? A History and General Overview of the Law

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also commonly known as "Superfund," became law in 1980 mainly in response to the public threat posed by the Love Canal site in Niagara Falls, NY. CERCLA was enacted to provide a comprehensive response to the problem of hazardous substance release. It got the name "Superfund" because Congress allocated several billion dollars to clean up sites that had been abandoned or that owners were unable or unwilling to clean up. The U.S. EPA maintains an inventory of over 29,000 sites where the presence of hazardous substances pose a potential threat to public health or the environment.

CERCLA is broader in scope than any other environmental statute. It covers all environmental media: both surface and ground water, soil, and air. In addition, unlike other environmental regulations, CERCLA can apply directly to any type of industrial, commercial, or non-commercial facility. It does not create a regulatory program, but rather provides authority and allocates responsibility for cleanup of contaminated soil, surface water, and ground water.

To see the regulations:

- 40 CFR 300 CERCLA and EPCRA regulations

How Does CERCLA Apply to Railroad Operations?

CERCLA affects short line railroads in several ways. Incidents must be immediately reported when any spill or release over the EPA Reportable Quantity (RQ):

- Is discovered, even if it was caused by current tenants, prior tenants, or prior land owners. Because a railroad company could be liable for the contamination, it is important to make sure that all on site chemical handling be done in an environmentally responsible manner, and that any property transaction has an environmental property audit
- Occurs on a railroad's property and an investigation and cleanup must begin
- Occurs during transportation. The National Response Team (the EPA and/or the Coast Guard) may go to the scene of the spill even if the release occurs in a rail yard, truck terminal, out on the right-of-way, or on the highway
- Occurs at a mechanical fixed facility like repair shops or engineering operations on the right-of-way

General Federal CERCLA Requirements

CERCLA regulates the identification, cleanup, and reporting of hazardous substance sites. The cleanup of a site, both short term removal and long term remediation, is done by either the EPA or the potentially responsible parties (PRPs). PRPs include a current facility or land owner/operator, the one at the time of disposal of the substance, the person who arranged for disposal, and the transporter.

In order to make PRPs liable, CERCLA imposes “strict, joint several and retroactive liability.” “Strict” means that a single person or organization may be held liable for cleanup, “Joint Several” means any one PRP can be held liable for all cleanup costs even though other parties are also responsible for the contamination; “Retroactive liability” means that a company is still liable for cleanup even if no law prohibited the burial of a substance at the time of disposal.

CERCLA Enforcement Provisions and Penalties

- Federal civil penalties: fines of up to \$25,000 per day per violation for the first violation and a second violation can be as high as \$75,000 per day.
- Federal criminal penalties: fines of up to \$25,000 per day per violation and/or imprisonment for up to one year for anyone who knowingly or willingly violates CERCLA’s notification requirements. A second conviction can mean fines up to \$50,000 and/or up to five years in prison.

The Emergency Planning and Community Right-to-Know Act

Acronym: EPCRA (pronounced, ep'-crah)

What is EPCRA? A History and General Overview of the Law

The Emergency Planning and Community Right-to-Know Act (EPCRA) was passed in 1984, and although it is also known as SARA (Superfund Amendments and Reauthorization Act) Title III, it is a free standing statute separate from the Superfund program. EPCRA's purpose is to encourage and support emergency planning efforts at state and local levels and provide communities and citizens with information about the chemicals being stored, used and produced within their communities.

To see the regulations:

- 40 CFR 300: CERCLA and EPCRA regulations

How Does EPCRA Apply to Railroad Operations?

All short line railroad with fixed facilities should maintain Material Safety Data Sheets (MSDSs) for the materials used or stored at the facility. Hardcopies should be kept at the facility's site or be available by computer or fax within the work shift.

General Federal EPCRA Requirements

EPCRA requires companies to identify their facilities to enforcement agencies and provide certain data about the chemicals used at those facilities in emergency situations and on a regular basis. EPCRA does not require the reporting of spills that are confined to the boundaries of a facility. It is, however, concerned with the following four types of reporting.

- **Emergency Release Notification from Fixed Facilities and Rolling Stock.** Immediate notification is required for the accidental release of any extremely hazardous substance, any CERCLA hazardous substance, or any chemical with a MSDS.
- **Notification of chemicals subject to the Occupational Safety and Health Act Hazard Communication Standard.**
- **Annual Emergency and Hazardous Chemical Inventory Reporting.** Facilities must submit an emergency and hazardous chemical inventory to state and local authorities.
- **Annual Toxic Chemical Release Reporting** which identifies the amounts of routine chemical emissions from all manufacturing facilities is required by the manufacturing industry, but is not currently required by the transportation industry.

EPCRA Enforcement Provisions and Penalties

- Federal civil penalties: fines of up to \$25,000 per day per violation for failure to identify a facility subject to EPCRA; provide information in response to a request from the local emergency planning committee; report accidental releases to all appropriate authorities, provide all reporting information required, notify the committee of any changes at the facility that affect the development of the emergency response plan.
- Federal criminal penalties: knowing and willful violation can result in fines of up to \$25,000 and/or up to two years in prison.

The Federal Insecticide, Fungicide, and Rodenticide Act

Acronym: FIFRA (pronounced, fif'-rah)

What is FIFRA? A History and General Overview of the Law

The Federal Insecticide, Fungicide, and Rodenticide Act, FIFRA, was enacted to protect the public from ineffective or dangerous products. FIFRA regulates the safe use of herbicides, pesticides and rodenticides by requiring manufactures to register their products as:

- General use, available for use by the general public
- Restricted use, available for use only by certified applicators

To see the regulations:

- 40 CFR 156: FIFRA regulations

How Does FIFRA Apply to Railroad Operations?

FIFRA regulations are applicable to short line railroad operations where herbicides are used to control weeds and brush, or when pesticides and rodenticide are used for pest control in company buildings. FIFRA can also apply to the application of field applied creosote when bridge timbers, or switch ties are installed.

General FIFRA Requirements

FIFRA requires registration and labeling of herbicides with instructions to ensure safe usage. Short line railroad operations should only apply herbicides, both general and restricted use, according to label instructions. Certification is required for use of restricted use herbicides. Railroads often use outside contractors to apply these products. The National Railroad Contractors Association is an organization comprised of railroad weed control contractors that provides training for restricted use herbicide applicators. Any handling and application of restricted or general use products by company personnel must comply with the manufacturer's instruction. Always follow product instructions.

FIFRA Enforcement Provisions and Penalties

- Federal civil penalties: commercial applicators may be fined up to \$5,000 for each offense under FIFRA. Private applicators may be fined up to \$1,000 for each offense
- Federal criminal penalties: commercial applicators may be fined up to \$25,000 or up to one year in prison, or both, for knowing violations. Private applicators may be fined up to \$1,000 or 30 days in prison, or both, for knowing violations.

Noise Control Act

Noise Control Act

How Do Noise Emission Standards Apply to Railroad Operations?

Noise Emission Standards apply to all locomotives and rail cars operated by a common carrier by railroad, or partly by water. These standards exempt steam locomotives.

To see the regulations:

- 49 CFR 201: Noise Emission Standards for Transportation Equipment, Interstate Rail Carriers

General Federal Noise Emission Standards Requirements

The noise level should be measured at a spot 30 meters from the geometric center of locomotives and rail cars, and from any receiving property location of retarder operations and car coupling operations:

Noise Emission Requirements Applicable to Short Line Railroads				
Type of Equipment	Operating Condition	Date Built	Max. Noise Level Moving/Idling	Effective Date
Locomotive	Operating singly or connected to a load cell.	Before 12/31/79	93/73 (dBA)	12/31/76
Locomotive	Operating singly or connected to a load cell.	After 12/31/79	87/70 (dBA)	12/31/76
Switcher locomotive	Operating singly or connected to a load cell.	Before 12/31/79	87/70 (dBA)	1/15/84
Switcher locomotive	Operating singly or connected to a load cell.	After 12/31/79	65 (dBA)	1/15/84
Locomotive	Operating under any condition of grade, load, acceleration or deceleration.	Before 12/31/79	96 (dBA)	1/15/84
Locomotive	Operating under any condition of grade, load, acceleration or deceleration.	After 12/31/79	90 (dBA)	1/15/84

Noise Emission Requirements Applicable to Short Line Railroads				
Type of Equipment	Operating Condition	Date Built	Max. Noise Level Moving/Idling	Effective Date
Switcher locomotive	Operating under any condition of grade, load, acceleration or deceleration.	Before 12/31/79	90 (dBA)	1/15/84
Switcher locomotive	Operating under any condition of grade, load, acceleration or deceleration.	After 12/31/79	65 (dBA)	1/15/84
Rail car	Operating singly or in combination with any other rail cars.	All	less than 75 km/h: 88 (dBA), greater than 75 km/h: 93 (dBA)	12/31/76
Retarder operation	Adjusted average sound level.	All	83 (dBA)	1/15/84
Car coupling operation	Adjusted average sound level.	All	92 (dBA)	1/15/84
Locomotive load cell	Test stand adjusted average sound level.	All	78 (dBA)	1/15/84
Locomotive load cell	A-weighted sound level from load cell at any receiving property location in a particular facility	All	65 (dBA)	1/15/84

Other Regulations

Other Regulations Potentially Affecting Railroad Operations

The following two laws also have environmentally-related compliance requirements for the short line railroad industry:

The Occupational Safety and Health Act

The Occupational Safety and Health Act (OSHA) has a variety of requirements designed to improve workplace safety. Environmentally related OSHA requirements include:

- Hazard communication (also called Worker Right-to-Know) laws which require worker training in chemical awareness and hazardous chemical spill detection
- Hazardous Waste Operations and Emergency Response (HAZWOPER) standards are comprehensive regulations governing emergency response to hazardous material releases. HAZWOPER standards require employers to develop written plans for hazardous material release response

Penalties for non-compliance with OSHA regulations can include penalties of up to \$7,000 for each initial violation and \$70,000 for each repeat violation.

To see the regulations:

- 29 CFR Part 1900-1999: OSHA Regulations

Department of Transportation Hazardous Materials Regulations

The federal regulations that apply to the transportation of hazardous materials in commerce are generally known as the Hazardous Materials Regulations (HMR). HMR provide for classification of materials, packaging, hazard communication, transportation and handling, and incident reporting. Many of these requirements focus on one primary issue, the integrity of the container holding the hazardous substance. If a hazardous substance spill occurs during transport, the HMR regulations are designed to determine why the container was breached and the spill occurred.

Civil penalties for HMR non-compliance can include fines up to \$10,000 per violation. Willful criminal violations could incur a fine of not more than \$25,000 or imprisonment for a term up to five years or could incur both of these for each offense.

To see the regulations:

- 49 CFR 171: HMR regulations

Reference List of Environmental Regulations Cited in This Chapter

Regulation	Citation
The Resource Conservation and Recovery Act (RCRA)	<ul style="list-style-type: none"> • 40 CFR 260-299 RCRA Regulations • 40 CFR 261: Identification and Listing of Hazardous Wastes • 40 CFR 261: Conditionally Exempt Small Quantity Generator Requirements • 40 CFR 262: Labeling Requirements • 40 CFR 265: Container requirements • 40 CFR 262.20: Uniform Hazardous Waste Manifest Information • 40 CFR 268: General Land Disposal Requirements • 40 CFR 268.7: Written Land Disposal Notification Requirements • 40 CFR 262.34: Release or Threat of Release Reporting • 40 CFR 261: Hazardous Waste Storage Requirements • 40 CFR 262.41: Biennial Reporting Requirements • 40 CFR 262.40: Document Retention Periods • 40 CFR 268.7: Document Retention; land disposal restriction notification • 40 CFR 279: Used Oil Regulations • 40 CFR 262.34: Training, preparedness, and emergency procedures • 40 CFR 280: Underground Storage Tank Requirements
The Clean Water Act (CWA)	<ul style="list-style-type: none"> • 40 CFR 110-122, 40 CFR 400-500: Clean Water Act and Effluent Guidelines • 40 CFR 122: National Pollutant Discharge Elimination System Permit Regulations • 40 CFR 122.26: Stormwater permit regulations • 40 CFR 112: Oil Pollution Prevention Requirements
The Clean Air Act (CAA)	<ul style="list-style-type: none"> • 40 CFR 50: National Primary and Secondary Ambient Air Quality Standards • 40 CFR 70: Permits • 40 CFR 82: Ozone Depletion
The Toxic Substances Control Act (TSCA)	<ul style="list-style-type: none"> • 40 CFR 700-799

References

Reference List of Environmental Regulations Cited in This Chapter	
Regulation	Citation
The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	<ul style="list-style-type: none">• 40 CFR 300: CERCLA and EPCRA Regulations
The Emergency Planning and Community Right-to-Know Act (EPCRA)	<ul style="list-style-type: none">• 40 CFR 300: CERCLA and EPCRA Regulations
The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)	<ul style="list-style-type: none">• 40 CFR 156: FIFRA Regulations
Noise Control Act	<ul style="list-style-type: none">• 49 CFR 201. Noise Emission Standards for Transportation Equipment, Interstate Rail Carriers
Other Regulations Potentially Affecting Railroad Operations	<ul style="list-style-type: none">• 29 CFR Part 1900-1999: OSHA Regulations• 49 CFR: HMR regulations

GLOSSARY OF TERMS

Acutely Hazardous Waste: Commercial chemical products and manufacturing intermediates having the generic names listed in 40 CFR 261.33; off-specification commercial chemical products and manufacturing chemical intermediates which, if they met specifications, would have the generic names listed; and any residue or contaminated soil, water, or other debris resulting from the cleanup of a spill of any of these substances.

Aquifer: A saturated water bearing formation of permeable rock, sand, or gravel.

Ambient Standards: Standards for the quality of outdoor air

Asbestos: A naturally occurring fibrous mineral used in buildings for its heat retarding properties that may cause serious respiratory problems if inhaled. CAA regulates removal and disposal.

Ballast: Crushed rock or stone used to make the roadbed for railroad tracks.

Caustic: Any substance which can burn, dissolve, corrode or eat away by chemical reaction.

CERCLA Hazardous Substances: There are hundreds of chemicals identified as CERCLA hazardous substances.

CFR: Code of Federal Regulations. A codification of the regulations published by federal governmental agencies.

Chlorofluorocarbons (CFCs): The chemical group found in refrigerants such as freon and in propellants for aerosol containers. These chemicals have been determined to be partially responsible for depletion of ozone levels in the upper atmosphere.

Civil Penalties: Monetary penalties which can be imposed on companies and individuals for violations of civil laws and regulations.

Clean Air Act (CAA): The federal law designed to improve air quality by regulating air pollution emissions from stationary and non-stationary sources. The regulation includes National Ambient Air Quality Standards (NAAQS) for specific pollutants.

Cleanup: Actions taken to deal with a release or threat of a hazardous substances release that could affect people or the environment. The term "cleanup" is sometimes used interchangeably with the terms "remedial action", "removal action", "response action", "remedy", "remediation", or "correction action".

Cleanup Operation: An operation in which hazardous substances are removed, contained, incinerated, neutralized, stabilized, cleared-up, or in any other manner processed or handled with the ultimate goal of making the site safer for people or the environment.

Clean Water Act (CWA): The purpose of this federal law is to restore and maintain the water quality of lakes, streams, and rivers. This goal is being pursued by controlling both point sources and non-point sources of discharge into surface water.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
The federal law established in 1980 to identify, investigate, and clean up sites that might release hazardous substances into the environment. It also established funding for cleanup projects (commonly called Superfund) and procedures for recovering any fund money expended. CERCLA also requires the reporting of spills and releases of hazardous substances.

Conditionally Exempt Small Quantity Generators: Hazardous waste producers who are exempt from RCRA regulations due to the small amounts generated and the low frequency of production. One must produce less than 100 kilograms of hazardous waste per month to qualify as a small quantity generator.

Container: Any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled, including drums, pails, buckets, and inner liners.

Corrosive: Material with a pH of less than 2.0 or greater than 12.5. A material capable of dissolving or wearing away steel at a rate greater than 0.25 inch per year.

Cradle-to-Grave: The Resource Conservation and Recovery Act requirement for management and tracing of hazardous waste is documented from the source of the waste (i.e., generator) through its transportation, treatment, storage, and eventual acceptance by a disposal facility.

Criminal Penalties: Penalties imposed for a willful and/or knowing violation of a criminal law. They include monetary fines for companies and individuals and jail time for individuals.

Department of Transportation (DOT): The federal agency that regulates the transport of hazardous materials under the Hazardous Materials Transportation Act. These materials include CERCLA hazardous substances and RCRA hazardous wastes.

Direct Discharges: One of five point sources regulated by the CWA (see Clean Water Act). These discharges, including wastewater and stormwater, go directly into natural receiving waters and are required to have NPDES (see national pollution discharge elimination system) permits.

Discharge: The accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, or dumping of waste into or on any land or water.

Disposal: The discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into any land or water so that such solid waste or hazardous waste, or any constituent thereof, enters the environment, is emitted into the air, or is discharged into any waters, including ground waters.

Disposal Facility: A facility or part of facility at which solid or hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure.

Effluent: Any gaseous, solid, or liquid waste material that is released into the environment.

Emergency Response: A response effort by employees from outside the immediate release area or by other designated responders (i.e., mutual-aid groups, local fire departments, etc.) to an occurrence which results, or is likely to result, in an uncontrolled release of a hazardous substance. Responses to incidental releases of hazardous substances which can be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate release area, or by maintenance personnel are not considered to be emergency responses within the scope of the OSHA HAZWOPER standard. Responses to releases of hazardous substances involving no potential safety or health hazard (i.e., fire, explosion, or chemical exposure) are not considered to be emergency responses.

Emergency Planning and Community Right-to-Know Act (EPCRA): The federal law requiring corporate disclosure to local communities about the chemicals used by the company. It also requires the notification of certain spills.

Environmental Protection Agency (EPA): The federal regulatory agency in charge of administering and enforcing various federal environmental laws.

EPA Hazardous Waste Number: The number assigned by EPA to each hazardous waste listed in RCRA's regulations and to each hazardous waste characteristic identified in RCRA's regulations.

EPA ID Number: The identification number assigned by EPA to each hazardous waste generator, transporter, and treatment, storage, or disposal facility.

EPA Region: The states and territories found in any one of ten regions, such as Region 4 - Tennessee, Kentucky, North Carolina, South Carolina, Georgia, Florida, Alabama, and Mississippi.

Erosion: The process of being worn away or deteriorated by wind or water.

Evacuation: A personnel or population protection strategy that provides for the orderly movement of people away from an actual or potential hazard.

Facility: All buildings, structures, equipment, and other stationary items that are located on a single site or on continuous or adjacent sites and that are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with, such person). Under certain circumstances, a facility can include rolling stock and other transport vehicles.

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA): The federal law which regulates the use of pest and growth killing products and establishes requirements for labeling, warnings, registration, and use of these products.

Federal Railroad Administration: The agency within the Department of Transportation in charge of enforcing railroad safety regulations for railroads.

Fire Hazards: Hazardous chemicals, including flammable chemicals, that are liable to cause fire through friction, absorption, spontaneous chemical changes, retained heat, or which can be ignited readily and burn vigorously and persistently, combustible liquids having flash points at or above 90° F but below 100 °F; flammable liquids with flash points below 100 °F; pyrophoric chemicals that ignite spontaneously in air at temperatures of 130 °F or below; and oxidizers that can promote combustion in other materials, causing fire either by themselves or through the release of oxygen or other gases.

Freeboard: The vertical distance from the normal water surface to the top of the confining wall

Friable Asbestos Material: Any material that contains more than one percent asbestos by weight, and can be crumbled, pulverized, or reduced to powder by hand pressure.

Fugitive Emissions: Air emissions not normally vented through a stack, chimney, vent, or equivalent opening; includes emissions from ponds, lagoons, landfills, and piles of stored materials.

General Use Pesticides: Pesticides that may be applied by non-certified applicators.

Generator of Hazardous Waste: Party that produces hazardous waste. Generators are classified by how much hazardous waste they produce in a given time period. In general, there are three classes of waste generators: conditionally exempt generators, small quantity generators, and large quantity generators. The generator is required to determine if a waste is hazardous. If the waste is hazardous, the generator must apply for and obtain an EPA ID number before it can transport it to an approved treatment, storage, and disposal facility. The generator must also use a hazardous waste manifest to track the hazardous waste, to package and label the hazardous waste, and to keep records of its shipments for three years.

Ground Water: Water below the land surface in a zone of saturation.

Hazard: A circumstance or condition that can do harm. Hazards are categorized into four groups: biological, chemical, radiation, and physical.

Hazard Classes: These are descriptive terms prescribed by the Department of Transportation to categorize the nature of DOT regulated materials. There are nine numeric classes and two word classes as follows: Class 1 (explosives), Class 2 (gases), Class 3 (flammable liquids), Class 4 (flammable solids & substances), Class 5 (oxidizing substances), Class 6 (poisonous & infectious substances), Class 7 (radioactive), Class 8 (corrosive), Class 9 (miscellaneous substances), and Combustible Liquids, ORM-D (consumer commodities).

Hazardous: Posing a substantial risk to health and safety.

Hazardous Material: A substance designated by the Department of Transportation as posing a potential hazard when transported. See 49 C.F.R. Section 171.101 for a list of DOT hazardous materials.

Hazardous Substance: Any hazardous substance designated under the CWA; any hazardous element, compound, mixture, solution or substance designated under CERCLA; any hazardous waste having characteristics identified or listed under RCRA; any toxic pollutant listed under the CWA; any hazardous air pollutant listed under the CAA, and any imminently hazardous chemical substance or mixture under TSCA.

Hazardous Waste: A solid waste material that may cause or significantly contribute to serious illness or death or that may pose a substantial threat to human health or the environment if not managed properly, and which includes liquids, semisolids, and compressed gases. Hazardous wastes are subject to manifest reporting requirements. A material is considered a hazardous waste under RCRA if it meets one of the following conditions:

- It is ignitable, corrosive, reactive, or toxic
- The material has been listed as a hazardous waste by regulations
- It is a mixture of a listed hazardous waste and a non-hazardous waste

Hazmat: A contraction of Hazardous Materials.

Ignitable: Material that has a flash point less than 140 °F, is combustible through friction, is combustible through absorption of moisture, or can spontaneously combust.

Incident: A release or potential release of a hazardous material, substance, or waste into the environment.

Indirect Discharge: A discharge which goes to a POTW (see Publicly Owned Treatment Works). Indirect discharges do not need a NPDES (see National Pollution Discharge Elimination System) permit but must comply with the POTW pretreatment standards.

Indirect Point Source Discharges: Discharges by industries of pollutants indirectly into U.S. waters through publicly owned treatment works (POTWs).

Influent: Wastewater or other raw or partially treated liquid flowing into a basin, treatment process, or treatment plant.

Land Disposal: Includes, but is not limited to, placement of soil in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, underground mine or cave, or concrete vault or bunker intended for disposal purposes. Land disposal facilities are a subset of Treatment, Storage, and Disposal (TSD) facilities. Groundwater monitoring is required at all land disposal facilities. Waste material can only be disposed of at a permitted facility.

Landfill: A disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a land treatment facility, a surface impoundment, or an injection well.

Large Quantity Generators: One of three classes of hazardous waste generators under RCRA producing 1,000 kilograms or more of hazardous waste in one calendar month at a given location

Listed Waste. Wastes listed as hazardous under 40 C.F.R. Part 261. A waste is listed as a hazardous waste based on the process from which the waste was generated and/or the constituents found in the waste.

Local Emergency Planning Committee (LEPC): A local community group, including police and fire departments, which must be notified in the event of an accidental release at or above the threshold reportable amount of an extremely hazardous substances, a CERCLA substance, or a hazardous material subject to the OSHA Hazard Communication Standard.

Major Stationary Source: Any stationary source that emits or has the potential to emit 100 tons per year or more of any air pollutant.

Manifest: The “cradle-to-grave” paperwork recording a hazardous waste's movement from its generation through final storage or disposal. It must be signed by all parties except intermediate rail carriers.

Material Safety Data Sheets (MSDS): Information sheets which provide workers with details on the health and physical hazards of chemicals to which they may be exposed in the workplace.

Milligrams per Kilogram (mg/kg): Weight of a substance, measured in milligrams, contained in a weight of the total material, measured in kilograms. A concentration used to measure solid materials such as contamination in soil.

Milligrams per Liter (mg/l): Weight of a substance, measured in milligrams, contained in a volume of solution measured in liters. A concentration used for liquid substances.

Monitoring: The process of measuring certain environmental parameters on a real-time basis for spatial and time variations. For example, air monitoring may be conducted with direct reading instruments to indicate relative changes in air contaminant concentrations at various times.

National Ambient Air Quality Standards (NAAQS): Standards established by the Clean Air Act for air quality of an area in terms of allowable levels of specific pollutants.

National Emission Standards for Hazardous Air Pollutants (NESHAP): The EPA regulations which govern specific processes which could possibly emit certain hazardous pollutants such as asbestos into the air. A component of the Clean Air Act.

National Pollution Discharge Elimination System (NPDES): A permitting system under the CWA, established for regulating direct discharges of wastewater from industries and municipalities into surface waters of the United States.

National Priority List (NPL): The prioritized list required by CERCLA of abandoned or uncontrolled hazardous waste sites

National Response Center: The federal agency which must be notified immediately of releases of hazardous substances in excess of their reportable quantities and hazardous materials (under certain circumstances).

New Source Performance Standards (NSPS): Standards established by the EPA under the CAA for new, modified, or reconstructed operations which emit air pollutants.

New Underground Storage Tanks (New USTs): Tanks installed after December 22, 1988, which are used to contain regulated hazardous substances or oil.

Nonattainment: The status of an area that is determined to exceed any national ambient air quality standard for a particular pollutant.

Oil: Oil of any kind or in any form, including but not limited to petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes.

On-site: The same or geographically contiguous property which may be divided by public or private right-of-way, provided the entrance and exit between the properties is at a crossroads intersection and access is by crossing, as opposed to going along, the right-of-way. However, non-contiguous properties owned by the same person but connected by a right-of-way which he or she controls and to which the public does not have access are also considered on-site properties.

Operator: The person responsible for the overall operation of a facility.

Occupational Safety and Health Administration (OSHA): A federal agency which protects worker health and safety under the Occupational Safety and Health Act and plays an important role in environmental issues such as chemical exposure in the workplace. OSHA shares jurisdiction over railroad workplace health and safety with the DOT.

Outfall: The mouth of a drain or sewer which flows directly into surface water.

Owner: The person who owns a facility or part of a facility.

Parts per Million (ppm): A standard or measurement for concentrations of pollutants. A volume/volume ratio usually used for airborne concentrations of gases or vapors, for concentrations of chemicals in water or concentrations of chemicals in soil.

Permit: A written document issued by the government that establishes standards for the pollution limits of water or air or for the handling of hazardous waste.

Pesticide: Any substance or mixture of substances intended to prevent, destroy, or repel pests

pH: A measure of alkalinity or acidity on a scale whose values range from 0 to 14 with 7 representing neutral. Numbers less than 7 correspond to increasing acidity. Numbers greater than 7 correspond to increasing alkalinity.

Point Source Discharges: Any point from which pollutants may be discharged into water, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feed operation, or vessel or other floating craft, from which pollutants are or may be discharged into waters.

Pollutant or Contaminant: Any element, substance, compound, or mixture which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingesting through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions, or physical deformation in such organisms or their offspring. It presents an imminent and substantial danger to public health or welfare.

Pollution Prevention: Any source reduction or recycling activity that results in the reduction of total volume of hazardous waste, reduction of toxicity of hazardous waste, or both, as long as the reduction is consistent with the goal of minimizing present and future risks to public health and the environment. Transfer of hazardous constituents from one environmental medium to another does not constitute waste minimization (See waste minimization).

Polychlorinated biphenyls (PCBs): A hazardous chemical once widely used in electrical transformer oil and now subject to a manufacturing ban and use restrictions.

Potentially Responsible Party: See PRP.

Preliminary Assessment/Site Investigation (PA/SI): The first phase of a site investigation for possible chemical contamination. It consists of a record search, investigation of prior site uses, on-site inspection, and possible site sampling to determine if a potential threat exists.

PRP: Potentially Responsible Party under CERCLA who is subject to paying cleanup costs. PRPs include both individuals and organizations who:

- Generate hazardous substances.
- Transport hazardous substances and select the disposal site.
- Arrange for the transportation and disposal of hazardous substances.
- Own/operate treatment, storage, or disposal facilities or property at the time of disposal.
- Currently own/operate property that is contaminated.

Publicly Owned Treatment Works (POTW): Municipal sewage treatment plant.

Regulated Material: A substance or material that is subject to regulations set forth by the EPA, Department of Transportation, or any other federal and/or state agency.

Releases: Defined by federal and most state laws as any spilling, leaking, pouring, dumping, emitting, discharging, injecting, escaping, leaching, or disposing of hazardous wastes or hazardous substances into the environment. This includes the abandonment of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant. The term "release" does not include releases which result in exposure to persons solely within a workplace, with respect to a claim which such persons may assert against the employer of such persons

Reportable Quantity (RQ): The minimum quantity of a CERCLA hazardous substance or EPCRA extremely hazardous substance which is reportable. A release equal to or greater than the RQ within a 24-hour period must be reported to the appropriate authorities.

Resource Conservation and Recovery Act (RCRA): The federal act which regulates the management of hazardous waste from the point of generation through transport, storage, and disposal. It also regulates underground storage tanks.

Risk: The probability that a hazard will result in an unwanted event.

SARA Title III: That part of SARA, now known as EPCRA (Emergency Planning and Community Right-to-Know Act) which regulates emergency response plans, community right-to-know issues, and chemical release reporting.

Safe Drinking Water Act (SDWA): The federal act which deals with the quality of treated drinking water. Regulations developed by EPA under authority of this act include drinking water standards.

Sedimentation: The act or process of depositing sediment.

Site Inspection: The collection of information from a Superfund site to determine the extent and severity of hazards posed by the site. It follows and is more extensive than a preliminary assessment.

Sludge: A solid, semi-solid, or liquid material produced by the process of settling or sinking caused by gravity. Sludges are generally waste products and are commonly generated by municipal and industrial water treatment processes and air pollution control processes. Sludges also occur in process tanks where liquids are stored. Sludges must be tested to determine if they are hazardous wastes.

Small Quantity Generators (SQGs): One of the three classes of hazardous waste generators under RCRA. SQGs produce between 100 and 1,000 kilograms of hazardous waste or less than 1 kilogram of acutely hazardous waste per calendar month at a given location.

Soil and Groundwater Analysis: Tests used to determine the presence of substance contamination and concentration levels. The analysis may involve soil borings and the installation of test pits and/or monitoring wells.

Solid Waste: Any garbage, refuse, sludge, or other waste materials not excluded by definition. Exclusions include domestic sewage and any mixture of other wastes that pass through a sewer system to a publicly owned treatment works (POTW); industrial wastewater discharges that are point source discharges subject to regulation under the Clean Water Act; irrigation return flows; nuclear materials defined by the Atomic Energy Act; and "in situ" or "in position" mining materials. Note that wastewaters being collected, stored, or treated before discharge and sludges generated by wastewater treatment are not excluded. EPA defines hazardous waste as a subset of solid waste.

Solvent: Any substance that can dissolve another substance. The term is most often used to mean petroleum-based solvents, capable of dissolving greases, oils, tars, and asphalts. Many petroleum-based solvents are volatile, flammable, may be hazardous, and may be regulated as an air pollutant. Used solvents on disposal (even if recycled) must be manifested as a hazardous waste.

Source Standards: Standards for emission levels at the source or point of emission.

Special Waste: A type of solid waste which is not hazardous but requires more care than a regular solid waste and may require special disposal procedures. Examples include: certain sludges, asbestos containing waste materials, and oil waste.

Spill Prevention, Control, and Countermeasure Plan (SPCC): The plan required by the CWA for any facility located in proximity of navigable waters and which stores oil products in containers of any size above ground in excess of 1,320 gallons, in one above-ground tank of 660 gallons or more, or in excess of 42,000 gallons in underground tanks. Effective March 7, 1993, SPCC requirements also apply to storage of used oil.

State Emergency Response Commission (SERC): The state agency which must be notified in the event of an accidental release of an extremely hazardous substance, a CERCLA hazardous substance, or a chemical with an MSDS above the chemical's threshold planning quantity (TPQ) or its reportable quantity (RQ).

Stationary Source: Any building, structure, facility, or installation that emits or may emit any air pollutant.

Storage: The holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere. Facilities are required to have a RCRA permit for storage of hazardous waste for more than 90 days; storage for less than 90 days does not require a RCRA permit. Treatment or disposal facilities must be permitted.

Superfund Amendments and Reauthorization Act (SARA): The amendments to CERCLA which increased available funds for site cleanups, added cleanup standards, and required hazardous waste operations training for site workers and emergency response personnel.

Superfund: The common name for CERCLA. It also refers to the fund that is to be used for cleaning up hazardous substance sites.

Toxic Substances Control Act (TSCA): The federal law designed to evaluate the human health and environmental effects of all chemical substances entering the U.S. market, to establish an inventory of existing chemicals, and to regulate the use and disposal of EPA-listed toxic substances.

Toxicity Characteristic Leaching Procedure (TCLP): A physical/chemical analytical procedure used to determine if a substance is classified as a hazardous waste. If the test results of a solid waste exceed any of the limits prescribed for 39 specific contaminants, the waste is deemed to be a hazardous waste. (The other three tests are corrosiveness, ignitability, and reactivity.)

Transporter: Party that moves or transports hazardous waste. Transporters of hazardous waste must properly manifest and record movement as part of "cradle-to-grave" tracking required by RCRA. In addition, transporters must follow Department of Transportation (DOT) Hazardous Materials regulations and must immediately notify the appropriate officials if a release or incident occurs. Transporters are responsible for undertaking emergency response to any accident that occurs during transportation.

Transporter of Hazardous Waste: Any person or company that moves hazardous waste by truck, rail, boat, or plane and has received an EPA hazardous waste transporter ID number. Some states also require transporter permits. On-site movement of hazardous waste does not apply.

Treatment: Any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste to neutralize such waste, to recover energy or material resources from the waste, or to render such waste non-hazardous, safer to transport, store or dispose of, or amenable to recovery, storage, or reduction in volume.

Treatment, Storage, Disposal Facilities (TSDs): Usually refers to off-site facilities where untreated hazardous waste can be taken for treatment, storage, and/or disposal. Subject to RCRA requirements, TSD facilities complete the "cradle-to-grave" cycle by continuing recordkeeping requirements. There are many complex rules for facility operations and training of employees.

Underground Storage Tank (UST): Regulated by the federal government under the SARA amendments and by individual states under state programs. A UST is a tank, including any underground pipes, which contains or used to contain regulated hazardous substances or petroleum products and has at least 10% of its volume beneath the surface of the ground.

Used Oil: Any oil that has been refined from crude oil or any synthetic oil that has been used and as a result of that use is contaminated by physical or chemical impurities. Used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste and must be managed under the EPA's used oil regulations

Waste Minimization: Generators and TSD facilities operating under RCRA permits are required to certify annually that they have waste minimization plans in place and that the plans are being implemented at their facilities.

Waste Pile: Any non-containerized accumulation of solid, non-flowing hazardous waste that is used for treatment or storage.

Waters of the United States: (1) Navigable waters; waters subject to tidal action shoreward to the mean high water mark and currently used or may be used to transport goods moving in interstate or foreign commerce, including oceans, coastal and inland waters, lakes, rivers, and streams that are navigable; (2) Tributaries of navigable waters; (3) Wetlands, including those adjacent to waters of the United States as defined above; and (4) Surface waters.

APPENDIX A: TELEPHONE CONTACTS

The following five tables contain telephone contacts to help you determine your specific environmental compliance responsibilities. The first table: **State Environmental Agency Contacts**, contains the names, addresses, and telephone numbers of contacts in the water and air offices of your state's environmental agency. The second and third tables contain the names and phone numbers of EPA Regional office contacts (wondering what's the difference? See section below) The second table, **EPA Regions and Regional Office Headquarters**, contains the phone numbers and addresses of Regional headquarters. The regional headquarters general phone numbers can refer you to regional contacts for general environmental compliance information. The third table, **EPA Regional Contacts**, contains specific contacts at the regional level for specific compliance information. The fourth table contains federal **Environmental Protection Agency Hotlines**. These Hotline numbers are staffed by experts in federal environmental laws. These federal experts may not be able to help you understand the specifics of your state or local environmental requirements, but will be able to answer your general questions. The fifth table presents **Federal Railroad Administration Regional Offices** and associated contact information. These FRA contacts can be used for information on DOT railroad regulations not covered in this handbook as well as for railroad-related worker health and safety issues.

In all cases, these numbers should be considered a starting point for your discussions with state and local officials. If the environmental agency representatives at the other end of the line cannot help with your specific question, they should be able to refer you to someone who can. Once you have identified a person(s) who can help you with your environmental compliance questions, enter their name and number in the blank telephone list section at the end of this appendix for future reference.

WHAT'S THE DIFFERENCE BETWEEN A STATE AND REGIONAL AGENCY CONTACT?

The federal EPA, while headquartered in Washington DC, has ten regional offices across the U.S. These regional offices oversee state programs that are not run by state or local environmental agencies, conduct inspections, and cooperate with federal, state and local agencies, as well as with industry, academic, institutions, and other private groups, to ensure that regional needs are addressed and that federal environmental laws are upheld. EPA regional offices should be called for general information on environmental compliance and for potential leads on state and local contacts in your area.

Your state also has its own environmental protection agency. Your state-level agency may have responsibility for implementing and enforcing environmental regulations under many federal laws. For example, authorized state agencies may be responsible for issuing permits under the Clean Water Act or Clean Air Act and may conduct enforcement actions. In many cases, your state's environmental laws will have stricter requirements than the federal

laws discussed in this handbook. Call your state and local environmental representatives for information on the specific requirements of your state's environmental laws

Contact your state's environmental agency to determine your specific environmental compliance requirements. The phone numbers below are starting points for your discussions with these state agencies. The first person you speak with will probably not be able to answer your question. When you eventually are connected to someone with relevant information, enter their name and phone number into the contact list at the end of this section for future reference.

State Environmental Agency Contacts		
State	Water	Air
Alabama	Charles Horn, Chief Water Division Dept. of Environmental Management 1751 Congressman Dickenson Drive Montgomery, AL 36130 334-271-7823 Fax: 334-670-5612	Richard E. Grusnick, Chief Air Division Dept. of Environmental Management 1751 Cong. W.L. Dickinson Drive Montgomery, AL 36130 334-271-7861 Fax: 334-270-5612
Alaska	Keith Kelton, Director Division of Facility Construction and Operation 410 Willoughby Avenue Juneau, AK 99801 907-465-5180 Fax: 907-465-5177	Leonard D. Verrelli, Chief Air Quality Management Section Dept. of Environmental Conservation 410 Willoughby Avenue, Suite 105 Juneau, AK 99801-1795 907-465-5100 Fax: 907-465-5129
Arizona	Kim Maceachern, Director Water Quality Division Dept. of Environmental Quality 3033 N. Central, 3rd Floor Phoenix, AZ 85012 602-207-2306 Fax: 602-207-4528	Nancy Wrona, Director Air Quality Division Department of Environmental Quality 3003 North Central Avenue, 5th Floor Phoenix, AZ 85012 602-207-2308 Fax: 602-207-2366
Arkansas	Chuck Bennett, Chief Water Division Dept. of Pollution Control and Ecology 8001 National Drive P.O. Box 8913 Little Rock, AR 72219-8913 501-570-2114 Fax: 501-562-4632	James B. Jones, Chief Air Division Dept. of Pollution Control and Ecology 8001 National Drive P.O. Box 8913 Little Rock, AR 72219-8913 501-562-7444 Fax: 501-562-4632
California	Mary Jane Forester, Board Member State Water Resources Control Board P.O. Box 100 Sacramento, CA 95812-0100 916-657-1627 Fax: 916-657-0932	James D. Boyd, Executive Officer Air Resources Board P.O. Box 2815 Sacramento, CA 95812 916-445-4383 Fax: 916-322-6003
Colorado	David Holm, Director Water Quality Control Division Department of Health WGCD-DO-B2, 4300 Cherry Creek Drive South Denver, CO 80222-1530 303-692-3508 Fax: 303-782-0390	Tom Getz, Division Director Air Pollution Control Division B-1 Department of Health 4300 Cherry Creek Drive South Denver, CO 80222-1530 303-692-3100 Fax: 303-782-5943

State Environmental Agency Contacts		
State	Water	Air
Connecticut	Robert Moore, Deputy Commissioner Dept. of Environmental Protection 79 Elm Street Hartford, CT 06106-5127 203-424-3002 Fax: 203-566-7932	Carmine DiBattista Bureau of Air Management Dept. of Environmental Protection 79 Elm Street Hartford, CT 06106 203-424-3026 Fax: 203-566-6144
Delaware	Robert J. Zimmerman, Administrator Division of Water Resources 89 Kings Highway P.O. Box 1401 Dover, DE 19903 302-739-5726 Fax: 302-739-3491	Carryl Tyler, Administrator Air Quality Management Section Division of Air and Waste Management Dept. of Natural Resources and Environmental Control 89 Kings Highway P.O. Box 1401 Dover, DE 19903 302-739-4791 Fax: 302-739-3106
District of Columbia	James R. Collier, Program Manager Water Resources Management Division Dept. of Consumer and Regulatory Affairs 2100 Martin Luther King, Jr. Ave., SE Suite 203 Washington, DC 20020 202-645-6601 ext. 3040 Fax: 202-645-6622	Ferial Bishop, Acting Program Manager Air Resources Management Division Environmental Regulation Administration Dept. of Consumer and Regulatory Affairs 2100 Martin Luther King Ave., SE Washington, DC 20020 202-645-6093 Fax: 202-645-6102
Florida	Don Berryhill, Bureau Chief Bureau of Water Facility Funding Dept. of Environmental Protection 2600 Blair Stone Road Tallahassee, FL 32399-2400 904-488-8163 Fax: 904-921-2769 berryhill_bar_D@dep.state.fl.us	Howard Rhodes, Division Director Air Resources Management Department of Environmental Protection 2600 Blair Stone Road Mail Station 5500 Tallahassee, FL 32399-2400 904-488-0114 Fax: 904-922-6979
Georgia	Alan Hallum, Branch Chief Environmental Protection Division GA Dept. of Natural Resources Floyd Tower East, Suite 1058 205 Butler Street, SE Atlanta, GA 30334 404-656-4708 Fax: 404-657-7379	Ronald Methier, Chief Air Protection Branch Environmental Protection Division Department of Natural Resources 4244 International Parkway Suite 120 Atlanta, GA 30354 404-363-7000 Fax: 404-363-7100

State Environmental Agency Contacts		
State	Water	Air
Hawaii	Thomas E. Arizumi, Chief Environmental Management Division 919 Ala Moana Boulevard Room 300 Honolulu, HI 96814-4912 808-586-4304 Fax: 808-586-4352	Wilfred Nagamine, Chief Clean Air Branch Department of Health P.O. Box 3378 Honolulu, HI 96801 808-586-4200 Fax: 808-586-3983
Idaho	Dr. Walton Poole, Assistant Administrator Community Programs Division of Environmental Quality 1410 N. Hilton - State House Mall Boise, ID 83720 208-334-0537 Fax: 208-334-0576	Orville Green, Assistant Administrator Permits and Enforcement Division of Environmental Quality 1410 N. Hilton, 3rd Floor Boise, ID 83706 208-334-5898 Fax: 208-334-0417
Illinois	Jim Park, Chief Bureau of Water Environmental Protection Agency P.O. Box 19276 Springfield, IL 62794-9276 217-782-1654 Fax: 217-785-1225	Bharat Mathur, Chief Bureau of Air Environmental Protection Agency 2200 Churchill Road P.O. Box 19276 Springfield, IL 62794-9276 217-785-4140 Fax: 217-782-2465
Indiana	Tim Method, Assistant Commissioner Office of Water Management IN Dept. of Environmental Management 100 North Senate P.O. Box 6015 Indianapolis, IN 46206-6015 317-232-8164 Fax: 317-232-6647	Timothy J. Method, Assist. Commissioner Office of Air Management Department of Environmental Management 105 South Meridian Street P.O. Box 6015 100 North Senate Indianapolis, IN 46206-6015 317-232-8384 Fax: 317-232-5539
Iowa	Allan Stokes, Division Administrator Environmental Protection Division Wallace State Office Building, 900 E. Grand Avenue Des Moines, IA 50319 515-281-6284 Fax: 515-281-8895	Pete Hamlin, Chief Air Quality Bureau Department of Natural Resources Henry Wallace Building 900 East Grand Des Moines, IA 50319 515-281-8852 Fax: 515-281-8895
Kansas	Karl W. Mueledner, Director Bureau of Water Dept. of Health and Environment Building #283, Forbes Field Topeka, KS 66620 913-296-5500 Fax: 913-296-5509	John C. Irwin, Director Bureau of Air and Radiation Dept. of Health and Environment Forbes Field, Building 740 Topeka, KS 66620 913-296-1593 Fax: 913-296-1592

State Environmental Agency Contacts		
State	Water	Air
Kentucky	Jack A. Wilson, Director Division of Water Frankfort Office Park 14 Reilly Road Frankfort, KY 40601 502-564-3410 Fax: 502-564-4245	John E. Hornback, Division Director Division for Air Quality 803 Schenkel Lane Frankfort, KY 40601 502-573-3382 Fax: 502-573-3787
Louisiana	Dale Givens, Assistant Secretary Office of Water Resources Dept. of Environmental Quality, 3rd Floor P.O. Box 82215 Baton Rouge, LA 70884-2215 504-765-0491 Fax: 504-765-2725 Dale_G@DEQ.State.LA.US	Gustave Von Bodungen, Assist. Secretary Office of Air Quality and Radiation Protection Department of Environmental Quality P.O. Box 82135 Baton Rouge, LA 70884-2135 504-765-0219 Fax: 504-765-0222
Maine	Martha Kirkpatrick Bureau of Land and Water Quality Dept. of Environmental Protection State House #17 Augusta, ME 04333 207-287-3901 Fax: 207-287-7826	Dennis L. Keschl, Director Bureau of Air Quality Control Department of Environmental Protection State House, Station 17 Augusta, ME 04333 207-287-2437 Fax: 207-287-7641
Maryland	J.L. Hearn, Director Water Management Administration 2500 Broening Highway, 1st Floor Baltimore, MD 21224 410-631-3567 Fax: 410-631-4894	Merrylin Zaw-Mon, Director Air and Radiation Management Administration 2500 Broening Highway Baltimore, MD 21224 410-631-3255 Fax: 410-631-3202
Massachusetts	Brian Donohoe, Deputy Regional Director Dept. of Environmental Protection Southeast Region 20 Riverside Drive Lakeville, MA 02347 508-946-2785 Fax: 508-947-6557	Barbara A. Kwetz, Director Division of Air Quality Control Department of Environmental Protection One Winter Street, 7th Floor Boston, MA 02108 617-292-5630 Fax: 617-556-1049
Michigan	Robert Miller, Chief Surface Water Quality Division Dept. of Natural Resources 300 S. Washington Square P.O. Box 30273 Lansing, MI 48909-7773 517-373-1949 Fax: 517-373-9958	Dennis Drake, Acting Chief Air Quality Division Department of Natural Resources P.O. Box 30260 Lansing, MI 48909-7760 517-373-7023 Fax: 517-373-1265

State Environmental Agency Contacts

State	Water	Air
Minnesota	Patricia M. Burke, Manager Water Quality Division MN Pollution Control Agency 520 Lafayette Road St. Paul, MN 55155 612-296-7202 Fax: 612-297-8683	Lisa J. Thorvig, Manager Air Quality Division Pollution Control Agency 520 Lafayette Road St. Paul, MN 55155 612-296-7331 Fax: 612-297-7709
Mississippi	Barry Royals, Chief Surface Water Division MS Dept. of Environmental Quality P.O. Box 10385-0389 Jackson, MS 39289-0385 601-961-5102 Fax: 601-961-5376	Dwight Wylie, Chief Air Division Office of Pollution Control Department of Environmental Quality P.O. Box 10385 Jackson, MS 39289 601-961-5171 Fax: 601-354-6612
Missouri	Ed Knight, Director MO Clean Water Commission Dept. of Natural Resources P.O. Box 176 Jefferson City, MO 65102 314-751-6721 Fax: 314-751-9396	Roger Randolph, Staff Director Air Pollution Control Program Division of Environmental Quality Department of Natural Resources P.O. Box 176 Jefferson City, MO 65102 314-751-4817 Fax: 314-751-2706
Montana	Steve Pilcher, Administrator Water Quality Division Dept. of Health & Environmental Sciences Room A206 P.O. Box 200901 Helena, MT 59620-0901 406-444-2406 Fax: 406-444-1374	Jeffrey Chaffee, Acting Division Administrator Air Quality Division Dept. of Health & Environmental Sciences 836 Front Street P.O. Box 200901 Helena, MT 59620-0901 406-444-3454 Fax: 406-444-5275
Nebraska	Pat W. Rice, Assistant Director Water Quality Division Dept. of Environmental Quality Suite 400, The Atrium P.O. Box 98922 Lincoln, NE 68509 402-471-3098 Fax: 402-471-2909	Joe Francis, Assistant Director Air and Waste Management Division Department of Environmental Quality 1200 North Street, Suite 400 P.O. Box 98922 Lincoln, NE 68509-8922 402-471-0001 Fax: 402-471-2909
Nevada	Wendell McCurry, Bureau Chief Water Quality Planning Division of Environmental Protection 333 W. Nye Lane, Capital Complex Carson City, NV 89710 702-687-4670 Ext: 3098 Fax: 702-687-6396	Jolaine Johnson, Bureau Chief Bureau of Air Quality Division of Environmental Protection 333 West Nye Lane Carson City, NV 89710 702-687-4670 Fax: 702-687-6396

State Environmental Agency Contacts		
State	Water	Air
New Hampshire	Robert Varney, Commissioner Dept. of Environmental Services P.O. Box 95 Concord, NH 03302-0095 603-271-3503 Fax: 603-271-2867	Kenneth A. Colburn, Director Air Resources Division Department of Environmental Services 64 North Main Street Caller Box 2033 Concord, NH 03301 603-271-1370 Fax: 603-271-1381
New Jersey	Dennis Hart, Director Environmental Regulations, Division of Water Quality Dept. of Environmental Protection CN029, 401 E. State Street Trenton, NJ 08625-0029 609-292-4543 Fax: 609-984-7938	John Elston, Administrator Office of Air Quality Management Department of Environmental Protection 401 East State Street 7th Floor West Trenton, NJ 08625 609-292-6710 Fax: 609-633-6198
New Mexico	Jim Piatt, Bureau Chief Surface Water Quality Bureau NM Environment Department P.O. Box 26110 Santa Fe, NM 87502 505-827-0187 Fax: 505-827-0160	Cecilia Williams, Chief Air Quality Bureau Bill Blankenship, Chief Air Pollution Control Bureau Environmental Protection Division Environment Department Harold Runnels Building, Room S2100 P.O. Box 26110 Santa Fe, NM 87502 505-827-0031 Fax: 505-827-0045
New York	N.G. Kaul, Director Division of Water Dept. of Environmental Conservation 50 Wolf Road, Room 306 Albany, NY 12233-3500 518-457-6674 Fax: 518-485-7786	Thomas M. Allen, Director Division of Air Resources Department of Environmental Conservation 50 Wolf Road Albany, NY 12233-3250 518-457-7230 Fax: 518-457-0794
North Carolina	Steve Tedder, Chief, Water Quality Section Division of Environmental Management Department of Environment, Health, and Natural Resources P.O. Box 29535 Raleigh, NC 27626-0535 919-733-5083 Ext. 500 Fax: 919-733-9919	Alan Klimek, Chief Air Quality Section Department of Environment, Health, and Natural Resources P.O. Box 29535 Raleigh, NC 27611 919-733-3340 Fax: 919-733-5317

State Environmental Agency Contacts		
State	Water	Air
North Dakota	Francis (Fritz) Schwindt, Chief Environmental Health Section Dept. of Health P.O. Box 5520 Bismarck, ND 58502-5520 701-328-5150 Fax: 701-328-5200 s.schwindt@raveh.state.nd.us	Dana K. Mount, Director Division of Environmental Engineering Department of Health 1200 Missouri Avenue, Room 304 P.O. Box 5520 Bismarck, ND 58506-5520 701-328-5188 Fax: 701-328-5200
Ohio	Greg Smith, Chief Div. of Environmental and Financial Assistance Ohio Environmental Protection Agency 1600 Watermark Drive Columbus, OH 43266-0149 614-644-2798 Fax: 614-644-3687 greg-smith@center.epa.ohio.gov	Robert Hodanbosi, Chief Division of Air Pollution Control Environmental Protection Agency P.O. Box 1049 Columbus, OH 43216-0149 614-644-2270 Fax: 614-644-3681
Oklahoma	Jon Craig, Director Water Quality Division Department of Environmental Quality 1000 N.E. 10th Street Oklahoma City, OK 73117-1212 405-271-5205 Fax: 405-271-7339	Larry Byrum, Director Air Quality Division Department of Environmental Quality 4545 North Lincoln Blvd., Suite 250 Oklahoma City, OK 73105-3483 405-271-5220 Fax: 405-271-7508
Oregon	Mike Downs, Administrator Water Quality Division Dept. of Environmental Quality 811 SW 6th Avenue Portland, OR 97204-1390 503-229-5324 Fax: 503-229-6124	Gregory A. Green, Administrator Air Quality Division Department of Environmental Quality 811 SW 6th Avenue Portland, OR 97204 503-229-5359 Fax: 503-229-5675
Pennsylvania	Daniel B. Drawbaugh, Director Bureau of Water Quality Management Dept. of Environmental Resources 10th Floor, Market St. State Office Bldg. 400 Market Street P.O. Box 8465 Harrisburg, PA 17105-8465 717-787-2666 Fax: 717-772-5156	James M. Salvaggio, Director Bureau of Air Quality Control Department of Environmental Resources 400 Market Street P.O. Box 8468 Harrisburg, PA 17105-8468 717-787-9702 Fax: 717-772-2303
Rhode Island	Edward S. Szymanski, P.E., Associate Director for Water Quality Management Dept. of Environmental Management 291 Promenade Street Providence, RI 02908-5767 401-277-3961 Ext. 7201 Fax: 401-521-4230	Stephen Majkut, Chief Division of Air Resources Department of Environmental Management 291 Promenade Street Providence, RI 02908-5767 401-277-2808 Fax: 401-277-2017

State Environmental Agency Contacts		
State	Water	Air
South Carolina	Russell Sherer, Bureau Chief Bureau of Water Pollution Control Dept. of Health and Environmental Control 2600 Bull Street Columbia, SC 29201 803-734-5296 Fax: 803-734-5216	James A. Joy III, Chief Bureau of Air Quality Control Dept. of Health & Environmental Control 2600 Bull Street Columbia, SC 29201 803-734-4750 Fax: 803-734-4556
South Dakota	Steven M. Pirner, Director of the Division of Environmental Regulation Dept. of Environment and Natural Resources Joe Foss Building 523 E. Capitol Pierre, SD 57501 605-773-5559 Fax: 605-773-6035	Tim Tollefsrud, Air Director Point Source Control Program Department of Environment and Natural Resources Joe Foss Building 523 East Capitol Avenue Pierre, SD 57501 605-773-3351 Fax: 605-773-4068
Tennessee	Paul Davis, Director Division of Water Pollution Control Dept. of Environment and Conservation 401 Church Street L&C Annex, 6th Floor Nashville, TN 37243-1534 615-532-0625 Fax: 615-532-0046	John W. Walton, Director Division of Air Pollution Control Dept. of Environment and Conservation 401 Church Street, 9th Floor L&C Annex Nashville, TN 37243-1531 615-532-0554 Fax: 615-532-0614
Texas	Laura Koesters, Deputy Executive Director Office of Water Resource Management Texas Natural Resource Conservation Commission 12100 Park 35 Circle (78753) P.O. Box 13087 Austin, TX 78711-3087 512-239-4300 Fax: 512-239-4303	Beverly Hartsock, Deputy Director Office of Policy and Regulatory Development Texas Natural Resource Conservation Commission P.O. Box 13087 Austin, TX 78711-3087 512-239-5818 Fax: 512-239-4808
Utah	Don Ostler, Director Division of Water Quality Dept. of Environmental Quality P.O. Box 144870 288 North, 1460 West Salt Lake City, UT 24116-4870 801-538-6146 Fax: 801-538-6016 EQWQ.dostler@email.state.ut.us	Russell Roberts, Director Division of Air Quality Department of Environmental Quality 1950 West North Temple Salt Lake City, UT 84114-4820 801-536-4000 Fax: 801-536-4099 EQWQ.dostler@email.state.ut.us

State Environmental Agency Contacts		
State	Water	Air
Vermont	William Brierley, Commissioner Dept. of Environmental Conservation 103 South Main Street Waterbury, VT 05671-0401 802-241-3800 Fax: 802-244-5141	Richard Valentunettu, Director Air Pollution Control Division Agency of Natural Resources 103 South Main Street Building 3 South Waterbury, VT 05676 802-244-8731 Fax: 802-241-2590
Virginia	James C. Adams, Director Water Division, Department of Environmental Quality 629 East Main St.(23219) P.O. Box 10009 Richmond, VA 23240-0009 804-762-4050 Fax: 804-762-4032	John M. Daniel, Jr., Director Air Division Department of Environmental Quality P.O. Box 10009 Richmond, VA 23240 804-762-4311 Fax: 804-762-4501
Washington	Mike Llewelyn, Program Manager Water Quality Program, Washington Dept. of Ecology P.O. Box 47600 Olympia, WA 98504-7600 360-407-6405 Fax: 360-407-6426 mlle@ecy.wa.gov	Joseph Williams, Director Air Program Department of Ecology P.O. Box 47600 Olympia, WA 98504-7600 360-459-6632 Fax: 360-438-7484 mlle@ecy.wa.gov
West Virginia	Mark A. Scott, Chief, Office of Water Resources Division of Environmental Protection 1201 Greenbrier Street Charleston, WV 25311-1088 304-558-2751 Fax: 304-558-5905	G. Dale Farley, Chief Office of Air Quality Division of Environmental Protection 1558 Washington Street, East Charleston, WV 25311 304-558-3286 Fax: 304-558-3287
Wisconsin	Bruce Baker, Director Water Resources Management Bureau Dept. of Natural Resources P.O. Box 7921 Madison, WI 53707 608-266-8631 Fax: 608-267-2800	Donald F. Theiler, Director Bureau of Air Management Department of Natural Resources P.O. Box 7921 Madison, WI 53707 608-266-7718 Fax: 608-267-0560
Wyoming	Gary Beach, Administrator Water Quality Division 122 West 25th Street Hersher Bldg., 4th Floor West Cheyenne, WY 82002 307-777-7781 Fax: 307-777-5973	Charles Collins, Administrator Air Quality Division Department of Environmental Quality 122 West 25th Street Cheyenne, WY 82002 307-777-7391 Fax: 307-777-5973

The EPA regional headquarters contacts listed below are good resources for general information on environmental laws and may be able to pass along the phone numbers of state or local environmental agency contacts.

EPA Regions and Regional Office Headquarters		
EPA Region	States in Region	Regional Office
I.	CT, ME, MA, NH, RI, VT	John F. Kennedy Federal Building One Congress Street Boston, MA 02203 General Phone #: 617-565-3420
II.	NJ, NY, PR, VI	Environmental Protection Agency 290 Broadway New York, NY 10007-1866 General Phone #: 212-637-3000
III.	DE, DC, MD, PA, VA, WV	Environmental Protection Agency 841 Chestnut Building Philadelphia, PA 19107 General Phone #: 215-597-9800
IV.	AL, FL, GA, KY, MS, NC, SC, TN	Environmental Protection Agency 345 Courtland Street, N.E. Atlanta, GA 30365 General Phone #: 404-347-4727
V.	IL, IN, MI, MN, OH, WI	Environmental Protection Agency 77 West Jackson Blvd. Chicago, IL 60604-3507 General Phone #: 312-353-2000
VI.	AR, LA, MN, OK, TX	Environmental Protection Agency First Interstate Bank Tower 1445 Ross Avenue 12th Floor Suite 1200 Dallas, TX 75202-2733 General Phone #: 214-665-6444
VII.	IA, KS, MO, NE	Environmental Protection Agency 726 Minnesota Avenue Kansas City, KS 66101 General Phone #: 913-551-7000
VIII.	CO, MT, ND, SD, UT, WY	Environmental Protection Agency 999 18th Street Suite 500 Denver, CO 80202-2466 General Phone #: 303-293-1603

EPA Regions and Regional Office Headquarters		
EPA Region	States in Region	Regional Office
IX	AZ, CA, HI, NV, AS, GU	Environmental Protection Agency 75 Hawthorne Street San Francisco, CA 94105 General Phone #: 415-744-1305
X.	AK, ID, OR, WA	Environmental Protection Agency 1200 Sixth Avenue Seattle, WA 98101 General Phone #: 206-553-1200

EPA regional offices will have representative who may be able to answer your specific environmental compliance questions. EPA regional office contacts and their relevant subjects are presented in the following table:

EPA Regional Offices			
Region	Office	Contact	Phone
I.	Waste Management Division RCRA Branch	David M. Webster	617-573-5770
	Water Management Division Water Compliance Branch	Larry H. Brill	617-565-3943
	Environmental Service Division Emergency Planning and Response Branch	Donald F. Berger	617-860-4368
II.	Air and Waste Management Division Hazardous and Solid Waste Programs Branch	Stanley Siegel	212-637-4126
	Water Management Division Water Permits and Compliance Branch	Patrick Durack	212-637-3767
	Emergency and Remedial Response Division Emergency Preparedness Programs Response and Prevention Branch	Richard C. Salkie Bruce E. Sprague	908-321-6658 908-321-6656
III.	Hazardous Waste Management Division RCRA Enforcement and UST Branch	Robert E. Greaves	215-597-8125
IV.	Waste Management Division Office of Program Management Support RCRA Permitting and Compliance Branch Emergency Response and Removal Branch	Gregory (Alan) A. Farmer Myron (Doug) D. Lair	404-347-3433 404-347-3931
	Water Management Division Water Permits and Enforcement Branch	James H. Scarbrough	404-347-2019

Region	Office	Contact	Phone
V	Waste Management Division Emergency Response Branch	Richard C. Karl	312-353-9295
	Waste Management Division RCRA Program Management Branch Office of Underground Storage Tanks	Sally K. Swanson Gerald W. Phillips	312-353-8512 312-886-6159
	Water Division Water Compliance Branch	Tood A. Cayer	312-353-2121
VI	Environmental Service Division Emergency Response Branch 24-hour Hotline	Charles A. Gazda	214-665-2270 214-665-2222
	Office of Underground Storage Tanks	Guanita Reiter (Acting)	214-665-6756
	Water Management Division Permits Branch	Jack V. Ferguson	214-665-7170
VII	Environmental Service Division Emergency Planning and Response Branch	Ronald D. McCutcheon	913-551-5007
	Waste Management Division RCRA Branch	Lyndell L. Harrington (Acting)	913-551-7051
	Water Management Division	Thomas M. Carter	913-551-7031
	Water Programs Assistance Branch	Larry B. Ferguson	913-551-7034
	Water Compliance Branch		
VIII	Hazardous Waste Management Division RCRA Implementation Branch Emergency Response Branch	Terry L. Anderson John R. Gledt	303-293-1663 303-294-7129
	Water Management Division NPDES Branch	Steve A. Burkett	303-293-1623
IX	Hazardous Waste Management Division Office of Underground Storage Tanks Office of Solid Waste RCRA Programs Branch	Patricia Eklund Jeff Scott Richard E. Vaille	415-744-2079 415-744-2091 415-744-2090
	Water Management Division Permits and Compliance Branch	Catherine Kuhlman	415-744-2001
X	Water Division Surface Water Branch	Jack H. Gedstatter	206-553-0966
	Hazardous Waste Division	Betty Wiese (Acting)	206-553-2782

The following table contains federal EPA Hotline phone numbers. These Hotlines are staffed by regulatory experts in federal law. They may not be able to help you with the details of your state's requirements. These representatives may, however, be able to recommend a contact to you at the state or local level.

EPA Hotlines		
Hotline	Description	Phone Number
Asbestos Ombudsman Clearinghouse/Hotline Small Business Ombudsman Clearinghouse/Hotline	Provides information to the public, including individual citizens and community services, on the handling and abatement of asbestos in schools, the work place, and the home. Assists small business in complying with EPA regulations.	(800) 368-5888 for all non-government locations outside the Washington metropolitan local calling area. All others, call (703) 305-5938
Emergency Planning and Community Right-to-Know (Title III of SARA) and Superfund	Provides information for the Emergency Planning and Community Right-to-Know (Title III of SARA) program. A contractor operates this hotline under EPA's direction. This hotline provides regulatory, policy, and technical assistance to federal agencies, state and local governments, the public, and the regulatory community.	(800) 535-0202 for all non-government locations outside the Washington metropolitan local calling area. All others, call (703) 412-9877
Emergency Response Section Notification Line	The attendant on this hotline screens all calls and transfers appropriate callers to EPA's technical assistance team.	(415) 744-2000 (All of area codes 415, 707, 512, northern portion only of area code 408)
EPA Action Line	Functions as a referral service to appropriate program offices.	(800) 223-0425 for all non-government locations outside the Kansas local calling area (including IA, MO, NE, KS residents) All others, call (913) 551-7122

EPA Hotlines		
Hotline	Description	Phone Number
General Information — Environmental Issues	Provides general information on environmental issues	(800) 759-4372 for all non-government locations outside the Colorado local calling area. All others, call (303) 293-1603
Hazardous Waste Ombudsman	The Hazardous Waste Management Program established under RCRA assists the public and the regulatory community in resolving problems concerning any program or requirement under the Hazardous Waste Program. The ombudsman handles complaints from citizens and the regulatory community, obtains facts, sorts information, and substantiates policy.	(800) 262-7937 for all non-government locations outside the Washington metropolitan local calling area. All others, call (202) 260-9361
National Lead Information Center Hotline	Managed by the National Safety Council and sponsored by OPPT. This hotline provides information to help parents protect their children from lead poisoning in the home and can furnish a list of state and local contacts. Written materials and recordings are available in either English or Spanish.	(800) 532-3394

EPA Hotlines

Hotline	Description	Phone Number
National Pesticides Telecommunications Network	Provides information about the National Pesticides Telecommunications Network program. A contractor operates this hotline under EPA's direction. This hotline provides the medical, veterinary, and professional communities and the general public with information on pesticide product information, recognition and management of pesticide poisonings, toxicology and symptomatic reviews, safety information, health and environmental effects, and clean-up and disposal procedures.	(800) 858-7378 for all non-government locations outside the Texas local calling area (includes Alaska, Puerto Rico, and the Virgin Islands) All others, call (806) 743-3091
National Response Center — U.S. Coast Guard Oil and Hazardous Material Spills	Callers use this hotline to report oil and hazardous material spills. Note: Please have as much relevant data as possible ready when calling this number.	(800) 424-8802 for all non-government locations outside the Washington metropolitan local calling area. All others, call (202) 267-2675/2185
RCRA Information Hotline (RIL)	Provides information on hazardous waste identification, generators, transporters, treatment, storage and disposal facilities, recycling sites, and export and import.	(415) 744-2074 Nationwide
RCRA/Superfund/OUST and EPCRA Hotline	Provides information about the RCRA/Superfund/OUST program. This hotline provides answers to questions about EPA's RCRA regulations and policies. It also provides referrals for obtaining related documents concerning RCRA, Underground Storage Tanks (UST), Superfund/CERCLA, and Pollution/Waste Minimization.	(800) 424-9346 for all non-government locations outside the Washington metropolitan local calling area. All others, call (703) 412-9810

EPA Hotlines		
Hotline	Description	Phone Number
Solid Waste Assistance Program (SWAP)	Provides information on all aspects of solid waste management, including source reduction, recycling, composting, planning, education and training, public participation, legislation and regulation, waste combustion, collection, transfer and disposal, landfill gas, and special wastes.	(800) 677-9424 for all non-government locations outside the Washington metropolitan local calling area All others, call (301) 585-2898
Storm Water Hotline	<i>Attended operation of this hotline has been discontinued as of April 15, 1994. A recording has been placed on the line to direct callers to alternative sources of information about Storm Water Regulation.</i>	(800) 296-1996 for all non-government locations outside the Washington metropolitan local calling area All others, call (202) 275-6677
Toxic Substances Control Act (TSCA) Assistance Information Service	Provides TSCA regulation information the chemical industry, labor and trade organizations, environmental groups, and the general public. Technical as well as general information is available.	(202) 554-1404 Nationwide

FRA Regional Offices			
<i>States/City/Time</i>	<i>Field Address/Zip Code</i>	<i>Name/Title</i>	<i>Telephone/FTS/Comm</i>
Region 1 8:30 a.m. - 5:00 p.m.	55 Broadway Room 1077 Cambridge, MA 02142	Mark H. McKeon Regional Administrator Leslie Fiorenzo Laurence Hasvold Deputy Regional Administrators Robert R. Novak Administrative Officer	617-494-2302
Region 2 8:00 a.m. - 4:30 p.m.	Scott Plaza II Suite 550 Philadelphia, PA 19113	John Megary Regional Administrator Dave Myers Deputy Regional Administrator Marie Doherty Administrative Assistant	610-521-8200
Region 3 8:00 a.m. - 4:30 p.m.	1720 Peachtree Rd., N.W. Suite 440 North Tower Atlanta, GA 30309-2469	Fred Dennin Regional Administrator R.H. Savage Christopher Clune Deputy Regional Administrators Patricia Earnest Administrative Officer	404-347-2751

FRA Regional Offices, cont.			
<i>States/City/Time</i>	<i>Field Address/Zip Code</i>	<i>Name/Title</i>	<i>Telephone/FTS/Comm</i>
Region 4 9:00 a.m. - 5:30 p.m.	111 N. Canal Street Suite 655 Chicago, IL 60606	Richard McCord Regional Administrator Lewis F. Dennin Cedestra Jordon Deputy Regional Administrators Jacqueline Burrage Administrative Officer	312-353-6203
Region 5 8:00 a.m. - 4:30 p.m.	8701 Bedford Eules Road Suite 425 Hurst, TX 76053	Harry T. Paton Regional Administrator Leon H. Sapp Ralph Elston Deputy Regional Administrators Lynn Mills Administrative Officer	817-284-8142
Region 6 9:00 a.m. - 5:30 p.m.	City Center Square 1100 Maine Street, Suite 1130 Kansas City, MO 64105	Darrel J. Tisor Regional Administrator Eric N. Kutch Aleta Dow Deputy Regional Administrators Frances E. Hamilton Administrative Officer	816-426-2497

FRA Regional Offices, cont.

<i>States/City/Time</i>	<i>Field Address/Zip Code</i>	<i>Name/Title</i>	<i>Telephone/FTS/Comm</i>
Region 7 11:30 a.m. - 8:00 p.m.	650 Capitol Mall Room 7007 Sacramento, CA 95814	Michael Sanders Regional Administrator David Lydick Deputy Regional Administrator (Vacant) Administrative Assistant	916-498-6540
Region 8 11:00 a.m. - 7:30 p.m.	703 Broadway Murdock Executive Plaza Suite 650 Vancouver, WA 98660	Chester Southern Regional Administrator D.L. Clairmont Deputy Regional Administrator Lawrene L. Williams Administrative Officer	360-696-7536

The last table can be used to keep track of the environmental agency representatives you come into contact with during the course of your calls. When you find a good information source that is not on the lists above, enter it in the table below for future reference

Telephone Contacts			
<i>Name</i>	<i>Office/ Phone number</i>	<i>Reason Called</i>	<i>Date</i>

Telephone Contacts			
<i>Name</i>	<i>Office/ Phone number</i>	<i>Reason Called</i>	<i>Date</i>

NOTES

APPENDIX B: MATERIAL DISPOSAL DISCUSSION

WASTE STORAGE AND DISPOSAL

Short line railroads use, store, and dispose of a variety of regulated substances during the course of normal operations. Of all major environmental regulations, those governing storage and disposal of wastes, especially hazardous wastes, potentially affect the greatest number of short lines. Leaking or improperly disposed waste drums can contaminate the environment, requiring expensive cleanups and resulting in potentially large fines for non-compliance with environmental laws.

Many railroads employ contractors to handle waste storage and disposal questions. Under environmental law, however, the ultimate responsibility for proper waste disposal lies with the waste generator, regardless of the presence of a contractor. Short lines have been held liable for the cleanup of wastes dumped illegally by their waste disposal contractor, even when the waste was improperly dumped without their knowledge.

Waste storage and disposal compliance requirements are dependent on the types and amounts of wastes at your facility. The Resource Conservation and Recovery Act (RCRA) is central to compliance with the material storage and disposal requirements discussed below. *Review of the Chapter 3: Statutory Overview discussion of RCRA is recommended for a better understanding of the material storage and disposal compliance requirements at your facility. For a full understanding, review of the applicable regulations is required.*

MAJOR ISSUES: WASTE STORAGE AND DISPOSAL

Your waste storage and disposal compliance requirements will hinge on the types and amounts of waste generated at your facility. The discussion below presents general waste disposal issues and categories, discusses specific compliance requirements for each type of waste, and overviews various railroad wastes.

In general, there are a variety of issues to consider when disposing of a particular waste at your facility:

- All wastes must be identified as to type and category (e.g., hazardous, non-hazardous, or special),
- Most landfills are restricted by state laws as to what they can accept,

- It is illegal to put hazardous waste, petroleum waste or other regulated waste in a dumpster or other receptacle to be disposed of with routine non-hazardous trash,
- Fines and imprisonment may result from failure to comply with hazardous waste laws,
- If hazardous wastes result from your activities your facility has special requirements.

Many states have different hazardous waste definitions and compliance responsibilities, so only the probable categorization of wastes could be discussed below. It is important to note that according to RCRA law, it is your responsibility to determine whether or not a particular waste is hazardous.

Hazardous Materials

Hazardous materials may be classified as a 'hazardous waste' under state and federal environmental laws. Hazardous materials trigger a host of compliance requirements for the facility that generates them. Since short lines may produce hazardous materials in their daily operations, proper hazardous material storage and disposal practices are an essential component of environmental compliance. It is usually preferable, from both environmental and economic standpoints, to avoid generating the waste through practices such as waste minimization or recycling.

Once you have determined that your facility is a hazardous waste generator, the quantity of hazardous waste produced at that facility will determine your compliance requirements. There are three categories of hazardous waste producing facilities under RCRA: Conditionally Exempt Small Quantity Generators, Small Quantity Generators, or Large Quantity Generators. Refer to Chapter 3 to determine your facility's status.

Generally speaking, hazardous wastes should be stored in non-leaking containers with the appropriate hazardous waste label. The amount of time hazardous waste containers can be stored at your facility will depend on the amount of waste you generate. If you currently have approximately 4 signal batteries, or 220 pounds, of hazardous waste at your facility, the maximum time you may legally store wastes at your facility may be as little as 90 days from day of generation. State law may designate less time for on-site storage. Hazardous waste containers must be shipped off-site to a permitted Treatment, Storage, and disposal facility before the time period expires.

Potentially Hazardous Materials and Basic Disposal Requirements	
Material	Basic Requirements
Absorbent materials contaminated with hazardous substances	Absorbent materials take on the waste characterization of the spills they absorb. If any spills or drips of hazardous substances are remediated with absorbent materials, the absorbent materials may need to be handled as hazardous wastes. Minimize your use of hazardous materials by switching to non-hazardous alternatives.
Aerosol cans, still pressurized	Pressurized aerosol cans are hazardous wastes under RCRA. Once depressurized, however, the can may be disposed of as non-hazardous. Cans can be depressurized by inverting them and releasing all of the propellant, or puncturing them with an approved aerosol can depressurization device.
Waste oils and oil-contaminated wastes	All oils and oil containing wastes should be containerized and labeled appropriately to prevent release to the environment. Used oil is not currently listed as a hazardous waste under RCRA law, and most waste oil generated at your facility (e.g., spilled diesel fuel) will probably not be hazardous waste. Cutting oils, hydraulic oils, and oils containing solids may require hazardous waste management depending on your particular state's environmental regulations.
Paint removal wastes: Grit blast wastes	The hazardous or non-hazardous status of grit blast wastes will depend on the types and amounts of paint that are removed. Grit itself is a non-hazardous substance. Grit blast wastes from removal of lead-based paints, however, are hazardous. Grit-blasted latex paints are non-hazardous wastes. The presence of other contaminants in the grit blast waste, such as grease or oil, will also determine its disposal requirements. Reuse grit whenever possible.
Paint removal wastes: Paint thinners	Ignitable or toxic paint thinner wastes such as rags and paint sludges are hazardous wastes. When possible, purchase paint thinners in recyclable/returnable containers to reduce waste.
Lead-based or ignitable paint and related wastes	Ignitable, solvent-based, or lead containing paints are hazardous wastes under RCRA. Painting operation wastes should be carefully managed, stored separately, and disposed of properly. Switch painting operations to latex or water-based paints are solid, non-hazardous wastes. When possible, purchase paint in recyclable/returnable containers to reduce waste.

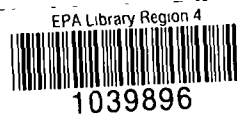
Potentially Hazardous Materials and Basic Disposal Requirements	
<i>Material</i>	<i>Basic Requirements</i>
Nickel cadmium, nickel iron, and carbonaire batteries	These batteries are hazardous wastes under RCRA. Battery disposal and storage is an important consideration for short line railroads. If used batteries are stored for too long at your facility, RCRA violations and fines will result. If possible, recycle batteries to a supplier or with a Class I railroad.
Oil filters constructed with "terne" metal (a lead-tin alloy)	Oil filters with terne metal alloy have been classified as hazardous under RCRA. Most other oil filters, however, have been found to be non-hazardous, special wastes. These wastes have special disposal requirements but do not trigger other RCRA environmental requirements (e.g., manifests).
Solvents and solvent sludge	Solvents and solvent sludges from parts cleaning or other operations fit the RCRA definition of hazardous wastes due to their toxicity and ignitability. Switch to aqueous-based solvents to reduce the generation of this waste.

Special and Non-Hazardous Wastes

Non-hazardous wastes must be disposed of in a way consistent with state laws. Municipal disposal facilities and landfills will have their own particular disposal requirements. Special wastes are not defined as hazardous under RCRA, but may have specific disposal requirements in your state. As a result, it is important to determine if a particular landfill will accept your waste. For example, some non-hazardous wastes such as used oils are not accepted by disposal authorities in some states. In these areas the waste must be handled as a hazardous waste. See Chapter 3: RCRA discussion for full coverage of non-hazardous waste disposal.

Potentially Non-Hazardous Wastes and Basic Disposal Requirements	
<i>Material</i>	<i>Basic Requirements</i>
Scrap metal	Scrap metal, while non-hazardous waste, should be recycled for maximum financial gain and minimum environmental impact. Segregating your scrap metal by type is one way to potentially improve the attractiveness of your scrap to a recycling facility.
Fully drained aerosol cans	Fully drained aerosol cans may be disposed of "in the dumpster" as non-hazardous solid-waste.
Empty latex paint containers	Latex paint containers meeting the definition of "empty" under RCRA can be disposed of as non-hazardous wastes (See Painting and Metal Finishing for more information).
Coolant from multi-punch presses	In addition to the metal filings which accumulate from the use of a multi-punch press, the water-based coolant must be disposed of properly.
Oil filters	Most oil filters are non-hazardous special wastes. Oil filters should be punctured, drained fully, and stored separately for disposal. Check with local and municipal landfill regulations to determine oil filter disposal requirements.
Single-use batteries (lantern batteries)	These single use, alkaline batteries, are non-hazardous wastes under RCRA and may be disposed as normal waste.
Locomotive coolant	Some water-based locomotive coolants may be non-hazardous substances.

TD 195
R33
E5
1996



DATE DUE