


Compliance Manual

for Indiana's

Vehicle Maintenance Shops



PART ONE

Mechanical Repair

(PART TWO - Collision Repair/Automotive Refinishing is under development)

Featuring...

- ✓ IDEM rules and regulations
- ✓ DOT and OSHA rules and regulations
- ✓ Fire & Building Services' information
- ✓ Waste prevention & minimization recommendations

Published by the

**INDIANA DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT**

Compliance and Technical Assistance Program

July 2002

www.IN.gov/idem/ctap

ACKNOWLEDGEMENTS

This manual was written and developed by staff in IDEM's Compliance and Technical Assistance Program: Cheri Storms, Mark Stoddard, and Paula Smith. Former CTAP employees, Joyce Vallance and Dave Lawrence also contributed greatly to the development of this manual.

Special thanks to staff throughout IDEM for their comments and advice, especially: Dave Berrey, Jim Hunt, John Crawford, Lee Parsons, Anne Remek, Mike Pennington, Rosemary Cantwell, Scott Draschil, Lynn Newlon, Robin Feller, Cyndi Wagner, Mark Amick, Jon Bates, and Warren Greiling.

A group of reviewers provided information and suggestions to improve the manual. IDEM appreciates the input received from the following external reviewers:

Jerry Hebert, Randy Frey, Tony Kurtz - Indiana Department of Labor, Bureau of Safety & Education Training (BuSET)
Mara Snyder, Tim Callas - Indiana Department of Fire & Building Services
Don Arnold - Indiana Department of Transportation
Nancy Reagan - Automotive Service Professionals of Indiana
Don Seader - World Wide Automotive
Tom Frantz, Dave Ehrhard, Mike Callahan - Safety-Kleen
Joel Haul - Heritage Environmental Services
Barry McConnell - Shell Oil Company
Randy Powell - Parts Guild Association
Deborah Steinkamp - Spencer County Solid Waste Management District
Mike Baker- Quality Mill Supply Co., Inc.
Mike Pitts - Indiana Petroleum Marketers & Convenience Store Association

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Labelmaster
General Motors Corporation

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Compliance and Technical Assistance Program
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Indianapolis, IN 46204-2811

317/232-8172 or toll-free at 800/988-7901.

Also see Sections 1.7 and 1.8 of this manual for the names and phone numbers of other IDEM offices and other agencies.

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The material offered in this manual is not intended to be a recommendation of any particular technique or method. Rather, this manual is offered for educational and informational purposes and is advisory only. Compliance with applicable regulations is the responsibility of each individual business. When using this manual and making any decision concerning regulatory compliance or chemical management, it is highly recommended that the particular facts and

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CHAPTER 1 - ABOUT THIS MANUAL

1.1 VEHICLE MAINTENANCE & THE ENVIRONMENT

Protecting the health of Indiana citizens and the quality of our land, air and water is everyone's responsibility. This responsibility is especially important for organizations in our communities that handle chemicals which can be harmful to human health or the environment. Because the owners and operators of vehicle maintenance shops deal with hazardous chemicals every day, they are often on the front line of caring for the environment and the health of their employees and the surrounding community. When handled properly, hazardous chemicals can be used safely, minimizing the health and safety risk for workers and surrounding neighbors.

The Indiana Department of Environmental Management is mandated to protect public health and the environment for the State. In fulfilling its responsibility, IDEM works to establish effective regulations and then implement and enforce those regulations. IDEM encourages business and industry to implement pollution prevention and waste minimization practices. By preventing pollution, companies can gain operating flexibility, avoid civil liability, and avoid the regulatory burdens of treatment and disposal because the quantity of waste generated is reduced or because waste is simply not generated in the first place. Pollution prevention and waste minimization practices are listed in many of the "You Should" sections throughout this manual, particularly in Chapter 4.

1.2 IDEM'S APPROACH TO ENVIRONMENTAL PROTECTION

As IDEM strives to meet its mandates, its approach to environmental protection in recent years has fundamentally changed. IDEM is complementing its traditional approach of simply implementing and enforcing environmental regulations with approaches that include the aggressive use of education, partnerships, and incentives. A key step in this effort was the creation of the Compliance and Technical Assistance Program in 1994 by the Indiana General Assembly and Governor Bayh. In order to effectively provide the type of assistance that may be required by the regulated community, Indiana Code Title 13, Article 28, Chapter 3, Section 4 (IC 13-28-3-4) calls for CTAP to maintain confidentiality. Specifically, the rule reads:

Inquiries made to the program and activities and documents of the program that identify or describe an individual facility or operation are confidential, unless a clear and immediate danger to the public health or environment exists. Information concerning inquiries, activities, and documents of the program that identify or describe an individual facility or operation may not be made available for use by other divisions of the department without the consent of the person who made the inquiry, participated in the activity, or provided the document.

CTAP has grown into an innovative program that has been recognized as a national leader in small business assistance. This *Compliance Manual for Indiana's Vehicle Maintenance Shops* is

a product of CTAP, in cooperation with IDEM's regulatory programs (Office of Land Quality, Office of Air Management, and Office of Water Management.)

The vehicle maintenance initiative consists of:

- 1) the production and distribution of this compliance manual;
- 2) workshops to help vehicle maintenance shop owners and operators understand their compliance responsibilities;
- 3) special recognition through the 5-Star Environmental Recognition Program for vehicle maintenance shops that exceed their environmental mandates; and
- 4) brochures designed to inform vehicle maintenance shop customers of potential environmental harm that may be caused by maintenance shop activities and of the steps that shops are taking to prevent environmental damage.

IDEM selected to undertake an initiative for the vehicle maintenance industry because:

- 1) there are too many businesses in this industry to effectively regulate them with a traditional approach;
- 2) although the environmental impact of each shop may be relatively minor, the industry as a whole has a profound environmental impact;
- 3) the industry uses a standard set of operations, allowing IDEM to provide guidance to a large audience;
- 4) the chemicals and pollutants generated by this industry are environmental priorities for IDEM, consistent with the Environmental Performance Partnership Agreement that IDEM has with the United States Environmental Protection Agency; and
- 5) the industry is represented by a number of associations that can effectively partner with IDEM to implement this project.

1.3 WHO SHOULD USE THIS MANUAL?

This manual is intended for owners and operators of vehicle maintenance shops that do business in Indiana. Most of these shops are small businesses—repair shops, dealerships, and brake or muffler repair shops. The compliance requirements for these shops depend on the number of people employed, the type of operations performed, the geographic location of the shop, and the type and volume of waste generated and stored on site.

In order to represent a small vehicle maintenance shop that is subject to regulations under IDEM, the federal Department of Transportation (DOT), the Indiana Department of Labor, and the Indiana Department of Fire & Building Services, this manual is geared toward a "typical" vehicle maintenance shop. The regulations covered in this manual apply to a shop of the size and type of a "typical" shop. Read through the description of the "typical" shop on pages four and five. If your shop performs services or uses products in quantities or types not covered in this manual, contact CTAP for assistance.

1.4 THE BENEFITS OF FOLLOWING THIS MANUAL

By reducing the amount of hazardous wastes generated, recycling products that would otherwise be considered a hazardous waste, and, by following the regulations, you can:

- reduce the amount of waste that you generate and subsequent disposal costs.
- potentially move from the Small Quantity Generator (SQG) of hazardous waste status to the Conditionally Exempt Small Quantity Generator (CESQG) status (see Section 2.6.)
- improve your market by promoting a positive environmental image to customers.
- improve worker productivity.
- decrease worker exposure to chemical hazards in the workplace.

Be aware that both the owner and manager of a vehicle maintenance shop share responsibility and financial liability for all environmental violations that may occur. In addition, if any person intentionally, knowingly, or recklessly violates an environmental law or rule, that person may be prosecuted for the commission of a felony.

**Our typical maintenance shop is classified as a
Small Quantity Generator (SQGs) of hazardous waste.**

**Using this manual may help SQGs become Conditionally Exempt Small Quantity
Generators (CESQGs) or may help CESQGs remain in the CESQG classification.**

OUR TYPICAL VEHICLE MAINTENANCE SHOP:

- ▶ generates the equivalent of approximately one 55-gallon drum of liquid hazardous waste per month, and is classified as a Small Quantity Generator (SQG) of hazardous waste.

Note that some shops may teeter back and forth between being a Conditionally Exempt Small Quantity Generator (CESQG) and an SQG of hazardous waste. During any month(s) that your shop is classified as an SQG, you must follow the SQG requirements. By using this manual and following the “You Should” management options listed throughout Chapter 4, your shop may move from an SQG classification to a CESQG classification. Or, if your shop is already a CESQG, you may remain in that classification even if your business grows. See Section 2.6 for more information on generator status.

- ▶ complies with all building and fire codes, and maintains portable fire extinguishers for all employees' use.
- ▶ stores oil in drums or in an above-ground storage tank with a maximum capacity of 660 gallons. The shop stores no more than a total of 1,320 gallons of oil (new and used combined.)

If your tank has a capacity greater than 660 gallons, or if you store more than 1,320 gallons of oil, your shop must have a Spill Prevention, Containment, and Countermeasure (SPCC) plan. Refer to IDEM's web site for guidance on developing a plan or call CTAP for assistance.

If your shop has an underground storage tank (UST), the tank must be registered with IDEM, and you must follow substantial rules. For more information on USTs, you may obtain an order form for the Underground Storage Tank Guidance Manual via IDEM's web site or call CTAP for assistance. Note that both USTs and above-ground storage tanks are subject to Fire & Building Services regulations. Contact the Plan Review Division of Fire & Building Services for more information.

- ▶ stores no more than 20-30 scrap tires at any given time.
If you store more than 30 scrap tires, you must comply with scrap tire rules. Call CTAP for assistance.
- ▶ does only nominal grinding of metal surfaces, such as grinding that is necessary when turning brakes drums or disks.
- ▶ does only minor welding (e.g., to repair cracks, fill holes or weld pieces together) or uses welding torches to loosen rusted parts. However, the shop does not perform major machining, plating, or welding services.

OUR TYPICAL VEHICLE MAINTENANCE SHOP (CON'T):

- ▶ has a parts washer containing a petroleum distillate-based solvent. The parts washer is regularly serviced by an outside vendor (i.e., the shop does not store solvent on site.) The maximum drum size of the parts washer is 30 gallons.

If your shop stores solvents, you must not only follow IDEM's requirements, but must also follow OSHA and Fire & Building Services' storage requirements. Call OSHA's BuSET, the Plan Review Division of Fire & Building Services, or CTAP for assistance.

- ▶ does not use chlorinated solvents in quantities greater than two gallons (in buckets or parts washers) to clean parts. Similarly, our typical shop does not use any non-chlorinated solvents with a chlorinated solvent content of two percent (2%) or more. Chlorinated solvents include:

- chlorobenzene (monochlorobenzene or benzene chloride)
- trichloroethylene (trichloroethane, ethinyl trichloride)
- chlorinated fluorocarbons
- methylene chloride (dichloromethane, methylene dichloride, methylene bichloride)
- tetrachloroethylene (perchloroethylene, ethylene tetrachloride, tetrachlorethylene)
- 1,1,1-trichloroethane (methyl chloroform, chlorothene)

If your shop uses chlorinated solvents in quantities greater than two gallons or in concentrations of 2% or more, you must follow National Emissions Standards for Hazardous Air Pollutants (NESHAPs). Call CTAP for assistance.

- ▶ does not do body work except for minor touch up (e.g., with cans of spray paint.)
- ▶ If you do body work, you must follow regulations in Part Two of the manual that covers Collision Repair and Auto Refinishing regulations. Note that the use of respirators is also covered in Part Two of this manual.

- ▶ does not wash cars.

See Part Two of the manual, Collision Repair, for information regarding this activity.

- ▶ does not discharge its wastewater to a septic system, storm drain, river, stream, lake or to the ground.

If you are discharging wastewater to any of these places, there are certain actions you should take to prevent serious threats to our ground water. See the Wastewater Section in Chapter 4 or call CTAP for assistance.

- ▶ does not store cars at the facility for later salvage.

This manual does not address salvage yards. Call CTAP for assistance.

1.5 HOW TO USE THIS MANUAL

Throughout this manual, we use the word "you" to mean the owner, operator, or manager of a vehicle maintenance shop. Chapter 4 addresses the products used by vehicle maintenance shops as well as the services performed. In many of the sections throughout the manual, there are lists of things that:

- **you must** do in order to be in compliance;
- **you should** do in order to improve the environmental health of your shop; and
- **you should consider** in order to make significant environmental improvements.

The list of options to consider typically involves up-front costs and/or innovative technology. Please pay special attention to the lists as you read through or refer back to this manual.

The majority of sections within Chapter 4 are presented in the following manner:

- **HAZARDS & RULES**
 - Base Materials - Hazards and Impacts
 - Additives and Contaminants - Hazards and Impacts
 - Regulatory Overview
- **MANAGEMENT RESPONSIBILITIES**
 - You Must
 - You Should
 - You Should Consider
- **BACKGROUND ON OPTIONS TO CONSIDER**

This manual covers your state and federal requirements, but does not cover local regulations. Please be aware that your city and/or county may have additional regulations that you must follow.

1.6 WHOM TO CALL FOR ASSISTANCE

If you have questions or need compliance assistance, please contact the appropriate office within IDEM or the appropriate regulatory agency. Keep in mind that CTAP offers confidentiality, but the regulatory program areas of IDEM and the other listed regulatory agencies do not.

IDEM's Compliance & Technical Assistance Program (CTAP)

IDEM - OPPTA

150 West Market St., Suite 703

Indianapolis, IN 46204-2811



Indianapolis Office

317/232-8172 or
800/988-7901



Northern Regional Office

219/245-4879 or
800/753-5519 ext. 4879



Northwest Regional Office

219/881-6720 or
888/209-8892 ext. 6720



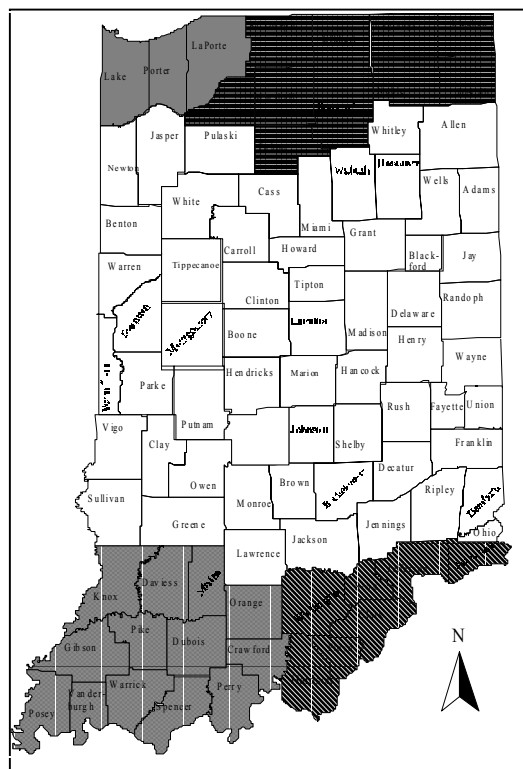
Southern Indiana Office

812/952-1144



Southwest Regional Office

812/436-2583 or
888/672-8323 ext. 2583



- **IDEM's Spill 24-Hour Emergency Hotline**
317/233-7745 local and out-of-state or toll-free at 888/233-7745 (in-state only)
- **IDEM's Office of Air Management (OAM)** 317/233-0178 or toll-free at 800/451-6027, press 0 and request ext. 3-0178
- **IDEM's Office of Land Quality (OLQ)**
- **Emergency Response**
317/308-3017 or toll-free at 800/451-6027, press 0 and request ext. 308-3017
- **Technical Compliance Section**
317/308-3040 or toll-free at 800/451-6027, press 0 and request ext. 308-3040
- **Industrial Waste Compliance Section (formerly known as the Special Waste Section)**
317/308-3013 or toll-free at 800/451-6027, press 0 and request ext. 308-3013
- **IDEM's Office of Water Management (OWM)**
- **General Information**

317/232-8476 or toll-free at 800/451-6027, press 0 and request ext. 2-8476

- Information regarding Construction Permitting, Wastewater Treatment & Sanitary Sewers
317/232-8645 or toll-free at 800/451-6027, press 0 and request ext. 2-8645
- Information regarding Wellhead Protection
317/308-3308 or toll-free at 800/451-6027, press 0 and request ext. 308-3308 or visit the website at:
<http://www.state.in.us/ide/owm/dwb/wellhead>
- **IDEM File Room Phone Numbers**
You may contact the file rooms toll-free by calling 800/451-6027, press 0 and provide the operator with the appropriate phone number.
- Air - 317/232-8391
- Land Quality - 317/232-3399, 317/232-4514
- Land Quality files consist of Underground Storage Tanks, Leaking Underground Storage Tanks, Excess Liability Fund, Spills, Federal programs, State Cleanup, Land Application,
- Septic Haulers, Confined Feeding Program, and Voluntary Remediation Program Solid and Hazardous Waste - 317/234-0964
- Spills - 317/234-0963
- Water - 317/232-8667

<p style="text-align: center;">Visit IDEM Online at: www.IN.gov/ide</p>

Indiana Department of Fire & Building Services
402 W. Washington St.
Indianapolis, IN 46204

- Plan Review Division 317/232-1431
- Fax 317/233-4892
- Book Store 317/232-6173
- Department of Fire & Building Services web site: <http://www.state.in.us/sema/osfm.html>
- **Indiana Department of Labor - Bureau of Safety Education and Training (BuSET)**
402 W. Washington St.
Indianapolis, IN 46204
317/232-2688
Department of Labor's web site: <http://www.state.in.us/labor>

The Indiana Department of Labor is responsible for enforcing OSHA regulations in the state of Indiana. As a division of the Department of Labor, BuSET provides assistance to Indiana's regulated community through presentations, training programs, and site visits.

- **Indiana Department of Transportation (INDOT)**
100 N. Senate Avenue
Room N848
Indianapolis, IN 46204-2218
317/232-6787
Department of Transportation's web site: <http://www.state.in.us/dot>

1.7 OTHER SOURCES OF INFORMATION

- **National Spill Response Center 800/424-8802**
- **EPA Ozone Protection Hotline 800/296-1996**
EPA's automotive air conditioning web site: <http://www.epa.gov/ozone/title6/609>
- **RCRA Hotline (EPA's Hazardous Waste Information Line) 800/424-9346**
- **Local Health Department**
Visit the Indiana State Department of Health's web site at http://www.state.in.us/isdh/links/local_dep/index.html for a listing of local health department directors.
- **Publicly Owned Treatment Works (POTW)**
(also called "local wastewater treatment plant" or "wastewater treatment plant")
Refer to IDEM's web site for a listing of the 45 POTWs with approved wastewater pretreatment programs.
- **Solid Waste Management Districts**
Refer to IDEM's web site for the Directory of Indiana Solid Waste Management District Directors.
- **Industry Associations**
Refer to IDEM's web site for a listing of industry associations serving the vehicle maintenance industry.
- **The International Automotive Technicians Network**
Visit their web site at www.i-atn.com
- **Insurance/Worker Compensation Providers**

CHAPTER 2 - DETERMINING WHICH REGULATIONS APPLY TO YOUR SHOP

Some regulations apply to you regardless of the activities conducted at your shop. Other regulations are dependent upon factors such as the numbers of people employed by your shop, the type of work your shop performs, and the waste streams that are generated.

It is important that you determine which rules apply to your shop and ensure that you follow these rules. If you do not do this, you may be following the wrong rules. This mistake could result in a fine and possible jail sentence depending on the severity of the violation. This chapter explains that various regulations are dependent upon the activities of your shop.

2.1 OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS

The Indiana Department of Labor is responsible for enforcing OSHA regulations in the state of Indiana. The Bureau of Safety Education and Training (BuSET) is a division of the Department of Labor that provides assistance to businesses through presentations, training programs, written guidance, and site visits.

You Must:

WRITTEN PLANS:

- have a written Hazard Communication Program, a written Lockout/Tagout Program, and must comply with all applicable OSHA General Industry Standards, including providing personal protective equipment to employees who may potentially be exposed to hazards.
- if your shop has 11 or more employees, you must comply with OSHA 300, 300A, and 301 recordkeeping responsibilities. OSHA 300 logs must be posted during the month of February. Sample 300 and 301 logs are found in Attachments F and G, respectively.
- if your shop has 11 or more employees, you must have a written Emergency Action Plan. Shops with 10 or fewer employees are not required to have a written Emergency Action Plan, but must verbally communicate the plans to employees. These shops are also exempt from OSHA 300, 300A, and 301 recordkeeping responsibilities. Note that the Department of Labor may request that you keep certain records as part of a survey that they conduct, and you are required to comply if such a request is made.

When tallying your employees, you must:

- include everyone in the **entire company** (if you have more than one vehicle maintenance shop, count the employees in both/all shops.)
- count full-time, part-time, and seasonal employees toward your total number of employees.
- if you had 11 or more employees (even for only one day during the calendar year), you must comply with OSHA 300, 300A, and 301 recordkeeping responsibilities and have a written Emergency Action Plan.

Example: Our "typical" shop has 5 full-time employees, 4 part-time employees, and 1 seasonal employee. Because there are no more than 10 employees, the shop must have the following written programs, which are required for all shops:

- Hazard Communication Program
- Lockout/Tagout Program

To protect the employees' health and safety, our "typical" shop has elected to follow the requirements of the larger classification (11 or more employees), so the shop also:

- has a written Emergency Action Plan
 - complies with OSHA 300, 300A, and 301 recordkeeping responsibilities.
-

Chapter 5 contains information regarding the training, recordkeeping and reporting requirements for each of the written OSHA regulations you must follow.

To assist you in writing your own plans, an example of each of the following is provided in Attachments B through E of this manual:

- Emergency Action Plan
- Lockout/Tagout Program
- The Hazard Communication Program
- Personal Protective Equipment

More detailed sample plans are available free of charge from BuSET.

You Must:

POSTINGS: [OSHA unless otherwise noted]

S post the following:

- OSHA's Job Safety & Health Protection poster (OSHA 2203) in a prominent location within the workplace (note that this poster is also referred to as the OSHA Rights and Responsibilities poster.) You may obtain a copy of this poster by contacting the Indiana Department of Labor, IOSHA Compliance Division at 317/232-6942.
- NO SMOKING signs in areas where flammable or combustible materials are used or stored. [Fire & Building Services]

- post the following where required for your shop:
 - State Minimum Wage poster. Required for businesses with an annual gross income of less than \$500,000. You may obtain a copy of this poster by contacting the Department of Labor, Employment Standards Division at 317/232-2680.
 - Worker=s Compensation Notice. Required for businesses that are subject to the Worker=s Compensation Act. You may obtain a copy of this poster by contacting the Worker=s Compensation Board at 317/232-3808.
 - Child Labor poster. Required for all businesses that employ minors from ages 14 through 17. Available from the Indiana Department of Labor, Bureau of Child Labor at 317/232-2675.
 - Equal Employment Opportunity poster. Required for businesses with 15 or more employees. Available from the Equal Employment Opportunity Commission at 317/226-7212.
 - Family Leave Act poster. Required for all businesses with 50 or more employees. Available from the U.S. Department of Labor, Wage and Hour Division at 317/226-6801.
 - Federal Minimum Wage and Polygraph Act posters. Required for all businesses with an annual gross income of more than \$500,000. Available from the U.S. Department of Labor, Wage and Hour Division at 317/226-6801.
 - OSHA 200 log summary. Post this log in February of each year, unless your shop has 10 or fewer employees (see Section 5.4 for more information.) [OSHA]

You Must:

PERSONAL PROTECTIVE EQUIPMENT: [OSHA]

- S depending upon the equipment and materials used in your shop, you must follow all applicable requirements listed in the Personal Protective Equipment Section of this manual (for vehicle maintenance shops), including, but not limited to the following:
- provide and maintain goggles, chemical resistant gloves and aprons, face shields, or other equipment as appropriate for the chemicals you have on site. Consult the Material Safety Data Sheet (MSDS) for each chemical to determine required protective equipment. (See the Hazard Communication section of this manual.)
 - provide and require face shields for welding, cutting, or grinding operations. (See the sections on Grinding and Welding in Chapter 4.)
 - keep all personal protective equipment clean, readily available, and in good operating condition.
 - provide an eye wash station or emergency shower in areas where corrosive chemicals will be used.
 - provide ear protection if noise levels are at 85 db/hr. for 8 hours or more.
 - train employees in the proper selection, use and maintenance of personal protective equipment.

2.2 CLASSIFYING FOR FIRE & BUILDING SERVICES REGULATIONS

All shops are required to have an oil water separator. The capacity of the separator depends on the size of the area draining into the separator. Contact CTAP or the Indiana Department of Fire & Building Services for more information.

Your building must also meet the Indiana Department of Fire & Building Services' classification requirements, which depend on the type(s) of work being done. If you weld, use any open flame, or spray paint, your building must meet the more stringent Class H building code requirements than if your shop simply exchanges parts. Each shop has its own unique description in terms of its size, type of work performed, location of the structure (including surrounding structures), etc. The building requirements that you must follow depend upon all of these unique factors. To obtain information specific to your shop, contact the Plan Review Division of Fire & Building Services and ask to speak with the reviewer who is handling pre-filing review questions.

As with the building classifications, the regulations covering flammable, combustible and incompatible materials are usually case specific. Please note that this manual addresses only the general requirements of the Indiana Department of Fire & Building Services. Many of these regulations depend upon a number of variables, making the regulations extremely case specific.

To receive specific information on complying with fire safety requirements, contact the Plan Review Division of Fire & Building Services or call CTAP for assistance. For information specific to your shop, send a letter detailing the situation, including a photo, to the Plan Review Division of the Indiana Department of Fire & Building Services. The Department will respond to your letter in writing.

2.3 CLASSIFYING FOR DEPARTMENT OF TRANSPORTATION (DOT) REGULATIONS

Hazardous Materials and Hazardous Wastes

All vehicle maintenance shops that ship hazardous waste off-site are subject to DOT regulations, including labeling requirements, selecting proper containers for shipping, and employee training. These requirements are addressed in Sections 3.5, 5.4, 5.6 and Chapter 4. A listing of commonly used DOT shipping descriptions is available on IDEM's web site.

Additional DOT regulations apply to shops that use vehicles in the day-to-day operations of their business. These regulations depend on the gross weight of the vehicle (this weight includes the weight of the shop's vehicle plus the weight of any vehicle that it is towing) and the types of materials transported by the shop's vehicle. See the Tow Truck section in Chapter 4 for more information.

2.4 DETERMINING APPLICABLE WATER REGULATIONS

Determining if Your Shop is Subject to Wastewater Regulations

All shops are subject to industrial wastewater regulations administered by IDEM's Office of Water Management and/or your local wastewater treatment plant. The regulations that you must follow depend on where your bay drains discharge and the contaminants in your shop's wastewater. To determine the specific regulations that apply to your shop, see the Wastewater section in Chapter 4.

Determining if Your Shop is Located in a Wellhead Protection Area:

Indiana's Wellhead Protection Program is designed to protect groundwater drinking supplies from pollution that can threaten health, lives, and community development. The program reduces the potential for contaminants to enter ground water (which supplies approximately 60% of the state's drinking water) by identifying and managing areas where the ground water supplies specific wells or wellfields.

Note that the Wellhead Protection Program is a new program that has not yet been fully implemented. It is your responsibility to stay up-to-date with new regulations and to comply with them. Visit IDEM's web site at:

<http://www.state.in.us/idem/owm/dwb/Wellhead/whpp/index2.html>

or contact your local public water supplier to determine if your shop is located in a wellhead protection area. If you are in a wellhead protection area, you need to be aware of regulations that are being developed in your community as a result of new state regulations (327 IAC 8-4.1.)

2.5 DETERMINING APPLICABLE AIR REGULATIONS

Motor Vehicle Air Conditioning (MVAC) Service

Automotive repair shops that service MVAC systems are required to use EPA-approved recovery and/or recycling equipment and to allow only technicians certified by an EPA-accredited training program to perform MVAC work. See Chapter 4 for information and requirements pertaining to the use, handling and transfer of recovered refrigerants. Information on EPA-approved equipment and EPA-accredited training programs is by visiting EPA's web site at:

<http://www.epa.gov/ozone/title6/609>

Chlorinated Solvents (for Parts Washing, etc.)

Chlorinated solvents (see listing below) that are used in containers with a capacity of 2 gallons or greater are highly regulated by the EPA. Any non-chlorinated solvent that has a chlorinated solvent content of two percent (2%) or more will also fall under this regulation. As of December 1997, shops using chlorinated solvents in the quantities or percentages described above must follow the regulations under the National Emission Standard for Hazardous Air Pollutants (NESHAP). The NESHAP requires shops to install equipment and implement standardized work practices to reduce the emissions of hazardous air pollutants. Because the regulatory requirements for this activity are complex, CTAP recommends that shops using chlorinated solvents discontinue this activity by substituting more environmentally friendly cleaning solutions (a list of solvent vendors is available via IDEM's web site.) As stated in Chapter 1, this manual does not address the chlorinated solvent NESHAP in detail. *Contact IDEM's Office of Air Quality or CTAP for assistance.*

Chlorinated Solvents

chlorobenzene (monochlorobenzene or benzene chloride)
trichloroethylene (trichloroethane, ethinyl trichloride)
chlorinated fluorocarbons
methylene chloride (dichloromethane, methylene dichloride, methylene bichloride)
tetrachloroethylene (perchloroethylene, ethylene tetrachloride, tetrachlorethylene)
1,1,1-trichloroethane (methyl chloroform, chloroethene)

If your shop uses products that contain chlorinated solvents and pretreats parts prior to cleaning them in the solvent sink/parts washer, your used solvent/cleaning solution will automatically be a hazardous waste. This is because chlorinated solvents are *listed* hazardous wastes (see IDEM's web site for the listed hazardous wastes.) Anytime a waste is contaminated with a listed hazardous waste, the mixture is automatically considered to be a hazardous waste, regardless of the concentration of listed waste.

Using only a small quantity of liquid chlorinated solvents may result in your shop's needing to follow significant environmental regulations.

If your shop pretreats its parts using a product that contains chlorinated solvents, the solvent/solution in your parts washer will automatically be a hazardous waste. Check the labels of each of your pretreatment products, and, if possible, discontinue using products that contain chlorinated solvents.

Solvents Used by Shops in Lake, Porter, Clark and Floyd Counties

Solvents that are used in these four counties must have a vapor pressure that does not exceed two millimeters of mercury (2.0 mm Hg). Beginning May 1, 2001, solvent vapor pressure must not exceed one millimeter of mercury (1.0 mm Hg).

Date	<i>Vapor Pressure Limit</i>
November 1, 1999	two millimeters of mercury (2.0 mm Hg)
May 1, 2001	one millimeter of mercury (1.0 mm Hg)

These restrictions apply when solvent is sold to an individual or business in amounts greater than five (5) gallons during any seven (7) consecutive business days.

Some vendors already sell solvents that meet the new vapor pressure limits. Check your MSDS sheet to ensure that your solvent meets these vapor pressure limits. If you are currently using a solvent of this type, your only additional requirement is to keep records of your purchases.

End users of these lower vapor pressure solvents must also keep a record of each purchase, including the following information:

- | | |
|--|------------------------------------|
| S name and address of the solvent supplier | S volume of each unit |
| S date of purchase, the type of solvent | S total volume of the solvent; and |
| | S vapor pressure of the solvent |

A fact sheet providing more details on this regulation may be obtained by visiting IDEM's web site at www.state.in.us/idem/oam/index.html . You may also call CTAP for assistance.

Automotive Refinishing

Automotive refinishing involves processes that release hazardous pollutants and/or volatile organic compounds into the air. If your shop performs auto refinishing (other than minor touch-up application with aerosol cans), you may need to obtain a permit from IDEM. The Collision Repair and Auto Refinishing compliance manual is now available through IDEM's web site.

Fugitive Dust from Unpaved Parking Lots

If your shop has unpaved parking lots, you must prevent the dust associated with these lots from blowing off of your property. Under **no** circumstance should you apply used oil as a dust suppressant. You may obtain a list of dust suppressants and suppliers through IDEM's web site.

Catalytic Converters

When catalytic converters are replaced, there are specific steps that a shop must take to ensure that the proper replacement part is used. In addition, shops must complete paperwork for each catalytic converter that is replaced, keep the old catalytic converter at the shop for a minimum of 15 days, and keep paperwork on file for at least 2 years.

2.6 CLASSIFYING YOUR SHOP TO DETERMINE ITS HAZARDOUS WASTE GENERATOR STATUS

A. Is Your Shop a Conditionally Exempt Small Quantity Generator, a Small Quantity Generator, or Large Quantity Generator of Hazardous Waste?

Under the Resource Conservation and Recovery Act (RCRA), hazardous waste generators are classified according to how much hazardous waste they generate in a calendar month. Your hazardous waste generator status will determine the rules you must follow to be in compliance with federal waste regulations. As mentioned in Chapter 1, our typical vehicle maintenance shop is a small quantity generator of hazardous waste. To determine your generator status, evaluate the amount of hazardous waste your shop generates and compare to the following table:

TABLE 2-A

GENERATOR STATUS	HAZARDOUS WASTE GENERATED	HAZARDOUS WASTE STORED ON-SITE
Conditionally Exempt Small Quantity Generator (CESQG)	Less than or equal to 220 pounds per month (approximately one half of a 55-gallon drum)	Maximum accumulation of 2,200 pounds (approximately four 55-gallon drums)
Small Quantity Generator (SQG)	Between 220 and 2200 pounds per month (approximately one half to four 55-gallon drums)	Maximum accumulation of 13,228 pounds (approximately thirty 55-gallon drums) and maximum storage time of 180 days*
Large Quantity Generator (LQG)	2200 pounds or more per month (more than four 55-gallon drums)	Maximum storage time of 90 days

**Hazardous waste that is transported more than 200 miles away for recovery, treatment, or disposal can be stored for up to 270 days.*

These hazardous waste cutoffs are based on:

- 1) a calendar month, **not** a rolling average; and
- 2) the quantity you generate, not the amount you ship off-site for recycling, fuel blending or disposal. The quantity generated includes:
 - the amount that is recycled on site
 - the wastewater removed from your holding tank (if the wastewater is determined to be a hazardous waste), but does not include wastewater discharged to the sanitary sewer. See the Wastewater section in Chapter 4 for more information.

TABLE 2-B
CESQG vs. SQG
BASIC REQUIREMENTS - COMPARISON CHART

*Note that there are additional requirements for SQGs that store Hazardous Waste (HW) in tanks.
Call CTAP for assistance.*

CESQG	SQG
<p>Generate less than 220 lbs. of hazardous waste per calendar month.</p> <p>Identify and quantify your hazardous waste generated per month.</p> <p>Maintain records of the quantity generated each month.</p> <p>Store no more than 2,200 lbs. of hazardous waste at any one time.</p> <p>Properly manage your hazardous waste (i.e., by recycling, laundering shop towels, etc.) or ensure delivery to a permitted disposal facility.</p> <p>May use standard bill of lading or federal uniform hazardous waste manifest (rather than Indiana's manifest) as a shipping document.</p>	<p>Generate between 220 lbs. and 2,200 lbs. of hazardous waste per calendar month.</p> <p>Identify and quantify your hazardous waste generated per month.</p> <p>Maintain records of the quantity generated each month.</p> <p>Store no more than 13,228 lbs. of hazardous waste at any one time AND not exceed the maximum storage time of 180 days (270 days if your hazardous waste is transported more than 200 miles).</p> <p>Obtain an EPA I.D. number.</p> <p>Use appropriate state's hazardous waste manifest as shipping document. After January 1, 2002, federal hazardous waste manifests must be used in lieu of Indiana's manifest form.</p> <p>Use a registered hazardous waste transporter with an EPA I.D. number.</p> <p>Properly manage your hazardous waste (i.e., by recycling, laundering shop towels, etc.) or ensure delivery to a treatment, storage, disposal or recycling facility.</p> <p>Use proper container management practices:</p> <ul style="list-style-type: none"> ⇒ mark containers with the words "Hazardous Waste" as soon as waste is first introduced into container. ⇒ mark each container with the date waste is first introduced into it, or when taken to storage, if satellite accumulation is used. ⇒ add flammable label, if applicable, when waste is first introduced. ⇒ store wastes in containers made of materials compatible with the wastes. ⇒ keep all containers of HW closed, except when adding or removing material. ⇒ inspect containers weekly. ⇒ maintain containers in good condition. <p>Hazardous Waste storage area must have:</p> <ul style="list-style-type: none"> ⇒ alarm or voice signal to provide emergency instructions. ⇒ telephone nearby to call emergency personnel. ⇒ emergency numbers posted near the telephone. ⇒ fire extinguishers nearby. ⇒ spill control equipment nearby. ⇒ water & hoses, foam equipment or automatic sprinklers. ⇒ sufficient aisle space to allow full inspection of each container.

B. What is Hazardous Waste?

To be a hazardous waste, the material under consideration must first be classified as a solid waste. It is important to note that the term "solid" does not refer to the physical state of the waste. Instead, solid waste refers to any material that you will no longer be using for its originally intended purpose or a material that must be reclaimed before it can be reused. Solid waste can be a solid, a liquid, or a contained gas.

Not all solid wastes are considered to be hazardous wastes. Hazardous wastes may be one of two types: **listed** waste or **characteristic** waste.

The waste is a **listed** hazardous waste if it appears on one of four lists published in the Code of Federal Regulations. (To assist vehicle maintenance shops in reviewing the listed wastes, CTAP has placed the three lists that are relevant to shops on the IDEM web site.)

A waste is a **characteristic** waste if it demonstrates one or more of the following characteristics:

- **ignitable** - examples include gasoline, diesel fuel, and some degreasers and solvents.
- **corrosive** - examples include battery acid and some condenser cleaners.
- **reactive** - examples include sodium azide, which is found in undeployed air bags, and other materials that are unstable, react violently with or form explosive mixtures with water, generate toxic gases or vapors when mixed with water or are capable of detonating or exploding when heated or subject to shock.
- **toxic** - wastes that contain high concentrations of heavy metals, such as lead or cadmium, or that contain chlorinated solvents. Examples include used antifreeze, which may contain high concentrations of lead, and used immersion solutions that contain perchloroethylene. If you are uncertain as to whether or not a waste is toxic, you may have the waste tested using the Toxicity Characteristic Leaching Procedure (TCLP) or simply manage it as a hazardous waste.

If properly managed, some of your used products that would otherwise be a hazardous waste may be exempt from most of the hazardous waste regulations (e.g., lead-acid batteries, oil, oil filters, fuel, and fluorescent light tubes.) In order to be exempt from the hazardous waste regulations, you must follow alternative regulations developed by IDEM's Office of Land Quality (OLQ.) Examples of alternative regulations include the Used Oil Rule and the Universal Waste Rule.

For wastes that are not exempt from hazardous waste regulations, a hazardous waste determination must be made. A hazardous waste determination may be made by doing one or more of the following:

- determining if the waste contains a listed waste (i.e., did the product originally contain a chemical on the list of listed wastes, or has the product been contaminated with a precleaner, dirty part, etc. that contains or is contaminated with a listed waste?)
- determining if the waste exhibits any of the four characteristics of a hazardous waste: ignitability, corrosivity, reactivity, and toxicity.

To make a hazardous waste determination, you may have a representative sample of the waste tested by an appropriate laboratory, or, as the generator of the waste, you may apply your knowledge of the waste to determine if it is hazardous. Applying your own knowledge of the waste is referred to as using **generator knowledge** of the waste. Generator knowledge may be based upon published or documented waste analysis data that compares the specific process that generated your waste to those processes described in the publication/document. For more information on making a hazardous waste determination, obtain the guidance document *Understanding the Hazardous Waste Determination Process* from IDEM's web site.

As you can see, making a hazardous waste determination can be a complicated task. To assist you with this process, CTAP has compiled the following table, listing the products commonly used by shops. This table indicates the management options that allow shops to not only make environmentally beneficial management decisions, but also allows them to avoid making a hazardous waste determination, subsequently managing the waste as a hazardous waste, and counting the waste toward their hazardous waste generator status.

Note that this table may not include all of the hazardous wastes that are generated by your shop. For more information on each of the products listed in the following table, including guidelines for reducing or eliminating the amount of hazardous waste generated, see Chapter 4.

TABLE 2-C
Summary of Hazardous Waste (HW)
Generated by a Typical Vehicle Maintenance Shop

Product/Waste	Description/Mgt. Option	Hazardous Waste (HW) Status	Counted Toward Generator Status (if determined to be a Haz. Waste)
Aerosol Cans	Recycled or Disposed - Emptied	Not a HW	
	Recycled or Disposed - Not Emptied	Make a HW determination and manage accordingly	√
Antifreeze	Recycled	Not a HW	
	Disposed	Make a HW determination and manage accordingly	√
Batteries	Recycled	Not counted in determining your HW generator status	
	Disposed	HW	√
Brake & Clutch Repair (Asbestos)	Disposed - Not contaminated with a HW	Not a HW, but may need to be handled with special precautions	
	Disposed - Contaminated with a HW (such as from some brake cleaners)	Must make a HW determination and manage accordingly	√
Catalytic Converters	Recycled or Disposed	Not a HW, but is subject to IDEM=s air rules	
Fluorescent Light Tubes & HID Lamps	Recycled as Universal Waste	Not counted in determining your HW generator status	
	Disposed	Must make a HW determination and manage accordingly	√

TABLE 2-C
Summary of Hazardous Waste (HW)
Generated by a Typical Vehicle Maintenance Shop

Product/Waste	Description/Mgt. Option	Hazardous Waste (HW) Status	Counted Toward Generator Status (if determined to be a Haz. Waste)
Fuel	Reused for its intended purpose or re-refined	Not a HW	
	Managed under the Used Oil Rule (for de minimus quantities of fuel only)	Not counted in determining your HW generator status	
	Disposed	Must make a HW determination and manage accordingly	√
Fuel Filters	Recycled or Disposed - Drained	Not a HW	
	Disposed - Undrained	Must make a HW determination and manage accordingly	√
Metal Parts	Recycled	Not a HW	
	Disposed	Not a HW	
Oil	Recycled or re-refined (under the Used Oil Rule)	Not a HW	
	Disposed	Must make a HW determination and manage accordingly	√
Oil Filters (Terne Plated)	Recycled	Not a HW	
	Disposed	Must make a HW determination and manage accordingly	√

TABLE 2-C
Summary of Hazardous Waste (HW)
Generated by a Typical Vehicle Maintenance Shop

Product/Waste	Description/Mgt. Option	Hazardous Waste (HW) Status	Counted Toward Generator Status (if determined to be a Haz. Waste)
Oil Filters (Non-Terne Plated)	Recycled - Drained	Not a HW	
	Recycled - Undrained (managed under the Used Oil Rule)	Not a HW	
	Disposed - Drained	Not a HW	
	Disposed - Undrained	Must make a HW determination and manage accordingly	√
Refrigerants (MVAC)	Recycled - Not contaminated	Not a HW	
	Disposed - Contaminated	Must make a HW determination and manage accordingly	√
Solvents (Aqueous-Based)	Disposed	Must make a HW determination and manage accordingly	√
Solvents (Petroleum-Based)	Reused for its originally intended purpose OR reused w/o first being reclaimed	Not a HW	
	Recycled or Disposed	Must make a HW determination and manage accordingly	√

TABLE 2-C
Summary of Hazardous Waste (HW)
Generated by a Typical Vehicle Maintenance Shop

Product/Waste	Description/Mgt. Option	Hazardous Waste (HW) Status	Counted Toward Generator Status (if determined to be a Haz. Waste)
Sorbents	Recycled under the Used Oil Rule (if contaminated with oil only)	Not a HW	
	Disposed (or unable to manage under the Used Oil Rule due to contamination with materials other than oil)	Must make a HW determination and manage accordingly	√
Tires	Recycled or Disposed	Not a HW, but subject to the Used Tire Rule or the Solid Waste rules	
Wastewater	Sent directly to the sanitary sewer	Not a HW, but subject to POTW=s and IDEM=s regulations	
	Stored in a drum(s) or holding tank	Must make a HW determination and manage accordingly	√
Wipes	Recycled (under the Used Oil Rule if contaminated with oil only)	Not a HW	
	Recycled	Must make a HW determination and manage accordingly	√
	Laundered - (reusable wipes that have not been used to clean up spills of HW)	Not a HW	
	Disposed	Must make a HW determination and manage accordingly	√

C. Changing Your Hazardous Waste Classification

Many automotive repair shops will alternate between being classified as a CESQG and an SQG. If you generate enough hazardous waste in one month to move to the next classification (for instance, from CESQG to SQG), you must comply with the much stricter standards of the larger class during the month(s) that you generate this increased volume of waste. These stricter standards include additional hazardous waste requirements as well as training requirements and emergency planning. Your goal as a small business should be to fit into the CESQG category, but to act as an SQG to ensure that your hazardous wastes are properly managed and to protect yourself from future liability associated with these wastes. Acting as an SQG will also prepare your shop to meet the stricter SQG requirements in the event that the shop generates enough hazardous waste to move to this classification.

If your generator status drops from an SQG to a CESQG, you must continue following the SQG regulations until you notify IDEM in writing that your generator status has changed. A sample letter, including the appropriate office's address, is included in Attachment S.

If you find that you are in a situation that moves you from the SQG to the Large Quantity Generator (LQG) regulations, you will be required to meet additional requirements, including, but not limited to, conduct training and developing written plans. If desired, you may contract this work to an outside company. For more information, call CTAP.

D. EPA Identification Number

Small Quantity Generators (and LQGs) must obtain an EPA identification number. EPA and states use these 12-character numbers to monitor and track hazardous waste activities. You will need to use your EPA ID when you manifest hazardous waste off site.

If your shop is an SQG (or moves into the SQG classification) and does not have an EPA identification number, you should contact IDEM's Office of Land Quality (OLQ) at 317/308-3016 or toll-free at 800/451-6027, press 0 and request ext. 308-3016 to request a copy of EPA application form 8700-12 *Notification of Regulated Waste Activity*.

E. CESQGs & Hazardous Waste Management

If you are a CESQG, IDEM does not prohibit you from discarding your **non-liquid** hazardous waste as part of your regular trash. However, you should **not** throw hazardous waste in the regular trash, because:

- landfills are prohibited from accepting liquid waste(s).
- your hazardous waste is subject to your hauler's and the disposal facility's approval. Disposal of hazardous waste may violate the contract with your hauler and/or disposal facility.
- even though your trash is taken to a site that is permitted to accept solid waste, you remain legally liable for it. If a hazardous material ends up in the soil or ground water, you can be held financially responsible for helping with the clean up.

- if you throw hazardous waste in with your regular trash, you cannot be certain of its final destination.
- there are health hazards associated with these wastes, and you do not want to harm anyone in your community. Keep in mind that children occasionally play around dumpsters and that children and trash collectors may be exposed to your hazardous wastes.

CESQGs that wish to be excluded from full hazardous waste regulations must comply with the requirements summarized in Table 2-A on page 20.

Because our "typical" vehicle maintenance shop generates approximately 55-gallons of hazardous waste per month, it is a Small Quantity Generator of hazardous waste.

Your goal as a small business should be to fit into the CESQG category, but to act as an SQG to ensure that your hazardous wastes are properly managed and to protect yourself from future liability associated with these wastes. Acting as an SQG will also prepare your shop to meet the stricter SQG requirements in the event that the shop generates enough hazardous waste to move to this classification.

CHAPTER 3

MANAGEMENT REQUIREMENTS FOR HAZARDOUS MATERIALS & HAZARDOUS WASTES

3.1 HAZARDOUS MATERIALS VS. HAZARDOUS WASTES

This chapter addresses the general regulations and best management practices associated with your hazardous materials and your hazardous wastes. It is important to differentiate between hazardous materials and hazardous wastes because they are often regulated by separate and/or multiple agencies.

Many of the products that you purchase for use in your shop contain hazardous materials. Hazardous materials are dangerous to human health and the environment. When these products are no longer of use to you and are destined for disposal or are recycled, they are usually regulated by IDEM under the hazardous waste regulations or alternative regulations.

Your use of hazardous materials and hazardous wastes are regulated by four separate agencies:

- The U.S. Department of Transportation (DOT);
- The Indiana Department of Labor [administers Occupational Safety and Health Administration (OSHA) regulations];
- The Indiana Department of Fire & Building Services; and
- The Indiana Department of Environmental Management (IDEM.)

Hazardous materials and hazardous wastes are regulated by DOT to ensure that the materials are safely transported by OSHA to ensure that the materials do not harm employees, and by the Indiana Department of Fire & Building Services to ensure that both your employees and the general public are protected from harm. IDEM regulates hazardous materials and hazardous wastes to ensure they are properly stored, that spills are properly cleaned up, and that hazardous wastes are properly recycled or disposed. Note that, depending upon where your shop is located, you may be required to follow local regulations, such as those of your city, county, or publicly owned treatment works (POTW.)

Throughout the remainder of this manual, the regulations that **you must** follow as well as the options that **you should** do or that **you should consider** are listed. All regulations and options listed are IDEM's unless otherwise noted.

3.2 PURCHASING AND RECEIVING PRODUCTS THAT CONTAIN HAZARDOUS MATERIALS

The hazardous materials used by your shop pose certain risks to you, your employees, and the environment. To help you determine the dangers of hazardous materials, OSHA requires that manufacturers and distributors make a current Material Safety Data Sheet (MSDS) available to you for each of the hazardous materials you purchase. If an MSDS is not provided, you may obtain a copy by writing to the manufacturer or the distributor, or you may refuse the shipment until the distributor provides the appropriate MSDS sheet(s). Note that OSHA expects you to take responsibility for obtaining an MSDS if one is not provided to you.

The MSDS sheet lists a variety of information about each product, including, but not limited to: fire and explosion data; health hazard data; spill or leak procedures; and special precautions. (See the sample MSDS in Attachment H for an overview of the type of information provided in an MSDS sheet.) There is no standard format for MSDS sheets, and not all MSDS sheets contain the same quality of information. Therefore, the MSDS is considered to be a starting point for finding information about the products that you use, but it is not always a complete source of information. In addition to reviewing the MSDS, you should also review each products label.

Shops that use or store hazardous materials are required to have all of their MSDS sheets on file and to make this information available to all employees who could be exposed to hazardous materials. Businesses generally file all of their MSDS sheets in a 3-ring binder and keep that binder in a "known" location for all employees to use. Note that you must update your binder when the manufacturer revises its MSDS sheets and/or product formulation.

In addition to making the MSDS sheets available to employees, shop owners and managers are also required to ensure that hazardous materials are properly labeled and to train employees on the proper use and potential dangers of each of the hazardous materials used at the shop. See Chapter 5 for information on training requirements.

You Must:

- ! ensure that only properly trained employees accept deliveries of products that contain hazardous materials. Make sure that the training includes employee testing and that training is documented. See Chapter 5 for information on employee training requirements. [DOT]
- ! ensure that each incoming shipment is accompanied by a DOT shipping paper (such as a manifest, a bill of lading, waybill, or other document which serves a similar purpose.) A shipping paper is used to identify the material being transported. [DOT]
- ! ensure that the containers are properly labeled. If they are not properly labeled, you can either refuse the shipment or assume responsibility for labeling the containers. [DOT & OSHA]
- ! obtain an MSDS for any new chemicals that you purchase. If you purchase a product and do not receive an MSDS, write to the supplier to request one. It is the supplier's responsibility to send out MSDS sheets, but OSHA expects you to request one if it does not accompany your order. [OSHA]
- ! keep either MSDS sheets or records concerning the identity of the chemical (including where

and when it was used) for 30 years after you stop using a chemical. [OSHA]

- ! properly label all chemicals. When transferring chemicals to different containers, place a label on the new container that indicates the name of the chemical and the warning information included on the original container. You should also put the date on the label.

You Should:

- ! keep outdated MSDS sheets and/or MSDS sheets for products that are no longer used by your shop in a separate binder.
- ! keep all MSDS sheets indefinitely.
- ! check all product labels to ensure that they are consistent with DOT and OSHA requirements before you accept the material from your supplier.
- ! adopt a standard labeling format that is easy for employees to use.

3.3 STORING HAZARDOUS MATERIALS

You Must:

- ! store materials in a manner that does not create a hazard. Ensure that stacked materials are limited in height and secured against sliding or collapsing. Do not allow excess materials to accumulate in your storage areas if doing so will result in a potential hazard for tripping, fire, explosion, or infestation of pests. [OSHA]
- ! follow the storage instructions listed on the label. [OSHA & Fire & Building Services]
- ! store flammables and combustibles in a fire cabinet or a storage room constructed to meet the 1-hour fire-resistant rating. Containers stored inside must not exceed 60 gallons in individual capacity; portable tanks must not exceed 660 gallons. [Fire & Building Services]
- ! ensure that all electrical wiring and equipment located inside flammable and combustible storage rooms meet the requirements for use in these areas. [OSHA]
- ! keep materials in closed, non-leaking containers, such as drums and bottles with lids so that vapors do not escape, unless the Indiana Department of Fire & Building Services requires pressure relief vents (e.g., such as for gasoline.) [IDEM & OSHA]
- ! make sure aboveground storage tanks, containers, and connecting pipes are properly labeled. For example, used oil storage tanks and piping must be marked with the words “Used Oil”
- ! ensure that all containers are clearly labeled with the proper name and hazard warning and that all labels list the target organ (the first organ identified in the MSDS under the harmful effects section.) [OSHA]
- ! store containers holding incompatible hazardous materials at least 20 feet apart or separate them by means of a dike, berm, wall, or other device. For example, oxygen cylinders must be stored away from flammable materials (such as gasoline and some types of solvents) and combustible materials (such as oil or grease.) For information on the products used by your shop, refer to each product’s MSDS, which lists incompatible materials. The purpose of this requirement is to prevent fires, explosions, gaseous emissions, or other discharge of hazardous materials constituents, which could result from the mixing of incompatible materials if containers break or leak. [OSHA & Fire & Building Services]
- ! store and/or use flammable material away from heat, flame, and sources of ignition. [OSHA & Fire & Building Services]

- ! if flammable or combustible materials are stored outdoors, they must be properly stored and must be placed within a specific number of feet of the property line and a specific number of feet away from the building. These distances depend on information specific to your shop. Contact the Plan Review Division of the Indiana Department of Fire & Building Services for more information. [Fire & Building Services]
- ! walk through your storage area on a weekly basis and inspect containers for leaks and corrosion.
- ! not release hazardous materials into any sewer, storm drain, ditch, drainage canal, lake, river or tidal waterway, or upon the ground, sidewalk, street, highway or into the atmosphere so as to create a risk of fire or explosion. [Fire & Building Services]
- ! report spills of hazardous materials. See Section 3.8.

You Should:

- ! store all containers on an impermeable surface (such as a concrete floor), away from drains or fire hazards.
- ! store drums so that the bottoms of the drums will not rest in standing water at any time.
- ! walk through your storage area on a weekly basis to ensure that stock is rotated and to check for outdated supplies.
- ! when transferring chemicals to a new container, you should use the label from the original container or make a photo copy of the original label and affix it to the new container. Note that photocopied labels should be laminated if there is a possibility that they will become wet.
- ! if your shop is located in a Wellhead Protection Area, you should have the name and contact number of the Public Water Supply System (PWSS) next to your telephone or on your Emergency Notification list (see Section 3.8.) There may be additional spill reporting requirements if you are located within a Wellhead Protection Area.

You Should Consider:

- patching any cracks in your floor and painting the floor with a resistant paint to help prevent any spilled materials from entering the soil and contaminating the ground water.
- providing secondary containment to hold materials in the event of a spill.

Your goal should be to keep hazardous chemicals and hazardous wastes in their proper place so that you never have a spill or release. It is very difficult and costly to get hazardous chemicals out of the soil and water, so it is in your best interest to implement work practices that will help prevent a spill or release.

3.4 STORING HAZARDOUS WASTES

When storing hazardous wastes on-site, you must properly store the wastes and must also meet time limits for on-site accumulation of the wastes. There are two different time limits for on-site accumulation of hazardous waste, depending on whether or not a shop has a satellite accumulation area. Satellite accumulation areas offer advantages to SQGs regarding time limits for on-site accumulation, but whether or not you have a satellite accumulation area in your shop

is optional.

Satellite accumulation areas are collection points for hazardous waste. These areas must be located at or near the point of generation of the hazardous wastes, and the operator of the process generating the hazardous waste must have control of and easy access to the satellite accumulation area. A shop with a satellite accumulation area must mark their containers with the words "Hazardous Waste" and may accumulate hazardous waste (up to 55 gallons) until the drum is completely filled. Once the drum has been filled, the shop must immediately mark the drum with the date it was filled. From this point, the shop has 72 hours to move the drum to the shop's storage area, and has 180 days to have the hazardous waste properly manifested and shipped to a treatment, storage, disposal or reclamation TSDR facility.

A shop that does not have a satellite accumulation area may accumulate hazardous waste on-site for up to 180 days provided that the quantity of waste accumulated on-site never exceeds 13,228 pounds. It is important to note that this 180-day time limit begins on the day that hazardous waste is first put into the empty container (not after the container has been completely filled.)

If a shop (either with or without a satellite accumulation area) can verify that it ships its hazardous waste at least 200 miles to a TSDR facility, the shop may accumulate waste for up to 270 days. CTAP recommends that you store wastes no longer than 180 days total or 30 days after a container or drum has been filled, whichever comes first. Note that large quantity generators can store a hazardous waste for no more than 90 days from the date the waste was first placed in the storage container or tank.

In order to comply with the regulations regarding the proper storage of hazardous wastes and the time limits for on-site accumulation of the wastes, the following rules apply:

You Must:

- ! store materials in a manner that does not create a hazard. Ensure that stacked materials are limited in height and secured against sliding or collapsing. Do not allow excess materials to accumulate in your storage areas if doing so will result in a potential hazard for tripping, fire, explosion, or infestation of pests. [OSHA]
- ! ensure that waste storage containers/tanks are in good condition.
- ! if the waste is flammable or combustible, the storage container must meet the requirements of the Indiana Department of Fire & Building Services. [Fire & Building Services]
- ! store flammable and combustibles in a fire cabinet or a storage room constructed to meet the 1-hour fire-resistant rating. Containers stored inside must not exceed 60 gallons in individual capacity; portable tanks must not exceed 660 gallons. [Fire & Building Services]
- ! ensure that all electrical wiring and equipment located inside flammable and combustible storage rooms meet the requirements for use in these areas. [OSHA]
- ! use containers made of or lined with materials which are compatible with the hazardous waste being stored. For example, solvents containing naphtha should not be stored in containers made of polystyrene, polycarbonate, PVC, or acrylics because these solvents will dissolve plastic.
- ! maintain a separate, properly labeled container for each waste.

- ! ensure that your hazardous waste storage containers are marked or labeled with the following information:
 - the words "Hazardous Waste."
 - the accumulation start date (for shops without a satellite accumulation area, this is the date you first put waste in that container) or the date that the container was moved to the hazardous waste storage area (for shops with a satellite accumulation area.)
- ! ensure that hazardous waste stickers are in good condition. Replace worn stickers.
- ! inspect hazardous waste containers every week for evidence of leaks or deterioration.
 - look for corrosion on the bottom of the containers and damp spots on the floor.
 - make sure the lids fit properly and are not rusted.
- ! if a container holding hazardous waste is not in good condition (e.g., damaged, leaking, rusting), the shop must transfer the hazardous waste from the original container to a second container or to an overpack container (a container that is made of compatible materials that is large and strong enough to hold the original container and its contents.)
- ! keep hazardous waste containers closed during storage. Only open them to add, sample, or remove wastes.
- ! place incompatible wastes in separate containers. Storage containers holding incompatible hazardous wastes (or incompatible materials) must be spaced at least 20 feet apart or must be separated by means of a dike, berm, wall, or other device. For example, oxygen cylinders must be stored away from flammable materials (such as gasoline and some types of solvents) and combustible materials (such as oil or grease.) The purpose of this requirement is to prevent fires, explosions, gaseous emissions, or other discharge of hazardous waste/materials or hazardous waste constituents which could result from the mixing of incompatible wastes or materials if containers break or leak. [OSHA]
- ! store flammable wastes away from heat, flame, and sources of ignition. [OSHA & Fire & Building Services]
- ! meet on-site accumulation time limits (discussed above.)
- ! designate an emergency coordinator for your facility and develop emergency response procedures. (See Section 5.2 and the Emergency Notification List in Attachment K.)

You Should:

- ! if the waste is to be shipped off-site:
 - the waste should be stored in containers that meet DOT requirements (so that the material will not have to be transferred from one container to another prior to shipping.)
 - the containers should be labeled with the required DOT shipping information at the time they are marked or labeled with the information necessary to meet the storage requirements of this section (i.e., marked as a hazardous waste and dated.) Although your hauler may label your containers for you, it is your responsibility to make sure the containers are labeled, packaged and properly marked during generation and transportation. See Section 3.5 for information on shipping requirements.

3.5 PROPER HANDLING AND SHIPPING OF YOUR HAZARDOUS WASTES

Hazardous wastes that you send off-site must be accompanied by Indiana's Uniform Hazardous Waste Manifest form unless you are shipping your hazardous waste to another state. In this case, you must use the receiving state's hazardous waste manifest form (or Indiana's if the receiving state does not have their own form.) The uniform hazardous waste manifest is a shipping paper that must be properly completed to identify each shipment of hazardous waste that is sent off-site. A copy of the manifest is provided to each party that takes responsibility for the waste, including you, your hauler, the TSDR facility, and IDEM.

Note that Senate Enrolled Act 511 (SEA 511) will eliminate the use of Indiana's hazardous waste manifest form. As of January 1, 2001, you will instead be required to use the federal hazardous waste manifest form, and submit to IDEM an annual report summarizing your hazardous waste shipments during the previous calendar year. Your report for the 2001 calendar year is due to IDEM by March 1, 2002. The existing requirement that you retain a copy of the manifests on site for a three-year period will not change. For more information on the new hazardous waste manifesting requirements, visit IDEM's web site.

As the generator of the hazardous waste, you are responsible for ensuring that the manifest is correctly and completely filled out. The transporter must also be certain that the manifest is properly filled out before accepting the shipment. For this reason, many waste haulers will prepare the manifest for you, and will then ask you to review and sign the manifest if all of the information is in order. Keep in mind that you are ultimately responsible for ensuring that the manifest is properly completed. For additional information on hazardous waste manifesting, you may order the *State of Indiana Hazardous Waste Manifest Guidance Manual* by using the form on IDEM's web site.

In addition to the manifest, a land disposal form must also be provided to your TSDR facility for each hazardous waste that they accept from you. This is a one-time notification form; however, if you change TSDR facilities, you must submit a land disposal form to your new TSDR facility. Similarly, if your shop generates a hazardous waste that was not previously included on the land disposal form, you must submit an additional form to your TSDR facility.

See Attachment N for an example of a completed Indiana Uniform Hazardous Waste Management form. Also see Chapter 4, or IDEM's website for DOT shipping descriptions of hazardous wastes that are likely to be generated by a vehicle maintenance shop.

You Must:

- ! ensure that the wastes are properly contained/packaged and that the containers are labeled in accordance with DOT regulations.
- ! ensure that hazardous waste stickers or markings include the following information:
 - the words "HAZARDOUS WASTE - Federal Law Prohibits Improper Disposal. If found,

contact the nearest police or public safety authority or the U.S. Environmental Protection Agency."

- the proper DOT shipping name, followed by the product's technical name in parentheses. For example:

"Waste Flammable Liquid, n.o.s., 3, UN1993, PGII, RQ (Contains Gasoline), D001"

For your convenience, a listing of specific shipping information for wastes that are commonly generated by the vehicle maintenance industry is available via IDEM's web site. [DOT]

- the name and address of your shop.
 - EPA ID number.
 - EPA Waste number.
 - the manifest document number.

If desired, you may use a label such as the one below, but are not required to do so.

Used with permission 8 1998 Lab Safety Supply Inc., Janesville, WI

HAZARDOUS WASTE	
FEDERAL LAWS PROHIBIT IMPROPER DISPOSAL	
IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY	
GENERATOR INFORMATION:	
NAME _____	
ADDRESS _____	
CITY _____	STATE _____ ZIP _____
EPA ID NO. _____	EPA WASTE NO. _____
ACCUMULATION START DATE _____	MANIFEST DOCUMENT NO. _____
[_____]	
D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX	
HANDLE WITH CARE!	
Printed By: Lab Safety Supply Inc., Janesville WI 53547-1368	
Reorder No. 433	

- ! use a hazardous waste manifest to ship hazardous waste off-site to permitted treatment, storage, disposal and reclaiming (TSDR) facilities. Manifests may be obtained from IDEM (use order form on IDEM's web site), or your vendor may provide manifests as part of their service. See Attachment N for a sample Indiana hazardous waste form.
- ! not move hazardous waste from one shop to another.
- ! ensure that hazardous waste containers are always tightly closed.
- ! use a hazardous waste hauler that meets the following requirements:
 - is currently registered with IDEM as a hazardous waste transporter and has an EPA ID number;
 - has complied with all DOT training requirements; and
 - transports all wastes to a permitted facility.
 - (see Section 3.6 for more information on choosing a waste management company.)
- ! ensure that the hazardous waste hauler has placed the required placards on the truck/vehicle. Although haulers generally placard their own vehicles, you are responsible for ensuring that the vehicle has all of the placards required by DOT for your shipment. [DOT]
- ! ensure that the hauler ships hazardous waste only to treatment, storage, disposal and reclaiming (TSDR) facilities.

You Should:

- ! choose a hazardous waste hauler that is registered with DOT and has liability insurance for accidents that may occur while transporting your hazardous waste.
- ! always know where your hazardous waste is being shipped and understand what is going to be done with the waste.
- ! if you are a CESQG, you are not required, but you should manifest your hazardous waste.

Because you are a Small Quantity Generator of hazardous waste, you may accumulate waste without a permit for up to 180 days, or, if you can verify that you ship your hazardous waste at least 200 miles to a treatment, storage, disposal, or recycling (TSDR) facility, you may accumulate waste for up to 270 days. We recommend vehicle maintenance shops store wastes no longer than 180 days or 30 days after a container or drum has been filled, whichever comes first.

If you have a satellite accumulation area, you may accumulate hazardous waste until your container is filled (up to 55 gallons.) You then have 72 hours to move your container to the container storage area and 180 days to have the waste shipped to a TSDR facility.

3.6 LIABILITY AND CHOOSING AN ENVIRONMENTAL SERVICE COMPANY

As the generator of hazardous wastes and hazardous materials, it is your responsibility to ensure that your wastes are transported and managed (i.e., recycled, treated or disposed) in an environmentally responsible and legal manner. You remain liable for any harm done by your waste, even harm that may occur after your waste has reached its final destination. To avoid

future liability, you must always ensure that your wastes are properly transported and managed. Even though you may have paid a hauler to legally transport and manage your waste, you remain responsible for the original hauler's improper management of that waste or any subsequent hauler's (if more than one hauler is involved) improper management of the waste.

Therefore, it is important for you to hire a reputable firm to handle your wastes. Some items to consider, in addition to price, when choosing a waste hauler are:

- ! the hauler's reputation in the community and among other businesses;
- ! information regarding where the waste will be shipped and its ultimate treatment (i.e., recycled, fuel blended, disposed, etc.)
- ! the adequacy of the hauler's insurance coverage for worker compensation;
- ! the adequacy of the hauler's insurance coverage for liability, including liability insurance for accidents that may occur during transportation. Some of the forms that you should request from the hauler include:
 - form MCS-90, "Endorsement(s) for Motor Carrier Policies of Insurance for Public Liability Under Sections 29 and 30 of the Motor Carrier Act of 1980";
 - form MCS-83, "Motor Carrier Surety Bond for Public Liability Under Section 30 of the Motor Carrier Act of 1980";
 - the company's written decision, order or authorization from the Interstate Commerce Commission allowing the carrier to be self-insured. These proofs of financial responsibility are considered public information and must show that the carrier is prepared to respond to at least one million dollars in damages that may result from its handling of your waste.

In addition to the above-listed documents, your hazardous waste hauler **and the TSDR facility** should provide you with documents verifying that they:

- ! have an EPA ID number;
- ! have complied with all training requirements (EPA, IDEM, OSHA, and DOT);
- ! transport all waste to a TSDR facility; and
- ! provide you with the required documentation for each shipment.

3.7 SPILL PREVENTION & PREPAREDNESS

Your shop should work to avoid spills and to implement spill response procedures to help ensure that spills are managed effectively.

You Should:

- ! avoid or reduce the amount of material spilled:
 - pump your liquid products directly from one area to another when possible (e.g. use an on-vehicle/closed-loop antifreeze recycler or add motor oil via a hose.) Note that, when flammable liquids are transferred from one container to another, they must be effectively bonded together and also to ground. (OSHA)
 - drain and replace automotive fluids in a designated area where there are no connections to the storm drain or municipal sewer.
 - collect leaking or dripping fluids in designated drip pans or containers. Keep all fluids separate so they may be recycled. When you are finished working on a vehicle, immediately empty contents of drip pans into appropriate collection containers. Don't leave the drip pans unattended as they may pose a tripping hazard, resulting in a potential injury and/or spill.
- ! prepare to respond to spills:
 - if possible, keep your shop's drain sealed, using an inflatable plug or absorbent pillow, to eliminate the possibility of spill materials' entering your drain.
 - refer to the sample Emergency Notification list (see Attachment K.) Complete this form and place a copy of it near each phone in your shop. Having this information on hand during an emergency situation will greatly assist you in notifying the proper agencies and affected parties.
 - keep a spill kit on hand and replenish the kit with any materials that were used during the clean up operation.
 - train employees on the proper response to chemical emergencies. Note that this is required as part of IDEM's hazardous waste regulations and OSHA's Hazard Communication Program. See the Sample Hazard Communication Program in Attachment C for more information.

3.8 IN CASE OF A SPILL

Under IDEM's Spill Rule, a spill is defined as a release of more than one pint or one pound of an objectionable substance (such as oil, gasoline, solvents, antifreeze, etc.) that could threaten to enter the ground water or surface water of the State of Indiana. This definition includes spilling an objectionable substance on the ground, into the water, or into a drain that does not lead to a wastewater treatment plant.

Not all spills are reportable. Whether or not a spill must be reported depends on several factors, including:

- ! the material spilled and its Reportable Quantity (RQ). Each hazardous material has its own RQ, requiring the spill to be reported if it meets or exceeds the gallons/pounds corresponding to its RQ.
- ! the location of the spill, including whether the location is part of a wellhead protection area; near a private drinking water well or State water with a designated use; water owned by the federal government; or within or outside your property boundary.
- ! whether or not a spill response has been done.

As a general rule, all spills should be reported unless they:

- ! do not create a risk to public health from fire or explosion.
- ! are contained within a building.
- ! do not come in contact with soil or water.
- ! do not leave your property and do not threaten to enter the waters of Indiana (including ground water). You may clean up the spill and are not required to report it to IDEM.

As you can see, determining when to report a spill is a complicated task. You may obtain additional information via IDEM's web site or you may simply call IDEM's Environmental Emergency Hotline at 317/233-7745 or toll free at 888/233-7745. An IDEM Environmental Emergency Hotline staff member will assist you in determining whether or not you have a reportable spill, and, if your spill is reportable, will also assist you in determining which additional entities you must contact to report the spill.

A sample Emergency Notification list is located in Attachment K. You should complete this form and place a copy of it near each of the phones in your shop for future reference.

If you fail to report a spill, you may receive a \$25,000 fine per day and/or jail time for not reporting. Remember that it is not illegal to have a spill, but it is illegal to fail to report the spill and clean it up.

IDEM's 24-HOUR ENVIRONMENTAL EMERGENCY HOTLINE

317/233-7745 LOCAL AND OUT-OF-STATE

888/233-7745 STATEWIDE (TOLL FREE)

In addition to reporting the spill to IDEM, there are a number of other organizations that you must contact. See Attachment K for a sample Emergency Notification list. Complete this form and place a copy of it near each phone in your shop.

In the event of a spill, IDEM recommends that you follow these procedures. Some of the steps are required (“you must”) while others are offered as suggestions (“you should”) to avoid harm to employees.

If you have a spill:

- if appropriate, turn on the ventilation systems to vent the vapors out of the building.
- ^ alert others and call for help.
- ✓ if the spilled material is not flammable, set the containers upright and shut off the valves that released the material. If the container is damaged, place it in a compatible secondary container (e.g. bucket or overpack drum.)
- ⇔ place a spill tube/sock around your drain to prevent spill material from entering the drain.
- ⇐ if applicable, have properly trained personnel put on personal protective equipment (apron, gloves), while cleaning up the material. *Note: If you have respirators, you are responsible for establishing a respirator program which includes medical monitoring, training, and planning. Therefore, if you do not stay abreast of the OSHA guidelines, you should not have respirators in your facility. As stated in the introductory section of this manual, respirators are covered in Part Two of this manual.*

↑ clean up the spill, using appropriate methods, including:

- scooping up the material with a dust mop and squeegee if possible (such as with spilled oil);
- cleaning up the spill with a rag; or
- spreading an absorbent material;

Note that if you spill a material that does not leave your property and does not threaten to enter the waters of Indiana (including ground water), you may clean it up and are generally not required to report the spill to IDEM (contact CTAP or IDEM's Environmental Emergency Hotline for assistance in determining if the spill is reportable.) The spill must be reported to your local fire department if it creates a risk to public health from fire or explosion. [Fire & Building Services]

⇒ if you must leave the building because of exposure symptoms from the spilled material, **do not** reenter the building to clean up the spill unless you are OSHA-trained to assist at a hazardous substance release incident (contact BuSET or CTAP for more information on training requirements.) If you do not have this type of OSHA training, contact your local fire department or an environmental contractor. [OSHA]

↓ pack and label the spill material in a compatible container that meets IDEM, DOT and the Indiana Department of Fire & Building Services' regulations, including selecting the appropriate container and properly labeling it.

◇ make a hazardous waste determination on the spill material and manage accordingly. Spill materials that are used to clean up used oil may be managed under the Used Oil Rule if your shop is following the Used Oil Rule and burning the used oil for energy recovery.

< report your spill to:

- IDEM's Environmental Emergency Hotline as soon as possible, but within 2 hours, by calling 317/233-7745 or toll free at 888/233-7745. The Environmental Emergency Hotline is staffed 24-hours a day, 7-days a week. When you call, Environmental Emergency

Hotline, staff will request the following information:

- ☐ your shop's name, address, and EPA Identification Number;
- ☐ date, time, and type of incident (e.g., spill or fire);
- ☐ quantity and type of hazardous material involved in the incident;
- ☐ extent of injuries, if any; and
- ☐ estimated quantity and disposition/makeup of recovered materials, if any.
- ☐ acknowledgment that you are located within a wellhead protection area (if you are.)

Don't wait to report your spill. Call the Environmental Emergency Hotline even if you do not have all of the above-listed information.

- downstream users of a spill to the waterway. When you report the spill, IDEM will assist you in notifying downstream users; however, it remains your responsibility to notify downstream users of potentially contaminated water.
- the chief of the responding fire department when a release of hazardous materials creates an unreasonable risk to public safety from fire or explosion. For more detailed information on this requirement, contact the Inspection Division of Fire & Building Services at 317/232-2222. [Fire & Building Services]
- if material enters a drain that leads to your wastewater treatment plant, you may be required to call the local wastewater treatment plant to notify them of the spill. Whether or not you are required to report your spill depends upon the quantity and the material(s) spilled.
- if your shop is located in a Wellhead Protection Area, there may be additional spill reporting requirements. Contact your local public water supply system to determine these requirements.

It is not illegal to have a spill, but it is illegal to fail to report it and clean it up.

3.9 WHAT IF YOU HAVE A VIOLATION? WHO'S LIABLE?

If you violate an environmental rule, you may be fined up to \$25,000 per day per violation, and you may be jailed depending on the nature and severity of the violation. Most fines are much less than the \$25,000 maximum. The amount of the fine depends on the magnitude of the violation, the potential and/or actual harm to human health and the environment, the economic benefit gained by not complying with environmental regulations, and the violator's efforts to achieve compliance.

Initial violations may result in IDEM's sending either a warning letter or a notice of violation letter to the business. These letters are not accompanied by fines, but do require the business to come into compliance with the environmental regulations. When fines are assessed, they start at \$1,000 per violation and increase according to the severity of the violation.

When a violation occurs, both the owner and the manager of a shop are liable. The owner has overall responsibility, but the manager is also responsible for the shop that he or she manages. If

an environmental rule is *intentionally* violated, or if the owner or manager *conceals* a violation, both may be criminally liable.

If a violation occurs at your shop, it is in your best interest to voluntarily report the violation as soon as possible. This action is recommended because penalties are usually reduced or eliminated in such cases. Reporting and correcting the problem as soon as possible may limit the actual and/or potential harm to human health and the environment and result in reduced clean up costs.

If you are unsure as to whether or not you've had a violation or if you have questions regarding the regulations that apply to your shop, call CTAP for confidential assistance.

■ Indianapolis (Main Office)	317/232-8172 or toll-free at 800/988-7901
■ Northern Regional Office	219/245-4879 or toll-free at 800/753-5519 ext. 4879
■ Northwest Regional Office	219/881-6720 or toll- free at 888/209-8892 ext. 6720
■ Southern Indiana Office	812/952-1144
■ Southwest Regional Office	812/436-2583 or toll- free at 888/672-8323 ext. 2583

CHAPTER 4 COMPLIANCE REQUIREMENTS, WASTE PREVENTION & MINIMIZATION STRATEGIES

The products and processes described in this chapter are arranged alphabetically, and include the following:

PRODUCTS / WASTES	
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MOST PRODUCTS ARE ADDRESSED AS FOLLOWS:

! HAZARDS & RULES

- Base Materials - Hazards and Impacts
- Additives and Contaminants - Hazards and Impacts
- Regulatory Overview

! MANAGEMENT RESPONSIBILITIES

- You Must
- You Should
- You Should Consider

! BACKGROUND ON OPTIONS TO CONSIDER

AEROSOL CONTAINERS

HAZARDS & RULES

Base Materials - Hazards & Impacts

Aerosol sprays contain a liquid or gaseous propellant that is packed under pressure. Many of the propellants used in aerosol containers are highly flammable and potentially explosive. Because of this, they should not be heated or stored in direct sunlight. When incinerated, aerosol containers may explode, releasing the propellant and any remaining product, and scattering small pieces of sharp metal.

Additives and Contaminants - Hazards & Impacts

The hazards and impacts vary depending upon the product within the aerosol can. Some products contain hazardous materials, which may be corrosive or poisonous, or may form a toxic gas when heated. Aerosol containers emit chemicals in a mist of fine particles that are easily inhaled and absorbed into the bloodstream. Thus, a chemical that may be harmless in its liquid or solid form may be extremely dangerous as an aerosol mist.

Regulatory Overview

Empty aerosol containers may be sent to a scrap metal recycler for recycling. Containers that are totally empty are not considered to be a hazardous waste and may be disposed with your regular trash. An aerosol container is considered to be empty when the pressure in the container approaches atmospheric pressure (i.e., nothing comes out of the can when the nozzle is not clogged and is pressed.) Note that a clogged can still contains materials, it is not considered to be empty. If you dispose of cans that are not empty, you must make a hazardous waste determination and manage the cans accordingly.

MANAGEMENT RESPONSIBILITIES

Listed below are the management responsibilities that you must follow for aerosol cans that contain or contained hazardous material(s). Also listed are suggested practices that you should follow in order to ease your regulatory requirements.

You Must:

- ! ensure that your aerosol cans are either totally empty or significantly empty prior to sending them to a scrap metal recycler.
- ! ensure that your aerosol cans are totally empty prior to disposing of them.
 - if the can no longer has a sufficient amount of propellant to force the product out, puncture and drain the container. The product drained from the punctured container must be used for its intended purpose or characterized to determine if it is a hazardous waste. Be sure to use the product's MSDS sheet to familiarize yourself with its hazards prior to puncturing and draining the container. Also ensure that appropriate
 - personal protective equipment (e.g., safety glasses and gloves) is worn during this process.
 - make a hazardous waste determination on the container and the remaining product, and

manage it accordingly.

You Should:

- ! when containers are not in use, ensure that the caps of aerosol containers are in place. This will reduce the possibility of damage to the spray nozzle.
- ! if the can is not empty, you should use the remaining product for its intended purpose.
- ! recycle your empty aerosol cans. A list of scrap metal recyclers may be obtained via IDEM's web site.

You Should Consider:

- ! implementing inventory control procedures for the products used in your shop. This includes:
 - purchasing products according to need rather than purchasing bulk quantities. Products that are not used before their shelf life expires must be disposed, sometimes as a hazardous waste. The disposal cost will often exceed the purchase price of the item.
 - using products on a first-in, first-out basis. This will reduce the potential of a product's becoming a waste because its shelf life expired before it could be used.
 - issuing products to each service technician and requiring that they turn in an empty aerosol containers before receiving a replacement container. This type of system will ensure that technicians do not misplace a product, open a new product, and allow the misplaced product's shelf life to expire before it can be used. This type of system will also allow you to identify technicians using a large volume of a given product and work with them to ensure the product is being used properly.
- ! purchasing products in reusable pump spray, roll-on, liquid, or non-aerosol spray applicators. Aerosol cans are generally used for convenience, but are generally no more effective than products that are applied by pouring, wiping or brushing.

ANTIFREEZE

HAZARDS & RULES

Base Materials - Hazards & Impacts

The main component in most antifreeze is ethylene glycol (or less toxic propylene glycol), which is toxic to humans and deadly to small animals. Ethylene glycol has a sweet taste that may attract unsuspecting animals or children, therefore it is important that you properly handle, store, and dispose of antifreeze.

Additives and Contaminants - Hazards & Impacts

In addition to ethylene glycol (or propylene glycol), virgin antifreeze also consists of corrosion inhibitors and foam controllers. Used antifreeze may also contain heavy metals and other contaminants that are picked up as antifreeze circulates through the engine, particularly in older vehicles that have metal radiators with soldered joints.

Regulatory Overview

Under Indiana's hazardous waste rules, ethylene glycol and propylene glycol (i.e., virgin antifreeze) are not listed hazardous wastes. However, as mentioned above, contact with cooling system parts may cause used antifreeze to become contaminated with heavy metals, such as lead and cadmium. This contamination may make the antifreeze a hazardous waste. Similarly, used antifreeze that is mixed with other wastes (during storage, etc.) may result in a mixture that is a hazardous waste.

Each shop is responsible for making a hazardous waste determination on its used antifreeze. This determination can be based on analytical test results of the used antifreeze, or it may be based on the knowledge of the waste and how it was generated and managed. IDEM has reviewed data on used antifreeze (both ethylene glycol and propylene glycol-based) from a broad range of vehicle types and ages. The results of this data indicated that used antifreeze does not appear to exhibit the characteristics of a hazardous waste. However, you may generate antifreeze that is a hazardous waste if your shop:

- ☐ generates used antifreeze primarily from older vehicles (i.e., vehicles with metal radiators and lead soldered joints.)
- ☐ generates a type of antifreeze other than traditional ethylene glycol or propylene glycol-based antifreeze.
- ☐ mismanages its used antifreeze after it has been drained from the vehicle (i.e., if you mix it with hazardous wastes or other contaminants.)

More information on IDEM's regulatory analysis of used antifreeze may be obtained via IDEM's web site.

MANAGEMENT RESPONSIBILITIES

Regardless of whether or not your used antifreeze is a hazardous waste, there are some regulations you must follow. If your used antifreeze is considered to be a hazardous waste, you must manage it according to the Hazardous Waste Rules. Listed below are the management options that you must follow. Also listed are suggested practices that you should follow in order to ease your regulatory requirements and improve the environmental health of your shop.

You Must:

- ! regardless of whether or not your used antifreeze is a hazardous waste, you must:
 - not pour antifreeze onto the ground or into streams.
 - not discharge used antifreeze to your Publicly Owned Treatment Works (POTW) without first checking with the POTW to determine if they allow such discharges.
 - not discharge antifreeze to a septic system.
 - if you recycle your antifreeze on-site, you must make a hazardous waste determination on the filters and sludge, or you may simply treat them as hazardous wastes. Because the contaminants are concentrated in the filter and/or sludge, it is likely that these may be hazardous wastes.
- ! if your used antifreeze is determined to be a hazardous waste, you must:
 - label all containers in accordance with RCRA requirements. Remember to clearly mark the words "HAZARDOUS WASTE" as well as the date the waste began to accumulate (or the date the container was completely filled if you have a satellite accumulation area) on the used antifreeze container. See Section 3.4 for more information.
 - keep storage containers closed to prevent evaporation and spills.
 - conduct weekly inspections to ensure that the containers are in good condition. Look for leaks and for deterioration caused by corrosion or other factors. If a container leaks, put the hazardous waste or the leaking drum in another container.
 - keep monthly records of the amount of used antifreeze that you accumulate (see Section 5.4.)
 - when transporting antifreeze that is considered to be a hazardous waste due to lead contamination, label the shipment as follows: [DOT]
"Lead compounds, soluble, n. o. s., 6.1, UN2291, PGIII, Keep Away From Food"
Note that whenever "n. o. s." is part of a shipping name, the description must be immediately followed by a list of those ingredients which produce the hazard.
 - manifest drums of used antifreeze to a TSDR facility (see Section 3.5.)
 - use only permitted waste transporters that have obtained an EPA identification number to transport drums of antifreeze off site.

You Should:

- ! store new antifreeze in a sealed container and keep it out of reach of animals or children.
- ! reduce the amount of antifreeze used by replacing antifreeze only when necessary. Visually check for contaminants, and test for freeze point and pH. Fresh antifreeze or corrosion inhibitors can be added to adjust these parameters if necessary.
- ! reuse good antifreeze that is removed from a vehicle in order to make repairs. Save the antifreeze in a clean container and reuse it in the vehicle after the repairs have been made.
- ! handle antifreeze carefully to avoid spills. Use catch trays or pans to contain spills. Clean up any spills immediately. See the section entitled, 'In Case of a Spill' for information on whom to contact in the event of a spill and cleanup procedures.
- ! if your shop works on a large percentage of older vehicles (i.e., those with metal radiators and lead soldered joints) and does not recycle its antifreeze, you should keep the antifreeze from these vehicles separate from the antifreeze removed from newer vehicles. You should make a hazardous waste determination on antifreeze removed from older vehicles or simply manage it as a hazardous waste.
- ! keep used antifreeze separated from other materials such as used oil or solvent. Mixing these materials may make them non-recyclable, or may make the mixture a hazardous waste.
- ! recycle your used antifreeze by contracting with a service company to do the recycling or by purchasing equipment to recycle used antifreeze in your shop.
- ! if your used antifreeze is considered to be a hazardous waste, and you are sending it off-site for recycling or disposal, you should store it in a DOT-approved container. You should also label all containers in accordance with DOT requirements. Note that you will be required to do both of these things prior to shipping your hazardous waste off site.

You Should Consider:

- ! providing secondary containment such as a diked or bermed area to assist in the recovery of any spilled material.
- ! contracting with a service company to recycle your used antifreeze (either on- or off-site.)
- ! purchasing equipment to recycle used antifreeze in your shop.

Information on these antifreeze recycling options is provided below. Note that, whether you choose to contract with a service company or purchase equipment to recycle your antifreeze, you must follow all of the steps listed in the "You Must" section above.

BACKGROUND ON OPTIONS TO CONSIDER

If you are considering recycling your own antifreeze or having an antifreeze recycling company provide you with recycled antifreeze, be aware that many vehicle manufacturers are endorsing their own specific antifreeze formulations and using these formulations in their new vehicles. Replacing the original antifreeze with anything other than the same formulation may violate a vehicle's warranty. Similarly, recycling an antifreeze formulation generally voids its original warranty (some of the newer formulations have a 5-year warranty.)

Depending upon the make and year of the vehicles your shop generally services, you may have limited opportunities to use recycled antifreeze. Weigh this consideration when deciding whether to purchase your own recycling equipment or to contract with a service company.

Purchasing Recycling Equipment

You may purchase antifreeze recycling equipment to do your own recycling on-site. The following two models of antifreeze recycling equipment are available:

Closed-loop/on-vehicle model

The Closed-loop/on-vehicle models are equipped with hoses that attach directly to the vehicle in order to flush the cooling system, recycle the antifreeze and replenish the cooling system. The advantage to this type of system is that the used antifreeze is contained during each step of the process, thereby reducing the possibility for improper handling and storage. Note that closed-loop systems may also be used to recycle antifreeze that will be stored for later use. The disadvantage of this type of system is that the antifreeze is typically recycled through filtration or deionization, which do not remove most dissolved contaminants.

Batch system/off-vehicle model

The second model is the batch system or off-vehicle model which requires that the service technician handle the antifreeze during each step of the process (i.e., drain the antifreeze, pour it into the recycling unit, and then replenish the vehicle.) These types of systems may recycle the antifreeze by filtration or distillation. Distillation units remove suspended solids as well as dissolved contaminants.

Contracting with a Service Company to Recycle Your Used Antifreeze

Contracting this service to an outside company has certain advantages over purchasing your own equipment. First, contracting this service does not require the initial capital expense of purchasing a recycling unit. Secondly, the filters and sludge that are generated during the recycling process may be hazardous wastes. If you recycle on-site, you must make a hazardous waste determination and manage the waste accordingly. If you contract this service to an outside company that recycles your used antifreeze off-site, they will be responsible for the hazardous waste generated during the recycling process.

On-site recycling

Using an on-site mobile antifreeze recycling service involves having a recycling service visit your shop with a mobile coolant recycling unit. Note that your shop will be responsible for any hazardous waste generated as a result of on-site antifreeze recycling. Spent filters and sludge may potentially be hazardous wastes.

Off-site recycling

Another option is to send your used antifreeze off-site for recycling with a reputable recycling company. You may store your used antifreeze on-site for later pick-up.

Recycling companies usually require a minimum pickup quantity of 50-55 gallons and, in addition to picking up used antifreeze, can also supply your shop with recycled antifreeze.

Notes About Antifreeze Recycling

- Check vehicle manufacturers' warranties prior to using recycled antifreeze.
- Chemical additives must be added to the recycled antifreeze prior to its reuse in a vehicle.
Recycling equipment vendors provide these additive packages.
- The use of recycling equipment will generate potentially hazardous wastes such as spent filters or sludge. These byproducts should be presumed to be a hazardous waste unless representative sampling is conducted to determine that they are not.
- A list of companies that provide antifreeze recycling services or that lease or sell recycling equipment is included on the IDEM's web site.

BATTERIES (LEAD - ACID)

HAZARDS & RULES

Base Materials - Hazards & Impacts

As the name implies, lead-acid batteries contain both lead and acid (sulfuric acid). Each of these materials has its own hazard and impact. Lead can enter the body by ingestion (this usually occurs when putting hands or other objects contaminated with lead dust into the mouth) or by breathing lead dust. The effects of lead on the adult body include the following: problems with reproduction, digestion, and with memory and concentration; high blood pressure; nerve disorders; and muscle and joint pain. Lead is even more dangerous to children because their bodies are more sensitive to lead's effects and because their bodies absorb more lead than do adults' bodies.

The electrolyte (battery acid) in a typical lead-acid battery contains approximately 60% water and 40% sulfuric acid. Sulfuric acid is a corrosive material that can cause harm to the body upon physical contact or through the inhalation of vapors or mists. When sulfuric acid comes in contact with flesh, it burns the skin, leaving a black charred carbon residue in place of living tissue. Contact with large areas of flesh can result in shock and, possibly, death. Repeated or prolonged exposure to vapors or mists can cause inflammation of the upper respiratory tract, potentially leading to serious lung and bronchial damage.

Sulfuric acid is also a hazard due to reactivity. Sulfuric acid can react with other chemicals, generating enough heat to ignite ordinary combustible materials. Many types of metals are easily dissolved by sulfuric acid, resulting in a release of hydrogen, which is extremely flammable. In addition to reactivity, sulfuric acid can also feed an existing fire by releasing oxygen, which acts as a fuel to fire.

Additives and Contaminants - Hazards & Impacts

The electrolyte in spent lead-acid batteries may contain up to 70 times the amount of lead found in the electrolyte of new batteries. Therefore, exposure to electrolyte from spent lead-acid batteries presents a greater hazard to health and the environment. If the spent lead-acid batteries are disposed in a landfill or illegally dumped, they may release lead and lead-contaminated sulfuric acid into the environment. This can pollute drinking water sources such as lakes, rivers, streams and ground water. If lead-acid batteries are burned in incinerators, lead can remain in the ash and be released into the air.

Regulatory Overview

IDEM requires that shops recycle their used lead-acid batteries. If your shop sells batteries, you must post a sign informing customers of your requirement to accept their used batteries for recycling. IDEM also requires that you properly store your used batteries. In addition to IDEM's regulations, OSHA regulates the storage and servicing of batteries, and DOT regulates transportation.

MANAGEMENT RESPONSIBILITIES

Listed below are the requirements pertaining to the sale and disposal of batteries as well as the requirements that you must follow to ensure that your batteries are properly serviced, stored, and recycled. Also listed are suggested practices that you should follow to ease your regulatory requirements and improve the environmental health of your shop.

You Must:

- ! if you sell batteries, you must post a sign in a location that is conspicuous to your customers. The sign must be at least 8.5” wide by 11” high and the lettering must be at least 18-point type. (The sign included at the end of this section can be used to meet this Indiana Code requirement.) The written notice must indicate the following:

**Recycle your used batteries.
Improper disposal of batteries is against the law.**

**It is illegal to put used motor vehicle batteries or
other vehicle or boat batteries in the trash.**

**State law requires us to accept your used battery for
recycling if you purchase a new battery from us.**

- ! if your shop changes or charges batteries, you must: [OSHA]
 - charge batteries only in areas designated for that purpose.
 - ensure that materials needed to flush and neutralize spilled electrolyte (i.e., a hose and baking soda) are readily available.
 - ensure the reinstalled batteries are properly positioned and secured in the vehicle.
 - provide a carboy tilter or siphon to employees who handle electrolyte.
 - ensure that vehicles are properly positioned with the brake applied before attempting to change or charge batteries.
 - ensure that the batteries’ vent caps are functioning. Open the battery or compartment cover to dissipate heat.
 - prohibit smoking in the battery charging area.
 - take precautions to prevent open flames, sparks, or electric arcs in battery charging areas.
 - keep tools and other metallic objects away from the top of uncovered batteries.
 - provide suitable facilities within the work area for emergency drenching or flushing of the eyes and body.
- ! if your shop stores batteries, you must ensure that the storage area is sufficiently ventilated to prevent the accumulation of explosive mixtures of gases. [OSHA]
- ! ensure that your used batteries are properly managed and recycled by doing the following:
 - § properly store all spent lead-acid batteries in an area with secondary containment or in an

area that provides a means to control and contain any battery acid spillage. If batteries are stored outdoors, the storage-area must be curbed to contain leaks, and covered to prevent snow and rain from entering.

§ within 90 days from the date you receive the spent lead-acid battery, the battery must be transferred:

- ☐ back to the wholesaler;
- ☐ to a facility that collects lead acid batteries for delivery to a recycling facility; or
- ☐ to an IDEM-permitted secondary lead smelter (if sent to a secondary lead smelter in Indiana.)

! when transporting used batteries that are not cracked or leaking, label them as follows depending on the type of batteries you are transporting: [DOT]

-- TYPICAL DESCRIPTIONS FOR COMMONLY USED BATTERIES--

“Battery, wet, filled with acid, 8, UN2794, PGIII, Corrosive”

or

“Battery, wet, non-spillable, 8, UN2800, PGIII, Corrosive”

● when transporting batteries that are cracked and/or leaking, label them as follows: [DOT]

“Battery fluid, acid, 8, UN2796, PGII, Corrosive”

if you dispose of spilled battery acid as a hazardous waste, follow the storage and disposal requirements listed in Chapter 3, and label the waste as follows to meet DOT requirements:

“Sulfuric acid, spent, 8, UN1832, PGII, D002”

You Should:

- ! request documentation from your transporter confirming that your batteries were delivered to permitted lead-acid battery recycling facility. It is your responsibility to ensure that your batteries are recycled. If the transporter improperly disposes of your batteries, you can be held financially responsible for the clean up costs resulting from the improper disposal.
- ! store all lead-acid batteries on an impermeable surface such as coated concrete or asphalt.

You Should Consider:

- ! requiring your customers to pay a **refundable** deposit on all batteries purchased. This deposit is intended to encourage customers to bring their spent battery back to your facility for recycling.
- ! storing your used batteries on a wire shelf and installing polyethylene spill trays **below** the shelf to catch any spilled acid.

BACKGROUND ON OPTIONS TO CONSIDER

Storing batteries on a wire shelf with plastic spill trays placed below the shelf will allow you to easily inspect all batteries for damage and to contain any leaking battery acid. By storing your batteries in this manner, you can readily determine which battery is leaking and can properly neutralize the acid.

Recycle your used batteries.

**Improper disposal of batteries
is against the law.**

It is illegal to put used motor vehicle batteries
or other vehicle or boat batteries in the trash.

State law requires us to accept your used
battery for Recycling if you purchase a new
battery from us



IC 13-20-16-1

BRAKE AND CLUTCH REPAIR

HAZARDS & RULES

Base Materials - Hazards & Impacts

The base material historically found in brake and clutch pads contains asbestos. Asbestos was once a widely used material due to its resistance to heat and corrosive chemicals. Asbestos is not a health threat when its small, fibrous materials are contained within a product (such as new brake linings, roofing shingles, etc.) Airborne fibers (friable asbestos), however, can become permanently lodged in the lung, potentially causing shortness of breath, lung disease or cancer. The symptoms of these diseases generally do not appear for 20 or more years after initial exposure. Note that smokers who are exposed to asbestos, even while they are not smoking, are at a much greater risk of getting lung cancer than are nonsmokers.

Additives and Contaminants - Hazards & Impacts

There are no significant additives or contaminants associated with used brake and clutch pads. However, normal wear on asbestos-containing brake and clutch pads causes the pads to release a friable dust, and may also cause the pads themselves to be friable. The term “friable” means a material that contains more than one percent (1%) asbestos that, when dry, can be crumbled or reduced to powder by hand pressure.

Brake cleaners and other products that you use when performing brake and clutch work may cause your used brake pads, clutch pads, and/or wipes to become a hazardous waste. You must make a hazardous waste determination on your used brake pads, clutch pads, and wipes. If any of these items are deemed to be a hazardous waste, you must manage them under the more stringent hazardous waste regulations (vs. special waste regulations.)

Regulatory Overview

OSHA requires that proper engineering controls and work practices be used during brake and clutch work to reduce employees' exposure to asbestos. OSHA also has specific storage requirements for used cloths, vacuum bags, and disposable paper filters generated during brake and clutch work. Because it is generally impossible to determine which used brake and clutch pads contain asbestos, shops must follow these OSHA requirements at all times.

Unlike OSHA, IDEM does not automatically require you to manage all the dust and debris from brake and clutch work as though it contains asbestos. You may use generator knowledge of the waste to determine whether or not it contains asbestos, or you may test the waste to determine its asbestos content and then manage it accordingly.

As explained in Section 2.7, asbestos-containing waste is regulated by IDEM as either a solid waste, special waste or hazardous waste. Asbestos-containing brake and clutch pads that are in

good condition (nonfriable) are considered to be a solid waste and can be disposed with your regular trash. Friable asbestos is regulated as a special waste. Brake and/or clutch pads (either friable or nonfriable) that are contaminated with a listed waste or that exhibit a hazardous waste characteristic must be managed as a hazardous waste.

Each shop is responsible for the proper management of asbestos-containing materials. Depending upon how comfortable you are in relying on generator knowledge of whether or not the material contains asbestos, you may simply wish to manage all of the dust and other friable debris from brake and clutch work as asbestos-containing material.

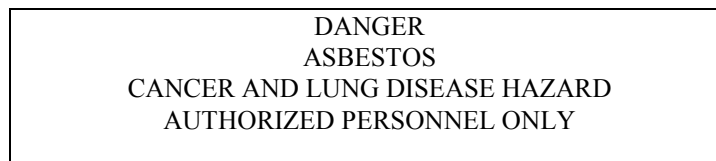
MANAGEMENT RESPONSIBILITIES

Listed below are the management responsibilities that you must follow when performing brake or clutch work or when storing or disposing of a special waste. Also listed are suggested practices that you should follow in order to ease your regulatory requirements and improve the environmental health of your shop.

You Must:

Postings [OSHA]:

- ! if your shop performs brake and/or clutch work and there is a reasonable possibility that the asbestos concentration may exceed OSHA's permissible exposure limits, you must:
 - post warning signs. These signs must be posted in the brake and/or clutch work area and at all approaches to these work areas and must contain the following information:



- ensure that all employees working in the brake and/or clutch area and contiguous areas comprehend the warning signs. You may use foreign languages, pictures or graphics as a means to ensure that employees comprehend the warning signs.

Note that proper use of the engineering controls and work practices that OSHA requires for brake and clutch work will reduce employees' asbestos exposure below the permissible exposure level. OSHA's brake and clutch work requirements are listed below. Contact BuSET or CTAP for more information on permissible exposure levels, and additional regulations that your shop must follow if you exceed these levels.

You Must:

Performing Brake & Clutch Work [OSHA]:

! when performing brake or clutch work (including inspection, disassembly or repair), you must use one of the following four work practices and engineering control methods:

- 1) if you use the **Negative Pressure Enclosure/HEPA Vacuum System**, you must:
 - enclose the clutch or brake assembly to prevent the release of asbestos in the employee's breathing zone.
 - thoroughly inspect the enclosure for leaks before brake or clutch work begins.
 - ensure that the enclosure allows the employee to clearly see the work area and has impermeable sleeves to allow the employee to perform brake or clutch work. The integrity of the sleeves and ports must be examined before work begins.
 - use a HEPA-filtered vacuum to maintain the enclosure under negative pressure while the work and clean-up are being done. Compressed air may be used to remove asbestos fibers or particulates from the enclosure.
 - use the HEPA vacuum to loosen the asbestos containing residue from the brake and clutch parts and then to remove the loosened asbestos containing material from the enclosure.
 - when the vacuum's filter is full, wet the filter with a fine mist of water, then remove the filter and immediately place it in an impermeable container that is labeled with the information provided on page 63.
 - immediately clean up and dispose of any spills or releases of asbestos containing waste material from inside the enclosure, the vacuum hose or vacuum filter using a HEPA vacuum.
- 2) if you use the **Low Pressure/Wet Cleaning Method**, you must:
 - place a catch basin (usually filtered) under the brake or clutch assembly and position to avoid spills and splashes.
 - ensure that the reservoir contains water with an organic solvent or wetting agent. Gently flood the brake assembly to prevent the asbestos-containing dust from becoming airborne.
 - allow the water solution to flow between the brake drum and brake support before the drum is removed.
 - after the brake drum is removed, use the water solution to thoroughly wet the wheel hub and back of the brake assembly.
 - thoroughly wash the brake support plate, brake shoes and brake components used to attach the brake shoes before removing the old shoes.
 - if your system uses a filter, when the filter is full, you must wet it with a fine mist of water. Remove the filter and immediately place it in an impermeable container that is labeled with the information provided on page 63.
 - properly dispose of the filter when it is full.

- immediately clean up and dispose of any spills or releases of asbestos containing waste material from inside the enclosure, the vacuum hose or vacuum filter using a HEPA vacuum.
 - not use compressed air or a dry brush to remove dirt and debris from brake or clutch assemblies.
- 3) if you are using a **proven equivalent method** to one of the above listed control methods, you must:
- provide sufficient written detail so that the method can be reproduced.
 - provide information demonstrating that the exposures resulting from the equivalent method are equal to or less than the exposures resulting from the use of the Negative Pressure Enclosure/HEPA Vacuum System Method.
 - not use compressed air or a dry brush to remove dirt and debris from brake or clutch assemblies.
- 4) if you are using the **Wet Method**, you must:
- use a spray bottle, hose nozzle or other method of delivering water in a fine mist or at a low pressure. Thoroughly wet the brake and clutch parts, and then wipe them clean with a cloth.
 - place the cloth in an impermeable container, and properly label the container.
 - have the clothes laundered in a manner that prevents the release of asbestos fibers into the air or properly dispose of the cloths.
 - immediately clean up any spills of solvent or any asbestos containing material as soon as possible, using a HEPA vacuum.
 - not use compressed air or dry brushing during the wet method operation.

You Must:

Housekeeping [OSHA]:

- ! not use compressed air when cleaning asbestos-containing material, waste and/or dust.
- ! keep all surfaces as free as practicable of asbestos-containing material, waste and dust. Clean up spills and sudden releases of asbestos-containing material as soon as possible, using the HEPA-filtered vacuuming equipment for vacuuming asbestos containing waste and debris.
- ! empty the HEPA-filtered vacuum in a manner that minimizes the reentry of asbestos into your shop.
- ! if you launder your shop towels, you must launder them in a manner that does not release asbestos fibers into the air.
- ! if you send your contaminated shop towel to a laundry, you must inform them that the towels are contaminated with asbestos. This will allow the laundry to manage the towels accordingly.

You Must:**Storage [OSHA & IDEM]:**

- ! immediately place wetted filters, or cloths used in the Spray Can/Solvent Method or Wet Method, in a heavy gauge plastic bag (or a similar impermeable container) and seal the bag to prevent fibers from drying out and becoming friable. [OSHA]
 - place the bags in an air-tight container.
 - label the container with the following Danger label (note that the information may be handwritten on your container, or you may purchase pre-labeled bags designed for asbestos waste):

<p>DANGER CONTAINS ASBESTOS FIBERS AVOID CREATING DUST CANCER AND LUNG DISEASE HAZARD</p>

- store the container in an area that restricts access by unauthorized persons, such as a locked container, room, truck or trailer.

You Must:**Disposal [IDEM]:**

- ! make a waste determination (either solid, special or hazardous waste) and manage accordingly. You may dispose of the waste as a solid waste if you have made a waste determination and found that the waste is not a special waste or a hazardous waste.
 - dispose of the waste as a special waste if:
 - ☐ the material contains friable asbestos (i.e., any material that contains more than one percent asbestos that, when dry, can be crumbled or reduced to powder by hand pressure); and
 - ☐ the asbestos-containing material is not determined to be a hazardous waste. If the material is considered to be a hazardous waste, it must be managed under the hazardous waste rules (see Chapter 3.)
- ! prior to shipping the asbestos-containing material as a special waste, you must label the container with the following information:
 - ☐ your shop=s name, address and telephone number
 - if the quantity is less than one pound, use the DOT marking: “Asbestos, 9, NA2212, Class 9, PGIII”
 - if the quantity is one pound or more, use the DOT marking, “R.Q., Asbestos, 9, NA2212, Class 9, PGIII”
- ! have your asbestos-containing waste sent to a landfill that is approved by IDEM to accept special waste. You may obtain a list of Special Waste Disposal Facilities from IDEM’s web site
- ! provide the receiving landfill with sufficient notice prior to sending your special waste to them (24 hours is usually sufficient.)
- ! ensure that an Asbestos Waste Shipment/Disposal Record accompanies each load of

asbestos-containing waste that is sent for disposal. You may obtain a copy of the Asbestos Waste Shipment/Disposal Record form via IDEM's web site or the Fax-On-Demand system.

- ! if you do not receive a completed copy of the Asbestos Waste Shipment/Disposal Record from the waste disposal facility within 35 days of acceptance of the waste by the transporter, you must contact the transporter and/or the waste disposal facility to determine the status of the asbestos-containing waste that was sent for disposal. If the transporter and/or the waste disposal facility does not respond to your inquiry within 10 days, you must file a written exception report with the Office of Air Management's Asbestos Section. This report must include a copy of the shipment/disposal record, a letter explaining the actions taken to locate the shipment, and the results of these actions.

You Should:

- ! perform brake and clutch work in an area that is away from other work areas. Post signs informing employees not to eat, drink or smoke in the brake and clutch work area.
- ! launder employee work clothes at an industrial laundry equipped to wash asbestos-contaminated clothing.
- ! use pre-ground, ready-to-install parts when possible.
- ! ensure that all machinery used on asbestos-containing products have a HEPA-equipped exhaust dust collection system to prevent asbestos exposure and shop contamination.
- ! never grind brake linings. Instead, lathe-turning should be done slowly.
- ! when preparing to store and/or dispose of asbestos-containing waste, you should:
 - if you plan to have your brake and clutch waste tested to determine its asbestos content, you should store it according to the special waste rules prior to testing. This will ensure that you are in compliance with the rules in the event the test results indicate the waste is a special waste.
 - thoroughly clean all asbestos contaminated parts and send your used drums and housings back to the wholesaler or manufacturer to be reworked. If this is not a viable option, send the drums and housings with your other scrap metal to be recycled.
- ! send asbestos contaminated shop towels to a commercial industrial laundry for cleaning and reuse rather than disposing of them as special waste. Note that you must inform the laundry that the towels are contaminated with asbestos.

DANGER

ASBESTOS

**CANCER AND LUNG
DISEASE HAZARD**

AUTHORIZED PERSONNEL ONLY

DANGER

CONTAINS ASBESTOS FIBERS

AVOID CREATING DUST

**CANCER AND LUNG
DISEASE HAZARD**

CATALYTIC CONVERTERS

(And Emission Control Devices)

HAZARDS & RULES

Base Materials - Hazards & Impacts

There are no hazards and/or impacts associated with the base materials found in catalytic converters.

Additives and Contaminants - Hazards & Impacts

There are no additives or contaminants associated with used catalytic converters.

Regulatory Overview

The 1970 Clean Air Act prompted the development of catalytic converters, which reduce harmful vehicle emissions by as much as 90 percent. Catalytic converters cause a chemical reaction in the exhaust gases while they are within the emissions system, changing harmful emissions into relatively benign emissions.

Tampering with emission control devices (such as catalytic converters, exhaust gas recirculation valves, air pumps, etc.) is illegal. This antitampering law applies to individuals as well as to businesses. Individuals may be fined as much as \$2,500 for each vehicle tampered with, and businesses are subject to fines of up to \$25,000. Note that businesses that sell used vehicles must ensure that the vehicle is equipped with all emissions control devices that were originally installed by the manufacturer.

To ensure that shops are in compliance with the antitampering law, you must follow specific procedures when working with catalytic converters, including ensuring that proper replacement parts are used and that all required paper work is completed and kept on file. A detailed listing of these procedures follows.

MANAGEMENT RESPONSIBILITIES

As the shop manager or owner, you can ensure your shop's compliance with IDEM's regulations by adhering to the following management practices. Also listed are suggested practices that you should follow in order to ease your regulatory requirements and improve the environmental health of your shop.

You Must:

- ! not tamper with catalytic converters or any part of the vehicle's emissions control equipment. Tampering includes activities such as:
 - removing or making the control emissions inoperable.
 - adjusting control emissions so that they no longer meet the manufacturer's specification.
 - installing a replacement part that is not specified for use in the vehicle or is not equally effective in reducing emissions as the specified replacement part.
 - adding a part that was not originally certified on the car.
- ! not rent, lease, sell, or transfer a vehicle which has been subject to tampering. For

information regarding the required components of a particular vehicle's emission control system, contact IDEM's Office of Air Management (OAM) or CTAP.

- ! not operate a vehicle with knowledge that the vehicle has been subject to tampering.
 - ! install an original equipment catalytic converter unless the vehicle is beyond its emissions warranty. In this case, an aftermarket catalytic converter may be installed.
 - ! install the same type of converter as the original (i.e., oxidation, three-way, or three-way plus.)
 - ! install the proper converter for the vehicle as specified by the converter manufacturer or a converter that is equally effective in reducing emissions.
 - ! install the converter in the same location as the original.
 - ! complete the registration card accompanying the new unit to be installed (or use the example form printed in the manufacturer's catalog.) Both the installer and the customer must sign the card/form, which is to be given to the owner of the vehicle.
 - ! mark the old converter with the number on the card/form, and keep the old converter for a minimum of 15 days (in case EPA or IDEM wishes to inspect the part), and the paperwork for a minimum of 2 years. (Note that EPA only requires you to keep the paperwork for 6 months, but IDEM requires that you keep it for 2 years.)
 - ! ensure that the invoice for replacement includes the customer's name, address, the vehicle's make, year, mileage, and reason for replacement of the catalytic converter.
-

It is illegal to tamper with emission control devices.

The Antitampering Law applies to individuals as well as to businesses. Individuals may be fined as much as \$2,500 for each vehicle tampered with, and businesses are subject to fines of up to \$25,000.

You Should:

- ! always refer to the catalytic converter manufacturer's application catalog to ensure that the proper replacement part is installed.
- ! send old catalytic converters to scrap metal recycling companies. Catalytic converters contain precious metals such as platinum, palladium, and rhodium. A list of scrap metal recyclers is available via IDEM's web site.

- ! if your customer's vehicle does not have a catalytic converter or has an altered converter, you should:
 - inform your customer that the vehicle was either illegally sold to him/her or that your customer has violated the antitampering law by altering the converter.
 - ⊞ If a customer has altered the converter or any part of the emissions control system, you should encourage him/her to correct the problem. You should also inform your customer that he/she is subject to a fine of \$2,500.
 - ⊞ If a customer has purchased a vehicle without a catalytic converter, he/she should call OAM at 317/232-8419 or 800/451-6027, press 0 and request ext. 2-8419. OAM will then investigate citizen complaints regarding vehicle tampering.

**If you suspect violations of the Antitampering Law, contact
IDEM's Office of Air Management
at
317/232-8419 or toll-free at 800/451-6027, press 0 and request ext. 2-8419**

FLUORESCENT LIGHT TUBES AND HIGH INTENSITY DISCHARGE (HID) LAMPS

(Does not include halogen lamps)

HAZARDS & RULES

Base Materials - Hazards & Impacts

Fluorescent light tubes and HID lamps contain small amounts of mercury, lead, and sometimes cadmium. Mercury may be ingested (this usually occurs when putting hands or other objects contaminated with white phosphor dust into the mouth) or inhaled, potentially resulting in damage to the central nervous system, kidneys and liver. Lead can also enter the body by ingestion or by inhaling lead dust. The effects of lead on the adult body include the following: problems with reproduction, digestion, and with memory and concentration; high blood pressure; nerve disorders; and muscle and joint pain. Both mercury and lead are even more dangerous to children because their bodies are more sensitive to these metals and because their bodies absorb more lead than do adults' bodies.

Additives and Contaminants - Hazards & Impacts

There are no additives or contaminants associated with used tubes or lamps.

Regulatory Overview

Historically, fluorescent tubes and lamps contained a sufficient amount of mercury to make them a hazardous waste when disposed. Some new tubes and lamps are now marketed as containing a reduced amount of mercury, presumably making them a non hazardous waste when disposed. However, it remains the generator's responsibility to ensure the correct hazardous waste determination is made and to manage the waste accordingly. If you are considering purchasing a new type of tube/lamp that is marketed as a non hazardous waste when disposed, you should request the analytical test results for the product (i.e., toxic characteristic leachate procedure, otherwise referred to as TCLP) from the vender. Ask the vendor to explain the TCLP results to you, or contact CTAP for assistance.

If your used tubes/lamps are considered to be a hazardous waste, there are two management options for handling your waste tubes and lamps. You may either recycle or dispose of them under the Universal Waste Rule or dispose of them under the hazardous waste rules.

The Universal Waste Rule is a modification of the hazardous waste rules, and is designed to reduce regulatory requirements by promoting environmentally sound recycling and disposal practices. In addition to being easier for businesses to comply with, handling your used tubes and lamps under the Universal Waste Rule also reduces the environmental impact associated with disposal under the hazardous waste rules.

The second option is to manage your used tubes and lamps under the hazardous waste rules. See sections 3.4 and 3.5 for more information on hazardous waste management requirements. Note that, for CESQGs, discarded tubes and lamps are not counted in determining your generator

status provided the tubes are shipped off-site for recycling as a universal waste. If you throw the tubes and lamps in the trash, you must add their total weight to your monthly record for hazardous waste generation. Visit IDEM's web site to obtain a list of fluorescent tube recyclers.

MANAGEMENT RESPONSIBILITIES

Listed below are the regulations that you must follow depending upon how your shop manages its used tubes and lamps. Also listed are suggested practices that you should follow to ease your regulatory requirements and improve the environmental health of your shop.

You Must:

- ! regardless of whether you follow the universal waste rule or the solid and hazardous waste rules, you must:
 - educate your employees on proper handling and emergency procedures associated with the waste tubes/lamps.
 - contain all releases of waste and residues.
 - make a hazardous waste determination on your used tubes and lamps and manage them accordingly.
 - ensure that all light tubes and/or bulbs used for general illumination are installed at least seven feet from the floor or work surface, or, if installed lower than seven feet, ensure that the light tubes and/or bulbs are protected by a fixture or lampholder with a guard.
[OSHA]
- ! if you manage your used tubes and lamps under the Universal Waste Rule, you must:
 - package both unbroken and broken tubes/lamps to prevent breakage and a release of contaminants.
 - label the tubes/lamps or the containers holding them with the words "Universal Waste-Lamps" or "Waste Lamps" or "Used Lamps" or other words that accurately identify the universal waste lamps may be used.
 - have your used tubes and lamps transported to a universal waste collection center. A list of fluorescent tube and high intensity discharge lamps recyclers is available via IDEM's web site. Note that under the Universal Waste Rule, you are not required to manifest your used tubes/lamps.
 - not accumulate and store used tubes/lamps for longer than a one year period.
 - not intentionally break or crush your lamps
- ! If you manage your used tubes and lamps as a hazardous waste, you must:
 - follow the hazardous waste rules (see Chapter 3.)

You Should:

- ! recycle your waste tubes and lamps under the Universal Waste Management rule.
- ! package your used tubes and lamps in their original boxes prior to transportation to avoid breakage. Broken glass and the residue within is a hazard to your employees, the transporter, and the recycling or disposal company's personnel.
- ! package your broken tubes and lamps separately in a sealed container.
- ! label the boxes with the number of tubes and lamps contained within.

WWW.state.in.us/idem/ctap/mercury/recyclers.pdf

FUEL & FUEL FILTERS

HAZARDS & RULES

Base Materials - Hazards & Impacts

There are no hazards and/or impacts associated with the base materials found in fuel filters.

Gasoline includes a mixture of several hydrocarbons, such as benzene, toluene, ethyl benzene, xylenes as well as performance enhancement additives. Many of these hydrocarbons are known carcinogens. Breathing gasoline vapors can cause convulsion, nausea, and loss of consciousness. Prolonged exposure to vapors has been known to cause kidney, liver, and blood disorders including anemia and leukemia. Gasoline is also a skin and eye irritant.

Diesel fuel is also a mixture of several hydrocarbons which include xylenes, but in smaller concentrations than in gasoline. Diesel fuel consists chiefly of the paraffinic hydrocarbons and naphthenes. Breathing the vapors can cause coughing, shortness of breath, nausea, and loss of consciousness. Repeated or prolonged skin contact can cause dermatitis or aggravate it.

The most acute hazard associated with gasoline and diesel fuel is flammability. Gasoline can be ignited by static electricity, which occurs naturally in the atmosphere. Vapors are heavier than air and can travel long distances along the ground. When vapors are ignited, the fire can quickly flash back to the origin of the vapors.

Additives and Contaminants - Hazards & Impacts

Used fuel filters may contain residual gasoline or diesel fuel. Gasoline contains a variety of additives that are used to improve engine performance, reduce tail pipe emissions, reduce engine deposits and spark-plug fouling, and to reduce losses during handling. Request a copy of a material safety data sheet (MSDS) from your supplier.

Regulatory Overview

Gasoline, diesel fuel, fuel filters, and used wipes and sorbents that are contaminated with gasoline or diesel may be subject to IDEM, OSHA, and the Department of Fire & Building Services' requirements. IDEM allows you to mix gasoline and/or diesel with your used oil if you follow the Used Oil Rule (see the *Oil* section in Chapter 4.) Mixing fuel with your used oil, however, will lower the flash point of your used oil and may require that you follow more stringent Fire & Building Services' and DOT regulations than otherwise required.

MANAGEMENT RESPONSIBILITIES

Listed below are the management responsibilities that you must follow. Also listed are suggested practices that you should follow in order to ease your regulatory requirements.

You Must:

- ! manage your waste fuel in one of the following manners:
 - reuse the fuel if it is not contaminated.
 - send to a re-refiner or fuel blender.
 - manage under the Used Oil Rule. See the *Oil* section in Chapter 4 for storage and management requirements. Check with your vendor prior to mixing de minimus quantities of gasoline to your used oil to ensure that your vendor allows this.
 - make a hazardous waste determination and manage accordingly.
- ! if you do not mix fuel with your used oil, store gasoline in an OSHA-approved fire-resistant safety container with a flash screen and a self-closing lid. [OSHA] You must also store the fuel in a fire cabinet or flammable liquid storage area. [Fire & Building Services]
- ! make a hazardous waste determination on fuel filters that contain gasoline, or drain or evaporate the residual fuel from the filter and then recycle or dispose the fuel filter.
- ! when transporting gasoline, label the shipment as follows: [DOT]
“Gasoline, 3, UN1203, PGII, Flammable Liquid”
- ! not use gasoline to clean yourself or for any other cleaning purposes. [OSHA & Fire & Building Services]

You Should:

- ! disassemble the fuel filter prior to recycling to separate the metal/plastic from the filter media. Some recyclers may do this job for you. The metal components can be recycled.
- ! return any usable fuel that is collected (i.e., from tanks, filters, fuel lines, etc.) to the vehicle's fuel tank or use in another engine such as your shop's lawn mower.
- ! conduct a hazardous waste determination on separated filter media intended for disposal.

METAL PARTS

HAZARDS & RULES

Base Materials - Hazards & Impacts

There are no hazards and/or impacts associated with the base materials found in metal parts. Note that some parts are coated with lead or chromium, and that a thin layer of these metals may come off when washed, potentially contaminating your solvent. See the Aqueous-Based or Petroleum-Based Solvent sections in Chapter 4 for more information. Also note that catalytic converters contain precious metals and should be recycled. See the Catalytic Converter section in Chapter 4 for more information.

Additives and Contaminants - Hazards & Impacts

There are no significant additives or contaminants associated with used parts that are drained of any liquids they may contain.

Regulatory Overview

There are no regulations for used parts, provided they do not contain free liquids (liquids that will readily pour.) IDEM, however, prefers that you manage your used parts as follows:

You Should:

- ! drain the part of any residual fluid. Combine the fluid with similar fluids collected elsewhere in your shop and manage accordingly.
- ! when possible, return used parts to the wholesaler or manufacturer for rebuilding. The wholesaler or manufacturer may have procedures in place to accept used parts for rebuilding.
- ! if the part manufacturer will not accept a used part, send it to a scrap metal recycler along with your empty aerosol cans and other recyclable metals. A list of scrap metal recyclers is available via IDEM's web site.

OIL

(Includes any petroleum-based or synthetic oil that has been used, such as engine oil, sludge from used oil tanks, transmission fluid, refrigeration oil, compressor oil, hydraulic fluid, etc.)

HAZARDS & RULES

Base Materials - Hazards & Impacts

One gallon of oil can contaminate up to one million gallons of water. The effect of oil on organisms can include genetic damage, structural deformities, reduced egg volume, and reproductive failure.

Virgin (unused) oil contains low levels of carcinogenic compounds, such as benzene and toluene. In addition to these compounds, oil also contains relatively high levels of polycyclic aromatic hydrocarbons, which may be absorbed through the skin of employees who are exposed to oil. Polycyclic aromatic hydrocarbons are directly linked to a number of types of cancer, including skin tumors. Shop personnel should avoid prolonged or frequently repeated skin contact with oil by wearing impervious protective gloves and by washing hands and other exposed areas thoroughly after contact. Because oil is a combustible liquid, it must be properly handled, and oil soaked clothing must be changed to avoid a fire safety hazard.

Additives and Contaminants - Hazards & Impacts

As oil circulates through the engine, the oil may become contaminated with heavy metals, including lead. In addition, used oil is also contaminated with products of incomplete combustion, which contain a number of known carcinogens.

High concentrations of lead may make the oil a hazardous waste. Oil may also become contaminated through contact with gasoline, which could make the used oil a hazardous waste due to benzene contamination and/or flammability.

Regulatory Overview

Two environmental management options currently exist for vehicle maintenance shops with used oil. The first option is to recycle your used oil or to burn it for energy recovery under the Used Oil Rule. The second option is to dispose of your used oil, following all applicable solid and hazardous waste rules. By managing your used oil under the Used Oil Rule (rather than following the solid and hazardous waste rules), you will lessen your regulatory requirements.

Used Oil Rule (Recycling or Burning for Energy Recovery):

Complying with the Used Oil Rule means that you do not have to manage your used oil or the sludge from your used oil tank as a hazardous waste. Even if the used oil to be recycled or fuel blended is contaminated with a hazardous waste *from product formulation or through its intended use* (such as when contaminants mix with oil in the crankcase), the used oil is still regulated under the Used Oil Rule rather than as a hazardous waste. In order to comply with the Used Oil Rule, you must properly manage your used oil (i.e., don't mix anything other than waste

fuels with your used oil), and you must either recycle your used oil or burn it for energy recovery. Oil that is intentionally or accidentally mixed with a hazardous material must be managed as a hazardous waste.

Note that, under the Used Oil Rule, both re-refining and burning of used oil for energy recovery are considered to be forms of recycling. Re-refining is the preferred method of managing used oil because it preserves our limited resources. However, in some instances, such as when you are disposing of sludge from the bottom of your used oil tank, or disposing of petroleum contaminated wipes, sorbents, or spill materials, burning the material for energy recovery is the better management option.

If you choose to burn your used oil in your own used oil furnace, be aware that there are additional rules that you must follow under the Used Oil Rule. Because small oil-burning furnaces are not as clean-burning or as efficient as industrial furnaces, IDEM recommends that you send your used oil to a fuel blender rather than burning it on-site.

Solid and Hazardous Waste Rules (Disposal):

Used oil that cannot be managed under the Used Oil Rule (i.e., because of contamination with a hazardous waste or other material) is subject to all applicable solid and hazardous waste rules. Under the solid and hazardous waste rules, you must make a hazardous waste determination and must manage your used oil accordingly (see Chapter 3 for information on managing hazardous wastes.)

If you determine that your used oil is not a hazardous waste, it is still prohibited from being sent to a solid waste landfill because these landfills do not accept liquid waste or waste that contains free liquids (i.e., wastes containing liquids that will readily pour.) Therefore, you must send your used oil to a facility that is capable of handling liquid waste or that can solidify the waste prior to disposal.

Other Regulations:

Regardless of whether you manage your used oil under the Used Oil Rule or as a solid or hazardous waste, there are Department of Fire & Building Services and OSHA regulations that you must follow. These regulations depend upon how you store your used oil and the quantity of used oil that you store.

<p style="text-align: center;">INSIDE STORAGE</p>	<p>TANKS</p> <ul style="list-style-type: none"> • Limited to 13,250 gallons unless the shop has a sprinkler system or unless the shop has separate 1-hour fire rated control areas for each additional 13,250 gallons. Exterior walls do not have to be modified in order to meet the 1-hour fire resistant rating criteria. Therefore, a shop can designate the entire building as the fire control area if the quantity of oil stored does not exceed 13,250 gallons. [Fire & Building Services] • Shops with sprinklers throughout the building are not limited as to the amount of oil that they can store inside the building (either in tanks or in drums.) [Fire & Building Services] • Must have secondary containment. A 4-inch high area/sill that surrounds the tank or drums is required in order to contain spills. This spill retention area must be cleaned out following a spill or when leaking oil accumulates. [Fire & Building Services] • Gasoline or other flammable materials should not be added to your used oil. Doing so may change the used oil's flash point, requiring that you follow more stringent requirements for inside storage. [Fire & Building Services]
<p style="text-align: center;">OUTSIDE STORAGE</p>	<p>TANKS</p> <ul style="list-style-type: none"> • Must be diked or must have a 2-hour fire resistant rating. This spill retention area must be cleaned out following a spill or when leaking oil accumulates. [Fire & Building Services] • Must be placed a minimum number of feet away from the building, the property line, and any right-of-way. Contact the Plan Review Division to determine the specific requirements that you must follow. [Fire & Building Services] • Label the tank with the words "Used Oil" <p>DRUMS</p> <ul style="list-style-type: none"> • Must be stored in a recessed area to contain oil spills and/or leaks. [Fire & Building Services] • Label the drum with the words "Used Oil" <p>TANKS OR DRUMS</p> <ul style="list-style-type: none"> • Outside storage areas must be graded to divert spills away from buildings or other exposures, or be surrounded with curbs at least 6 inches high and have appropriate drainage to a safe location for accumulated liquids. The storage areas must be protected against tampering or trespassing, where necessary, and must be kept free of weeds, debris, and other combustible material not necessary for storing used oil. [Fire & Building Services]

MANAGEMENT RESPONSIBILITIES

Managing your used oil may be done in a number of different ways. Listed below are the management options as well as the requirements for each of the available options. Also listed are suggested practices that you should follow in order to ease your regulatory requirements and improve the environmental health of your shop.

You Must:

- ! Regardless of whether you're following the Used Oil Rule or the Solid & Hazardous Waste Rules, or whether you store your used oil inside or outside, you must do the following:
 - if you store your used oil in a tank, the tank must meet the Indiana Department of Fire & Building Service's requirements for class I liquids (even though used oil is a class III(b) liquid.) Note that the Indiana Department of Fire & Building Services defines "tank" as anything that holds more than 60 gallons. [Fire & Building Services]
 - if storing used oil in drums, you must store no more than 13,250 gallons. [Fire & Building Services]
 - instruct employees to clean hands and arms frequently if they are exposed to used oil and/or grease to prevent skin irritation. [OSHA] Employees must not use gasoline to cleanse themselves or for other cleaning purposes. [OSHA]
 - instruct employees to change oil soaked clothing, as it is a fire safety hazard in addition to being a source of skin problems. [OSHA]
 - clean up spills promptly. [OSHA & IDEM]
 - keep oil storage containers and aboveground tanks in good condition. Drums and storage tanks used to store oil cannot be rusting or leaking.
 - label all used oil storage tanks (and piping) or containers with the words "USED OIL."
 - develop a Spill Prevention, Containment and Countermeasure Plan if you store oil in tanks greater than 660 gallon or have accumulative storage capacity in excess of 1,320 gallons. Call CTAP for assistance.
 - report oil spills (see Section 3.8 and Section 5.5 for information on spills and reporting.)
 - not apply used oil as a dust suppressant.
 - not store used oil in surface impoundments (i.e., lagoons.)
- ! If you are following the **Used Oil Rule**, you must:
 - recycle your used oil or burn it for energy recovery in an authorized device.
 - not mix used oil with hazardous wastes.
 - determine the halogen content of the used oil by using generator knowledge or by using a test kit for halogens (available from safety supply dealers.) If the used oil contains more than 1,000 parts per million total halogens, it is presumed to have been mixed with a hazardous waste and must be treated as a hazardous waste unless you can demonstrate that the source of the halogens was not from mixing a hazardous waste with your used oil.

- for off-site shipments, you must ensure that the transporter has an EPA ID number. You may transport less than 55 gallons of your own used oil (or oil that has been collected through a household do-it-yourselfer collection program) at any time to a used oil collection center or to your own aggregation point without an EPA ID number. *Note that an aggregation point is basically a collection center designed to accept small amounts of used oil and store it until enough is collected to ship it elsewhere for recycling. Aggregation points collect oil only from shops run by the same owner/operator and from individuals.*
- ! If you are following the **Used Oil Rule and Burning Used Oil On-Site**, you must:
- follow all of the above-listed requirements.
 - have a used oil burner with a maximum capacity of not more than 500,000 Btu/hr.
 - install the used oil burner in the garage area (not the shop's office) and in accordance with the regulations of the Indiana Department of Fire & Building Services. [Fire & Building Services]
 - vent the heater's combustion gases outside of the building. Note that the used oil burner cannot be connected to the heating duct work. [Fire & Building Services]
 - burn only used oil that the shop generates or used oil received from households that bring their used oil to your shop.
- ! If you are following the **Solid and Hazardous Waste Rules**, you must:
- determine if your used oil is a hazardous waste. If the oil is considered to be a hazardous waste, it must be managed according to the hazardous waste rules (see Chapter 3.)
 - if your used oil is not a hazardous waste, it still must be managed under IDEM's solid waste rules and sent to a facility that is permitted to accept this type of waste.

You Should:

- ! follow the Used Oil Rule.
- ! send your used oil to a permitted re-refining facility rather than sending it to a fuel-blender or burning it in your shop's used oil furnace.
- ! if you add waste fuels to your used oil, you should check with your hauler to ensure that they will accept the mixture.
- ! put designated drip pans under leaking vehicles while they are waiting to be repaired. Empty the designated drip pan when you move it from one vehicle to another or when the pan is half full (to avoid spills.) Designate specific drip pans for used oil, antifreeze and other liquid wastes to avoid mixing the wastes.
- ! drain and replace oil and other fluids in an area where there are no connections to the storm drain or the municipal sewer.
- ! place oil collection/drip pans under vehicles and lubricating operations to contain oil spills.
- ! place oil collection containers in close proximity to vehicle service areas. Reducing the distance used oil must be carried will reduce the likelihood of drips or spills reaching the shop floor.
- ! scoop up oil spills using either a squeegee and a dust pan or a shop vac, and pour the oil into your used oil tank or container. By cleaning up spilled oil in this manner, you will avoid generating and managing spill material clean-up waste. Remember that you must make a

hazardous waste determination on spill material clean-up waste unless your shop is following the Used Oil Rule **and** the spill material is burned for energy recovery. (See Section 3.8 for more information on spills.)

- ! segregate the different types of oils (e.g., used brake fluid, transmission fluid, etc.) generated at your shop unless your oil recycling company advises otherwise. Used oil haulers have differing restrictions regarding the mixing of used oils.
- ! if you know that your used oil has been contaminated with a substance that is not allowed by your used oil hauler, you should inform your hauler of this before your used oil is picked up. Some haulers do not test used oil prior to picking it up. Rather, they take a sample from each shop for later analysis, if needed. Once the entire load reaches the refinery, the load is tested. If the load does not meet the requirements, the service company will run the small samples from each shop to determine who is responsible for the contamination. The service company may then assess an additional fee to the shop responsible for contaminating the entire load.

You Should Consider:

- ! starting an oil collection program to recycle used oil from household do-it yourselves.

BACKGROUND ON OPTIONS TO CONSIDER

Starting a Do-It-Yourself (DIY) Oil Collection Program

The United States EPA estimates that millions of gallons of used oil are released into the environment each year by household do-it-yourselfers. By participating in a do-it-yourself (DIY) oil collection program, you can help prevent oil waste from polluting the environment and can also demonstrate your commitment to customer service and your community.

Prior to starting a DIY collection program, you must contact the Plan Review Division of the Indiana Department of Fire & Building Services to ensure that you are following applicable regulations. Your shop must also follow the management standards of IDEM's Used Oil Rule, and send the DIY oil to a recycler or burn it for energy recovery.

Many used oil transporters will pick up your used oil, including used oil that is collected from DIY, at no charge if you have a minimum of 200 gallons of used oil per pick-up. Some used oil transporters will also provide you with a double-walled oil storage tank and will train your staff in the proper collection of DIY used oil. Contact your used oil transporter to request additional information about participating in a DIY oil collection program or obtain the list of used oil recyclers via IDEM's web site.

Some suggestions for implementing a used oil recycling program include:

- ! Offer special reusable containers to do-it-yourselfers. Avoid accepting other used oil containers.
- ! Use a separate drum or tank for do-it-yourselfer oil to avoid potential contamination of your own used oil.
- ! Visually inspect used oil brought in by do-it-yourselfers. Do not accept suspicious materials.
- ! Have the do-it-yourselfers sign a log with a statement verifying the material is used oil only.
- ! Post a sign and provide written materials describing your program.
- ! Include this public service and any other environmental efforts in your advertisements.

OIL FILTERS

HAZARDS & RULES

Base Materials - Hazards & Impacts

The base materials in regular sized oil filters (i.e., filters that fit most automobiles and light trucks) have no hazards or impacts. Larger filters, however, such as those used in heavy-duty vehicles, are likely to be terne-plated. Terne is an alloy of tin and lead, and is used to strengthen the shells of larger oil filters.

Lead can get into the body by ingesting it (this usually occurs when putting hands or other objects contaminated with lead dust into the mouth) or by breathing lead dust. The effects of lead on the adult body include the following: problems with reproduction, digestion, and with memory and concentration; high blood pressure; nerve disorders; and muscle and joint pain. Lead is even more dangerous to children because their bodies are more sensitive to lead's effects and because their bodies absorb more lead than do adults' bodies.

Additives and Contaminants - Hazards & Impacts

When a used oil filter is removed from a vehicle, approximately one pint of oil may remain trapped in the filter. The used oil and sludge that remain in the filter may contain contaminants such as heavy metals that are picked up as the oil circulates through the engine. High concentrations of heavy metals may cause used filters to demonstrate hazardous waste characteristics, making the filters subject to hazardous waste regulations if the filters are not properly drained.

Regulatory Overview

There are several management options for handling your regular size used oil filters. The regulations that you must follow depend on whether you properly drain your used filters and what you subsequently do with them (e.g., recycle, burn, discard.)

Properly drained non-terne plate filters are exempt from Indiana's hazardous waste regulations and may be disposed as solid waste.

Undrained filters may be managed under Indiana's Used Oil Rule if the filters are recycled or burned for energy recovery. By following the Used Oil Rule, your shop can ease its regulatory requirements and reduce the environmental impact associated with disposal.

Undrained filters that are discarded are subject to all applicable solid and hazardous waste rules. See Chapter 3 for information on managing your hazardous wastes. Note that, even if your used oil filters are not considered to be a hazardous waste, they still cannot be sent to a landfill because of the restrictions on wastes containing free liquids (liquids that will readily pour). Instead, the filters must be managed under IDEM's solid waste rules and sent to a facility that is capable of handling liquid waste or that can solidify the waste prior to disposal.

Terne-plated filters that are properly hot drained and recycled are exempt from Indiana's

hazardous waste regulations. Terne-plated filters handled in any other manner must be managed as a hazardous waste. See Chapter 3 for information on managing your hazardous wastes.

REGULATIONS FOR REGULAR (NON-TERNE PLATED) USED OIL FILTERS

Management Option	Applicable Regulation
Properly Hot Drained	Exempt from Hazardous Waste Regulations
Recycled	Used Oil Rule
Burned for Energy Recovery	Used Oil Rule
Discarded	Solid & Hazardous Waste Rules

MANAGEMENT RESPONSIBILITIES

As stated above, managing your used oil filters may be done in a number of different ways. Listed below are the regulations that you must follow for each of the management options. Also listed are suggested practices that you should follow to ease your regulatory requirements and improve the environmental health of your shop.

You Must:

- ! properly manage the oil drained from the filters (see the *Oil* section in Chapter 4 for information.)
- ! if you choose to hot drain your used oil filters, you must:
 - puncture the filter anti-drain back valve or the filter dome end and hot drain the filters. (The term "hot drain" means to immediately drain the filter after it is removed from a vehicle that is at or near the engine's operating temperature.); or
 - perform any other equivalent hot draining method that will remove the used oil so that the filters contain no free liquids. Equivalent methods include crushing or dismantling the filters.
- ! if you do not hot drain your filters, you must either follow the requirements of the Used Oil Rule or determine if the filters demonstrate hazardous waste characteristics.
 - If you plan to follow the Used Oil Rules, see the Oil section in Chapter 4.
 - Filters that demonstrate hazardous waste characteristics are considered to be a hazardous waste and must be managed accordingly. See Chapter 3 for information on managing your hazardous wastes and Chapter 5 for information on recordkeeping and reporting requirements.
- ! manage terne-plated filters as a hazardous waste, unless they are properly hot drained and recycled.

You Should:

- ! follow the Used Oil Rule rather than the solid and hazardous waste rules (for oil that is drained from the filters.)
- ! hot-drain your filters for a minimum of 12 hours.
- ! store all oil filters in leak-proof containers to prevent spills.
- ! label storage containers "Used Oil Filters."
- ! recycle your used filters, rather than burning or discarding them. If you cannot recycle your used filters, burning them for energy recovery is preferred to disposal.
- ! manifest all properly drained oil filters on a bill of lading to a scrap metal recycling facility.
- ! maintain records regarding the transportation and recycling of used oil filters.
- ! purchase only non terne-plated oil filters from your filter supplier.
- ! if you are unsure as to whether the filters you are purchasing are terne-plated, call the manufacturer or supplier to ask.
- ! drain and recycle your terne-plated filters rather than managing them as a hazardous waste.

You Should Consider:

- ! purchasing an oil filter crusher and/or shredder to recover any remaining waste oil and to reduce the volume of filters disposed and associated disposal costs.
- ! using a service company to shred or crush your used filters to recover residual used oils prior to sending the filters to a scrap metal recycling facility.

BACKGROUND ON OPTIONS TO CONSIDER

Crushing used oil filters is the most effective way to remove any remaining oil. Crushing also allows you to fit more filters into each drum, and, because many service companies charge you by the drum (rather than the weight of the drum or number of filters in the drum), your shop can reduce the transportation and/or disposal costs associated with used oil filters.

You may either purchase equipment to crush the filters yourself, or you may send the filters to a service company to have them crushed and then sent to a recycler. A list of oil filter transporters, recyclers, and crushing machine vendors may be obtained via IDEM's web site.

REFRIGERANTS/MOTOR VEHICLE AIR - CONDITIONING SERVICE

HAZARDS & RULES

Base Materials - Hazards and Impacts

Motor vehicle air-conditioning systems (MVAC) have historically used the refrigerant CFC-12 (also known as Freon or R-12). R-12 is a chlorofluorocarbon that has been identified as causing damage to the ozone layer, which protects the earth from harmful ultraviolet radiation. A new refrigerant called HFC-134a (also known as R-134a) is being used in all new vehicles. R-134a is a hydrofluorocarbon, which is less harmful to the stratospheric ozone layer, but does contribute to global warming.

In addition to causing environmental degradation, R-12 and R-134a can present a hazard to human health when they are improperly handled or accidentally released into a poorly ventilated area. These refrigerants displace oxygen in the air, which makes breathing difficult and could result in asphyxiation. Therefore, when working with or storing air-conditioning refrigerants, always do so in well-ventilated areas in case of an accidental release.

Some mixtures of air and R-134a have been shown to be combustible at elevated pressures, which presents a second health hazard. Under no circumstances should equipment be pressure-tested or leak tested with mixtures of air and R-134a. Similarly, compressed air must not be used for leak detection in R-134a systems.

Refrigerant blends are also available. Blends are a mixture of several chemicals and are designed to emulate the characteristics of R-12. All EPA-accepted blends, such as R-22, R-142b and R-124, contain ozone-depleting HCFCs.

Additives and Contaminants - Hazards and Impacts

When refrigerant blends are mixed with R-134a or R-12, the resulting mixtures cannot be recycled. Similarly, whenever R-12 is contaminated with another refrigerant, not only can the mixture not be recycled; it must be managed as a hazardous waste. Because blends should not be mixed with R-134a or R-12, a separate recovery machine is needed specifically for blends.

Another problem with blends is that identifying and recovering blend refrigerants is more difficult than working with straight R-12 or R-134a. Refrigerants in your customers' MVAC systems should be tested prior to removal (use a refrigerant diagnostic tool) to determine if the system contains a specific blend or a "mystery" mixture of refrigerants. You should also check your recovery machine to ensure it can accept the refrigerant you plan to recover. Recovering incompatible refrigerants into your recovery machine could cause damage to your machine. And lastly, when a blend leaks from an MVAC system, the various components of the blend fractionate (i.e., do not leak at the same rate), making it impossible to predict the composition remaining in the system after a leak. The result is that you may not effectively top off an MVAC system because the mixture will not be in the correct proportions. Because of this, you may only recharge such refrigerants into the vehicle from which they originally came. The only exception

is for fleet vehicles with a common owner: recycled blend refrigerants may be moved among vehicles within such a fleet.

Regulatory Overview

The 1990 Clean Air Act Amendments required the phase out of CFC-based refrigerants used in MVAC systems, and stopped the production and importation of CFCs in 1995. The U.S. EPA regulates MVAC refrigerants and requires that they be either recycled on-site or sent to an EPA certified reclaimer. Shops that service MVACs must use EPA-approved recovery or recovery/recycling equipment and must have their technicians trained by an EPA-accredited training program. As mentioned previously, IDEM regulates contaminated R-12 refrigerant mixtures as a hazardous waste.

MANAGEMENT RESPONSIBILITIES

As the shop manager or owner, you can ensure your shop's compliance with EPA regulations by adhering to the following management practices. Also listed are suggested practices that you should follow in order to ease your regulatory requirements and improve the environmental health of your shop.

You Must:

- ! never intentionally vent refrigerants to the atmosphere.
- ! recover all refrigerants used in MVAC systems prior to beginning work on the system.
- ! have all MVAC service technicians trained and certified by an EPA-accredited training program in the proper use of refrigerant recovery/recycling equipment.
- ! show proof of technician certification in order to purchase MVAC refrigerants.
- ! use only EPA-approved recovery or recovery/recycling equipment to handle refrigerants.
- ! submit an MVAC equipment owner certification form to the EPA prior to commencing MVAC service operations (only one certification is required regardless of the number of units that your shop has.) See Attachment M for a copy of this form.
- ! either recycle R-12 on-site or sell/give recovered R-12 to an EPA-certified refrigerant reclaimer. If your R-12 is sent to a reclaimer, you must retain the name and address of the reclaimer.
- ! maintain the following records and certification forms on-site:
 - EPA equipment owner certification forms for at least one of your recovery or recovery/recycling machines;
 - certification forms for each trained technician and facility operator;
- ! not top-off a leaking MVAC system with a refrigerant other than what is currently present in the system.
- ! extract the old refrigerant from an MVAC system prior to charging the system with a new type of refrigerant.
- ! when retrofitting an MVAC system to accept a new type of refrigerant, you must change the fittings and label the MVAC system as containing the new refrigerant (such as R-134a, etc.)
- ! not use refrigerant blends or other refrigerant substitutes that have been disapproved by EPA.
- ! follow EPA regulations when converting your R-12 recovery equipment to recover R-134a or

blends.

- ! follow EPA regulations when converting your R-12 recycling equipment to recycle R-134a (prohibited from converting recycling equipment for use with blends.)
- ! handle R-12 that has been mixed with other refrigerants as a hazardous waste. See Chapter 3 for more information.
- ! properly manage compressor oil recovered from MVAC systems. See the *Oil* Section in Chapter 4 for information on managing oil from MVAC systems.
- ! when transporting refrigerants, label the shipment to meet DOT requirements. Possible shipping descriptions include: [DOT]
 - “Refrigerant gases, n. o. s., 2.2, UN1078, Non-Flammable Gas”
 - or
 - “Refrigerant gases, n. o. s., 2.1, NA1954, Flammable Gas”

Note that whenever “n. o. s.” is part of a shipping name, the description must be immediately followed by a list of those ingredients which produce the hazard.

R-134a:

- ! use only EPA-approved recovery or recovery/recycling equipment.
- ! recycle recovered R-134a on-site or send it to an off-site reclaimer to be purified to meet ARI Standard 700.
- ! have all MVAC technicians who repair or service R-134a systems trained and certified by an EPA-accredited training program. This training is not required if the technicians have already been certified to handle R-12.

Blends:

- ! if using a blend that contains HCFC-22, you must replace the vehicle's old hoses with new, less “barrier” hoses.
- ! use only EPA-approved recovery equipment, and dedicate this equipment specifically to blends and “mystery” mixtures.
- ! recover refrigerants with new or used equipment and manage it in one of the following manners:
 - ! you may dedicate a piece of older equipment (i.e., that was formerly used to recover uncontaminated CFC-12 or HFC-134a) to recover blends as well as contaminated CFC-12 or HFC-134a. However, once you choose to dedicate this equipment to recovering blends and contaminated mixtures, you may no longer use this equipment to recover uncontaminated CFC-12 or HFC-134a. Additionally, you must ship the refrigerants recovered from this equipment to a reclaimer or off-site for destruction (not allowed to be recycled on-site.)
 - ! you may recover a blend refrigerant using a new piece of EPA-approved equipment designed to recover, but not recycle, any single, specific blend refrigerant.
- ! recycle refrigerant blends only in EPA-approved equipment, and return the refrigerant to the vehicle from which it was removed. The only exception to this requirement is for fleets of vehicles with a common owner: recycled blend refrigerant may be moved among vehicles within such a fleet.
- ! have all MVAC technicians who repair or service systems with blends trained and certified

by an EPA-accredited training program. This training is not required if the technicians have already been certified to handle R-12 or R-134a. Technicians must be certified in order to purchase any of the blend refrigerants.

- ! certify to EPA that you own equipment that is approved to service these refrigerants. Note that this certification is a one-time requirement: if a shop purchased a piece of CFC-12 or HFC-134a recycling equipment in the past, and submitted the certification to EPA, the shop does not need to send a second certification to EPA when it purchases a second piece of equipment. This is the case regardless of the type of refrigerant the equipment is designed to handle.

For more information on refrigerants and EPA's final rule, visit EPA's web site at
www.epa.gov/ozone/title6/609
or call EPA's Ozone Protection Hotline at 800/296-1996.

You Should:

- ! have separate recovery or recovery/recycling units for each of the following (if your shop encounters these refrigerants): R-12, R-134a, and all other refrigerant mixtures.
- ! purchase a refrigerant diagnostic tool, a leak detector, a fluorescent dye and a black light.
- ! leak-test all systems. Note that you should not pressure test or use compressed air to test R-134a systems for leaks because, when mixed with air, R-134a is combustible at elevated pressures.
- ! urge your customers to have their leaking MVAC systems repaired rather than merely topped-off. Explain to customers that MVAC refrigerants are expensive, will continue to leak if the system is not repaired, and contribute to the damage of the ozone layer.
- ! test refrigerant purity prior to recovering from a customer's system because:
 - contaminated refrigerants may damage your recovery/recycling equipment and may result in unsatisfactory performance in your customers' MVAC system.
 - mixed refrigerants cannot be recycled and are subject to IDEM's hazardous waste regulations.
- ! manage compressor oil recovered from MVAC systems according to the Used Oil Rule (see the *Oil* section in Chapter 4 for information on this rule.)
- ! puncture and label your empty refrigerant tanks and send them to a scrap metal recycler for recycling. The label should contain the following information: your shop's name, address, date the tank was punctured, and your signature.

You Should Consider:

- ! recommending to customers with vehicles manufactured prior to 1993 that damaged MVAC systems be retrofitted to accept an EPA-approved substitute refrigerant, such as HFC-134a.
- ! if your shop does not have all of the equipment needed to properly diagnose and recover the refrigerants in your customers' MVAC systems, you should consider sharing equipment with neighboring shops or referring customers to a shop that is equipped to perform MVAC work.
- ! before choosing to purchase and use a refrigerant blend, consider whether it is readily and widely available, the cost of buying the appropriate recovery equipment for that refrigerant, the effect the refrigerant will have on vehicle warranties, and any special retrofitting needs that must be met (such as replacing hoses with barrier hoses or installing shut-off safety switches.) Remember that EPA approves refrigerants, but does not guarantee that any refrigerant will work in a specific MVAC system.

BACKGROUND ON OPTIONS TO CONSIDER

Servicing MVAC systems has become a complicated task. Fortunately, there is a great deal of information available on MVAC refrigerants, including refrigerant blends. Prior to purchasing blends or accepting them from your customers' MVAC systems, you should research the available information to determine if your shop is prepared to purchase all of the necessary equipment and to comply with the various regulations.

If your shop is a member of an association, check with your association to see how other shops in the area are handling blends. You may be able to share equipment or work cooperatively with neighboring shops by referring customers to each other depending on the refrigerant in each customer's MVAC system.

You may obtain a variety of information, including the EPA equipment certification form, a listing of organizations with EPA-accredited training programs, and EPA-approved third party refrigerant reclaimers by calling the Stratospheric Ozone Hotline at (800) 296-1996. You may also obtain information from EPA's auto air conditioning world wide web site:

www.epa.gov/ozone/title6/609

INTRODUCTION TO SOLVENTS

The regulations that you must follow depend on which type(s) of solvent and precleaner(s) you are using. Listed below are the types of solvents generally used by vehicle maintenance shops and an overview of the hazards and regulations associated with each. Refer to the sections that follow this introduction, *Petroleum-Based Solvents and Aqueous-Based Solvents*, for more information on the type of solvent used by your shop.

1. Aqueous (water) Based Solvents

Aqueous-based solvents are generally less toxic alternatives to petroleum-based solvents. Unlike petroleum-based solvents, there are generally no hazards or adverse impacts associated with the detergent and water solution found in aqueous-based solvents. The detergent used for aqueous parts washing may be an acid, alkaline or a citrus-based solution. Some aqueous systems use microbes to eat the oil and grease that accumulate in the cleaning system.

Aqueous parts washers may be in the form of a heated parts washing sink, an immersion tank, or a high-temperature spray cabinet. A high-temperature spray cabinet is similar to a large dishwasher in that it combines heat, soap and spraying action to clean dirty parts. This type of unit is available in various sizes, with the larger units having ample capacity for cleaning large parts.

Because aqueous-based solvents are generally non-hazardous, employee exposure to hazardous materials is reduced. Shops that use a high-temperature spray cabinet also benefit because the cabinet does the work of cleaning the part, allowing the employee to place the part in the cabinet and return to working on the vehicle.

If you are considering switching to an aqueous-based cleaner, be aware that some aqueous cleaners will cause the parts to rust, requiring that the parts be treated after they are cleaned.

Also be aware that used aqueous-based solvents may be a toxic hazardous waste if they are contaminated to the extent that they exhibit hazardous waste characteristics or are contaminated with a listed hazardous waste. Potential contaminants include oil and grease, lead, chromium, cadmium, and any precleaners used by your shop.

2. Petroleum-Based Solvents (mineral spirits).

New/virgin petroleum-based solvents are classified according to their flash point. The term “flash point” refers to the temperature at which a material could ignite if exposed to a spark. Materials with a low flash point (100-140° F) will ignite more easily than materials with a higher flash point (140-200° F.)

Low-Flash Solvents (100-140° F)

Petroleum-based solvents with a flash point from 100-140° F are also referred to as “low-flash solvents.” This type of solvent is a moderate fire hazard and will be an ignitable hazardous waste and, possibly, a toxic hazardous waste when disposed. Solvents of this type

are subject to OSHA, DOT, Department of Fire & Building Services and IDEM requirements.

If your shop uses a solvent with flash point of less than 110° F, be aware that the Department of Fire & Building Services prohibits the use of this type of solvent for cleaning floors or walls. This type of solvent may be used for parts washing only if used in a special, closed machine that is specifically approved for parts washing. The parts washing machine must be located in a separate, well-ventilated room constructed in accordance with the provisions of the Building Code for a Group H occupancy. Contact the Plan Review Division of the Department of Fire & Building Services for more information.

High-Flash Solvents (140-200° F)

Petroleum-based solvents with a flash point from 140-200° F are also referred to as “high-flash solvents.” Used high-flash solvent is not considered to be an ignitable hazardous waste unless it is contaminated and its flash point drops below 140° F.

Be aware that many high-flash solvents have a flash point that is only slightly above the 140° F threshold for this group of solvents. If you use precleaners that contain flammable materials, your used high-flash solvent may become a low-flash solvent (i.e., an ignitable hazardous waste) that is subject to more stringent regulations. In addition to potentially being an ignitable hazardous waste, a used high-flash solvent may also be a toxic hazardous waste if contaminated to the extent that it exhibits hazardous waste characteristics. If your precleaners contain any chemicals that are on the list of listed hazardous wastes, your used solvent will automatically be a hazardous waste.

3. **Chlorinated solvents**

Using chlorinated solvents can lead to significant compliance work for your shop. The best option is to avoid using this type of solvent. As mentioned in Chapter 1, chlorinated solvents are outside of the scope of this manual. Chlorinated solvents include the following:

- chlorobenzene (monochlorobenzene or benzene chloride)
- trichloroethylene (trichloroethane, ethinyl trichloride)
- chlorinated fluorocarbons
- methylene chloride (dichloromethane, methylene dichloride, methylene bichloride)
- tetrachloroethylene (perchloroethylene, ethylene tetrachloride, tetrachlorethylene)
- 1,1,1-trichloroethane (methyl chloroform, chloroethene)

Check the product label or your MSDS sheets for these chemicals. If you are using any of them, OSHA and IDEM air regulations will apply. Hazardous waste regulations may also apply. Call CTAP for assistance.

AQUEOUS-BASED SOLVENTS

HAZARDS & RULES

Base Materials - Hazards & Impacts

Aqueous (water) based cleaners are generally less toxic alternatives to petroleum-based solvents. Unlike petroleum-based solvents, there are generally no hazards or adverse impacts associated with the base materials found in aqueous-based solvents. These solvents are made up of water and detergent, which may be an acid, alkaline or a citrus-based solution.

Because the hazards and impacts of a given product will vary depending upon the product's formulation, you should check the Material Safety Data Sheet (MSDS) to determine if a specific aqueous-based solvent is hazardous to human health and/or the environment.

Additives and Contaminants - Hazards & Impacts

Used aqueous cleaners can contain a number of contaminants, including oil and grease, lead, chromium, cadmium, and any precleaners used by your shop. The oil and grease may emulsify (i.e., break down into small globules) in heated and mechanically agitated parts washing systems. The result is that the oil and grease may be more difficult to separate from the used cleaning solution, potentially resulting in contamination levels that do not meet publicly owned treatment works' (POTW) limits.

Both lead and chromium are frequently used as coatings on metal parts. A thin layer of these coatings may wash off when the parts are cleaned, leaving contaminants in the used solvent. High levels of these heavy metals may make the used solvent a hazardous waste. Precleaners are another source of contamination to your used aqueous solution. If your precleaners contain any chemicals that are on the list of listed hazardous wastes, your used solvent will automatically be a hazardous waste. Used solvent that exhibits a hazardous waste characteristic will also be a hazardous waste.

Regulatory Overview

Depending upon the type and level of contamination, your used solvent may be unacceptable for discharge to your local POTW or may be a hazardous waste. Note that, if you wish to discharge your aqueous cleaning solution, your shop's drain should be connected to a POTW. For information on discharging your used solvent, see the Wastewater section in Chapter 5. For information on making a hazardous waste determination and managing hazardous waste, see Chapter 3.

MANAGEMENT RESPONSIBILITIES

Listed below are the regulations that you must follow. Also listed are suggestions that you should follow in order to ease your regulatory requirements and improve the environmental health of your shop.

You Must:

- ! make a hazardous waste determination and manage your used aqueous solution accordingly.
- ! not discharge your used aqueous solution unless you are connected to a POTW or a holding tank or unless your shop has an NPDES permit. If you are discharging to a POTW, you must ensure that the discharge meets the effluent limits set by the POTW. See the Wastewater section in Chapter 5 for more information.
- ! when transporting solvent, label the shipment to meet DOT requirements. The following is a commonly used shipping description for used aqueous solvent:
“Hazardous waste, liquid, n. o. s., 9, NA3082, PGIII, D006, D039, DRG171,
Aqueous Parts Cleaner”

You Should:

- ! reduce the amount of contaminants in your used aqueous solution by doing the following:
 - use high-quality (i.e., soft) water in your aqueous cleaning machine. Hard water requires that you use more detergent in order to effectively clean parts, resulting in more contaminated wastewater.
 - preclean parts prior to washing them. Much of the dirt and oil may be removed by draining, wiping with a shop towel, or by scraping or wire brushing.
 - if you must use precleaners, substitute less toxic precleaners for those that contain hazardous and/or toxic constituents.
 - use a detergent that is a good cleaner, but a poor emulsifier (i.e., does not break oil and grease down into small globules.) Oil and grease that is not broken down will separate from the aqueous cleaning solution and can then be removed using an oil skimmer. See the Used Oil section in Chapter 5 for information on managing this oil.
 - allow your heated aqueous solution to cool prior to discharging it. The emulsified oil and grease should separate from the cleaning solution as it cools. Remove the oil and grease using an oil skimmer.
 - replace your aqueous solution before it exceeds your POTW’s discharge limits.
 - reduce the amount of solids in your used aqueous solution by filtering the solution as it is discharged.

Note that these practices may extend the life of your aqueous solution and/or help keep your used solution within your POTW’s discharge limits.

You Should Consider:

- ! purchasing an aqueous parts washer that is equipped with a skimmer and a timer.

BACKGROUND ON OPTIONS TO CONSIDER

Purchasing an aqueous parts washer with a skimmer and a timer will provide your shop with several benefits. First, the timer will allow you to automatically turn the washer's heater unit on and off at certain times each day. Turning the heat off at the end of each day not only saves energy, but also allows the aqueous solvent to cool and the oil and grease to separate. The timer can then schedule the skimmer to remove the oil and grease that has risen to the top of the solvent. Frequent skimming of these contaminants will keep your solvent at its peak operating efficiency. Finally, the timer can be set to automatically turn the heater unit back on so that the solvent is ready to use at the beginning of each work day.

PETROLEUM-BASED SOLVENTS

HAZARDS & RULES

Base Materials - Hazards and Impacts

Petroleum-based solvents (naphtha or mineral spirits) are widely used in solvent sinks to remove soils and oily residues from automotive parts. Petroleum-based solvents with a flash point below 140° F are ignitable. These solvents won't normally ignite, but may do so if they are heated and/or exposed to an open flame or electrical spark.

In addition to being ignitable, some types of petroleum-based solvents may irritate the eyes and skin and can affect the central nervous system if inhaled or absorbed through the skin. Petroleum-based solvents contain volatile organic compounds (VOCs), which contribute to the formation of ozone, a toxic component of urban smog and a contributor to lung damage in children, asthma sufferers and the elderly.

Additives and Contaminants

Many shops use supplemental cleaning products to pretreat carbon deposits and other heavy soils. These cleaning products typically contain ignitable and/or chlorinated solvents such as methanol, propane, xylene, methylene chloride, trichloroethane and/or tetrachloroethylene. The use of these products may cause your used solvent to be a listed hazardous waste as well as an ignitable hazardous waste.

In addition to precleaners, used solvent may be contaminated with lead and/or chromium, which are frequently used as coatings on metal parts. A thin layer of these coatings may wash off when the parts are cleaned, leaving heavy metals in the used solvent.

Regulatory Overview

Under IDEM's air regulations, all shops that use petroleum-based solvents in an immersion cleaning machine (solvent sink) or in a remote reservoir cleaning machine (part sprayer), must follow specific work practices to limit the amount of volatile organic compounds (VOCs) entering the air. These work practices are listed in the "You Must" section that follows.

IDEM's air regulations also restrict the type of parts washing solvent that may be used in Lake, Porter, Clark and Floyd Counties. These rules, which will be phased in over an eighteen-month period beginning November 1, 1999, require that solvents have a vapor pressure not to exceed two millimeters of mercury (2.0 mm Hg). Beginning May 1, 2001, solvent vapor pressure must not exceed one millimeter of mercury (1.0 mm Hg). Additional information is provided in the "You Must" section that follows.

Under IDEM's hazardous waste rules, used petroleum-based solvent with a flash point below 140° F is hazardous waste due to ignitability. The term "flash point" refers to the temperature at which a material could ignite if exposed to a spark. Used petroleum-based solvents with a flash point above 140° F are not regulated as a hazardous waste due to ignitability, but may be a hazardous waste due to toxicity depending upon the level and type of contamination.

Note that, if your shop is classified as a CESQG, disposing of approximately 30 gallons of hazardous waste in any one calendar month will change your hazardous waste generator status classification from CESQG to SQG. If your used petroleum-based solvent is determined to be a hazardous waste, you may easily move into the SQG classification when you change out your parts washer. Parts washers typically contain between 19 and 27 gallons of used solvent, making the amount of hazardous waste very near the 220 pounds per month threshold for SQGs.

Some vendors have begun **continued use programs**. Under such a program, the vendors directly reuse their customers' solvents without first treating or recycling the solvents. Under a continued use program, the vehicle maintenance shop using the solvent does not generate a waste and, therefore, does not need to count the solvent toward their generator status or make a hazardous waste determination on the solvent. See Section 2.6 (B) for information on making a hazardous waste determination.

MANAGEMENT RESPONSIBILITIES

Listed below are the management options that you must follow. Also listed are suggested practices that you should follow in order to ease your regulatory requirements and improve the environmental health of your shop.

You Must:

- ! not use gasoline as a solvent. [OSHA]
- ! if your solvent has a flash point less than 110 F, you must use the solvent in a special closed machine approved for parts washing. A machine of this type must be Universal Laboratories (UL) approved for flammable substances and equipped with a wire (to hold the lid open) and a fusible link, which will automatically close the unit in the event of a fire. [Department of Fire & Building Services]
- ! not use liquids with a flash point less than 110 F for cleaning floors or walls. [Department of Fire & Building Services]
- ! ensure that the connections on all drums are sufficiently tight that they do not allow vapor or liquid to escape. [OSHA]
- ! clean up all spills of petroleum-based solvents promptly. [OSHA]
- ! if you use petroleum-based solvents in immersion cleaning machines (solvent sinks) or in a remote reservoir cleaning machine (part sprayer), you must:
 - \$ keep your solvent tank covered when not in use to prevent evaporation.
 - \$ place a drain shelf in the basin of the parts washer. This shelf allows solvent to drain back into the solvent tank.
 - \$ drain all parts for at least fifteen (15) seconds or until part is no longer dripping.
 - \$ store used solvent to be disposed in tightly covered or closed containers.
 - \$ ensure that a permanent label summarizing the above work practices is affixed to the inside cover so it is readily visible to employees using the machine. If your machine does not come with a label, contact the manufacturer or your solvent supplier to obtain one.
- ! if you are located in Lake, Porter, Clark or Floyd counties, you must use solvent with a vapor pressure at or below two millimeters of mercury (2.0 mm Hg). Beginning May 1, 2001, solvent vapor pressure must not exceed one millimeter of mercury (1.0 mm Hg).

Date	Vapor Pressure Limit
November 1, 1999	two millimeters of mercury (2.0 mm Hg)
May 1, 2001	one millimeter of mercury (1.0 mm Hg)

These restrictions apply when solvent is sold to an individual or business in amounts greater than five (5) gallons during any seven (7) consecutive business days.

Beginning November 1, 1999, users of these lower vapor pressure solvents must also keep a record of each purchase, including the following information:

- | | |
|--|--|
| B name and address of the solvent supplier | B volume of each unit |
| B date of purchase, the type of solvent | B total volume of the solvent, and vapor pressure of the solvent |

A fact sheet providing more details on this regulation may be obtained by visiting IDEM's web site at www.state.in.us/idem/oam/index.html. You may also call CTAP for assistance.

- ! make a hazardous waste determination on your used petroleum-based solvent and manage it accordingly (see Chapter 3 for more information.) Note that your used solvent will be a hazardous waste because it is ignitable. It may also be a listed hazardous waste depending upon the contents of the virgin solvent or the contaminants in the used solvent.
- ! when transporting solvent with a flash point of 140 F or lower, label the shipment to meet DOT requirements.

You Should:

- ! store new petroleum-based solvent in sealed containers until ready for use.
- ! preclean parts using a cleaning process that does not involve hazardous solvents, such as manually cleaning the part with a wire brush..
- ! reduce the amount of solvent used by replacing solvent only when necessary. The shop employees who regularly use the solvent should be able to tell when the solvent begins to lose its effectiveness and needs to be changed. Test kits are available to help you make this determination.
- ! if you use two solvent tanks, skip having one of the tanks serviced while replacing solvent for the other washer as usual. Designate the parts washer with contaminated solvents for precleaning dirty parts and reserve the parts washer with new solvent for final cleaning. If your shop is a CESQG, having only one of your tanks serviced may have the added benefit of keeping your shop in the CESQG classification. Your shop may also need to limit the amount of hazardous wastes generated from other sources in order to remain below the 220 pound threshold.
- ! keep solvent and other wastes separated so that they can be recycled or properly disposed (adding a waste to a hazardous waste will increase the amount of hazardous waste that you generate).

You Should Consider:

- ! purchasing or leasing a solvent sink with a filter unit that will extend the life of your solvent by filtering out contaminants.
- ! using non-hazardous cleaning methods, such as an aqueous parts washers.

BACKGROUND ON OPTIONS TO CONSIDER**Purchasing or Leasing a Solvent Sink With a Filter Unit**

Some of the newer solvent sinks have filter units that extend the life of the solvent by filtering out contaminants. Dirty solvent passes through the filtering unit where contaminants are removed, and clean solvent is returned to the reservoir for reuse.

The type and location of the filters on the solvent sink vary depending upon the type of filtration system used. Some of the more commonly employed filtration systems are:

- B side-mounted disposable fabric filter units, which remove primarily particulate;
- B cyclonic filter units that use centrifugal force “cyclonic action” to remove solids. The solvent passes through a filtering unit where a spinning action takes place, causing the solids to settle out and allowing the clean solvent to be reused.
- B clay-containing filter units that are placed in the solvent reservoir or in the wash basin to remove primarily oil and grease.

Remember that a hazardous waste determination must be performed on the used filters prior to disposal.

Using Non-Hazardous Cleaning Methods, Such as Aqueous Parts Washers

For information on aqueous-based parts washing solutions, see the Aqueous Cleaners section in Chapter 4.

SORBENTS

(Includes spill clean-up materials and waste)

HAZARDS & RULES

Base Materials - Hazards & Impacts

Sorbents (absorbent material such as pigs, pillows and socks) are not hazardous unless they come into contact with hazardous materials or hazardous wastes.

Additives and Contaminants - Hazards & Impacts

As sorbents are used to clean up spills, they become contaminated with the spilled material and generally exhibit the same hazards and impacts. You should review the spilled material's material safety data sheet (MSDS) to determine the hazards associated with the material that was spilled.

Regulatory Overview

Your used sorbents and spill waste must be managed in one the following manners. The particular management option that you must follow depends on the type and extent of contamination, the quantity of contaminated sorbents generated per month, and whether the sorbents are recycled or disposed.

Note that the term "spill waste" includes sorbents as well as any contaminated soil, residue, debris, and articles from the cleanup of a spill or release of petroleum-contaminated materials. The term "petroleum-contaminated materials" includes spill waste that contains virgin or used petroleum such as: gasoline, diesel fuel, hydraulic fuel, crude or refined oils that do not contain polychlorinated biphenyls (PCBs), kerosene, and heating oils.

- **Recycling Petroleum-Contaminated Sorbents (and/or Spill Waste) under the Used Oil Rule:**
If your sorbents are contaminated with used oil or with a mixture of oil and other fuels, the sorbents may be burned for energy recovery under the Used Oil Rule. In order to comply with the Used Oil Rule, you must properly manage your oil-contaminated sorbents (i.e., don't mix other wastes with these sorbents), and you must either recycle your sorbents or burn them for energy recovery in an approved apparatus. See the *Oil* Section in Chapter 4 for more information on the Used Oil Rule.
- **Disposing of Contaminated Sorbents (and/or Spill Waste)**
If you cannot manage your sorbents and spill waste under the Used Oil Rule (e.g., because of contamination with a waste other than used oil or fuels), you must make a hazardous waste determination and manage them accordingly. Sorbents that exhibit hazardous waste characteristics or are contaminated with a listed hazardous waste must be managed as a hazardous waste. See Section 2.6 for information on making a hazardous waste determination.
- **Disposing of Petroleum-Contaminated Sorbents (and/or Spill Waste)**
You should manage your oil-contaminated sorbents under the Used Oil Rule when possible. If you have a spill that results in your shop's generating petroleum-contaminated debris and you

do not wish to manage the material under the Used Oil Rule, you must conduct a hazardous waste determination on the contaminated debris. Contact IDEM's Office of Land Quality, Industrial Waste Compliance Section or CTAP for assistance.

- **Disposing of Sorbents and/or Spill Waste as a Solid Waste (i.e., with your regular trash)**

If your used sorbents are not a hazardous waste, and they do not drip or accumulate free liquids (such as in the bottom of their storage container), you may dispose of them as solid waste.

Note that materials containing free liquids are prohibited from landfills. Also note that IDEM's air regulations prohibit air drying contaminated sorbents prior to disposal, and that mechanically wringing your sorbents may expose employees to the hazards inherent to the material that was spilled. Sorbents should be wrung with sufficient care to ensure safety for your employees.

MANAGEMENT RESPONSIBILITIES

Listed below are the management options you must follow. Also listed are suggested practices that you should follow in order to ease your regulatory requirements and improve the environmental health of your shop.

You Must:

- ! regardless of how you manage your contaminated sorbents and/or spill waste, you must:
 - not air dry contaminated sorbents to remove ignitable or toxic characteristics prior to disposal.
 - store contaminated sorbents in closed containers to prevent the evaporation of any contaminants into the air. If your sorbents are contaminated with flammable or combustible liquids, you must store them in a container meeting the requirements of the Indiana Department of Fire & Building Services. Contact the Plan Review Division for more information. [Department of Fire & Building Services]
- ! if you manage your petroleum-contaminated sorbents and spill waste under the Used Oil Rule, you must follow the requirements of this rule. See the *Oil* Section in Chapter 4 for the information on the Used Oil Rule.
- ! if you cannot manage your used sorbents and/or spill waste under the Used Oil Rule due to contamination with a waste other than used oil or fuels, you must:
 - make a hazardous waste determination on your used sorbents. If they are a hazardous waste, you must manage them accordingly (see Chapter 3.)
 - if your used sorbents or spill waste are not a hazardous waste, you must ensure that the material does not drip, contain free liquids, or result in the accumulation of free liquids (such as in the bottom of their storage container) prior to disposing of them with your regular trash.

You Should:

- ! manage your petroleum-contaminated sorbents and spill waste under the Used Oil Rule.
- ! segregate used sorbents that are a hazardous waste from other waste materials to avoid generating an increased volume of hazardous waste.
- ! accumulate and store hazardous sorbents in a drum that meets DOT requirements, with the DOT Class 9 hazard sticker placed on the side of the drum. When your drum is filled, label it

to include the proper DOT shipping name for hazardous waste sorbents

“RQ, Hazardous Waste, Solid, n.o.s., Class 9, NA3077, PG III.”

(Note that you must do this prior to shipping your hazardous sorbents, but are not required to meet DOT requirements while the waste is accumulating or being stored.)

You Should Consider:

- ! purchasing sorbents sealed in porous fabric socks, pillows, or pouches that contain biomass-derived material such as cellulose or peat.

BACKGROUND ON OPTIONS TO CONSIDER

Purchasing Biomass-Derived Sorbent Material

Sorbents made from plant cellulose, such as cotton and wood fibers, are very effective in absorbing liquids. Biomass-derived sorbents have an absorbency ratio of 4:1 when compared to most alternatives. The absorbency ratio is five times greater than clay.

TIRES

HAZARDS & RULES

Base Materials - Hazards & Impacts

When tires are improperly stockpiled or illegally dumped, they trap rainwater and become breeding grounds for disease-carrying mosquitoes and rodents. Another problem with used tire storage piles is that they can be a major fire hazard and are extremely difficult to extinguish. When tires burn, they release toxic gases into the air and leave behind a hazardous oily residue that pollutes the streams and groundwater.

Additives and Contaminants - Hazards & Impacts

There are no additives or contaminants associated with used tires.

Regulatory Overview

You are required to accept from your customers one used tire for each new or retreaded tire that is sold. For each new tire sold, you must collect a twenty-five (0.25) cent fee. You are entitled to keep one (1) percent of the fee; the remainder is to be paid to the State Department of Revenue when the State gross retail tax is due.

You may manage your used tires under one of two different rules. The first option is the “Used Tire Rule.” Under this rule, you must use a registered waste tire transporter to haul your tires to a registered used tire storage facility or to a tire recycler.

The second option is to dispose of your used tires under the Solid Waste Rules. Because whole tires are banned from solid waste landfills, you must cut your tires into pieces prior to disposing of them. Information on exactly how the tires must be cut is provided in the [AManagement Responsibilities@](#) section.

Regardless of whether you recycle your used tires under the Used Tire Rule or manage them as a solid waste, you must follow specific regulations pertaining to used tire storage areas. The transporting of used tires is also regulated when the number of tires exceeds 20 per load.

Note that this section does not cover OSHA’s regulations on servicing multi-piece and single piece rim wheels used on large vehicles such as trucks, tractors, trailers, buses and off-road machines. For more information on these requirements, contact BuSET or CTAP.

MANAGEMENT RESPONSIBILITIES

Listed below are the requirements pertaining to the sale and disposal of tires, including the two used tire management options previously mentioned. Also listed are suggested practices that you should follow in order to ease your regulatory requirements and improve the environmental health of your shop.

You Must:

- ! if you sell new tires, you must:
 - \$ post a sign in a location that is conspicuous to your customers. The sign must be at least 8.5" wide by 11" high and the lettering must be at least 18 point type. (The sign included in the binder pocket of this manual can be used to meet this Indiana Code requirement.) The written notice must indicate the following:

Do not put waste tires in the trash.
Recycle your waste tires.
State law requires us to accept your waste tires for recycling
or proper disposal if you purchase new tires from us.

- \$ accept from the customer at least one used tire for each new (or retreaded) tire sold.
- \$ collect a twenty-five-cent (0.25) fee for each new tire that is sold, and pay all but one percent (1%) of the collected fees to the State Department of revenue when the State gross retail tax is due.
- ! if you store used tires in a storage area that is no larger than 500 square feet, you must:
[Fire & Building Services]
 - stack tires in a orderly manner in an approved location so as not to create a fire hazard.
 - stack tires no higher than two feet from the ceiling and do not block any exit from the building.
 - for outside storage, you must not stack tires higher than 20 feet. The location of the tire pile must not constitute a hazard to adjacent buildings or property.
 - contact the Plan Review Division for regulatory information that may be specific to your shop.
- ! for storage areas greater than 500 square feet, contact the Plan Review Division for assistance. [Fire & Building Services]
- ! if you dispose of your used tires as a solid waste, you must:
 - alter the used tire by cutting it into 4 relatively equal pieces or by removing both of the sidewalls from the tread, resulting in 3 pieces. Note that this is an IDEM regulation. The landfill may require additional processing or may refuse to accept any tire material.
- ! if you transport more than 20 used tires, either whole or altered, you must use a tire hauler that is registered with IDEM and must manifest the tires using an Indiana Waste Tire Manifest form. A list of registered waste tire transporters and the Waste Tire Manifest form are both available via IDEM's web site.
- ! if you service multi-piece or single piece rim wheels used on large vehicles, you must follow OSHA regulations. Contact BuSET or CTAP for more information.

You Should:

- ! send your used tires to a tire recycler.
- ! educate your customer about tire manufacturer's recommended guidelines such as regularly checking tire pressure and rotating tires to extend the life of their tires.

Do not put waste tires in the trash.

Recycle your waste tires.

**State law requires us to accept your waste
tires for recycling or proper disposal
if you purchase new ones from us.**

WASTEWATER FROM SERVICE BAY DRAINS

HAZARDS & RULES

Base Materials - Hazards and Impacts

Water, in and of itself, is clean and non hazardous.

Additives and Contaminants - Hazards and Impacts

When water is contaminated with materials such as oil, antifreeze or other automotive fluids, it may contain high levels of total petroleum hydrocarbons and other contaminants. This wastewater may need to be treated in order to meet the pollutant limits of your local publicly owned treatment works (POTW). In some instances, the wastewater may even need to be managed as a hazardous waste.

Regulatory Overview

The Clean Water Act regulates the discharge of industrial wastewater and does not allow discharges of industrial wastewater to septic systems. Discharges to the waters of Indiana (including storm drains, rivers, streams, lakes, ditches, etc.) are only allowed if the business has a National Pollutant Discharge Elimination System (NPDES) permit from IDEM's Office of Water Management (OWM.) As mentioned in Chapter 1, this manual does not cover NPDES permitting requirements, as these permits are complex and are not recommended for small businesses. Contact CTAP or OWM if you are interested in obtaining more information on NPDES permitting.

If your shop discharges its wastewater to the sanitary sewer, you must meet the standards (effluent limits) set by the receiving POTW. In order to meet these standards, some shops may need to treat their wastewater prior to discharging it to the sewer. You should contact your local POTW to determine the type and amount of pollutants that you may discharge to the sewer.

Depending upon the type and level of contaminants in your shop's wastewater, the wastewater may be considered to be a hazardous waste. When hazardous waste enters the sanitary sewer, it is no longer regulated as hazardous waste, but rather, is regulated by IDEM's Office of Water Management and the publicly owned treatment works (POTW) that receives the wastewater.

Shops with holding tanks are required to have a construction permit and to make a hazardous waste determination on their wastewater (note that, because wastewater from holding tanks does not enter the sanitary sewer, the wastewater remains regulated under the hazardous waste rules.) Wastewater that meets the POTW's standards may be hauled directly to the POTW. If the wastewater does not meet the POTW's standards, but does meet the standards of another permitted wastewater treatment facility, the wastewater may be hauled to that facility.

MANAGEMENT RESPONSIBILITIES

How you manage your shop's wastewater will depend upon the location where your bay drains discharge. If you do not know where your drains discharge, begin by doing the following:

- Check your sewer bill to determine if you are charged for services by your local POTW. If you are charged for this service, your shop is most likely connected to the POTW.
- Walk the property line to look for outfall pipes.
- Talk with neighbors to determine if outfall pipes originate from their property.
- Check with your county sanitation department to determine if they will add a colored dye to your wastewater to locate your discharge (sewer and excavating companies also perform this service.)
- Call the Indiana Underground Plant Protection Service (Call Before You Dig) at 800/382-5544. This service is available 24 hours a day, 365 days a year.

Note that older shops may have unauthorized connections to storm sewers because sanitary sewers may not have been available when the shop was built. In many areas, storm drains became available prior to sanitary sewers, and, as a result, industries connected to storm sewers.

Listed below are the management responsibilities that you must follow depending upon where your shop's bay drain discharges. Also listed are suggested practices that you should follow in order to ease your regulatory requirements or to avoid wastewater requirements altogether.

If You Discharge to a Septic System or Directly to the Environment:

You Must:

- ! if your drain leads to a storm drain, river, stream, lake or to the ground, you must obtain an NPDES permit from OWM. The requirements for NPDES permitting are complex and are not well suited for the majority of small businesses. More suitable options include temporarily plugging your drains to become a "dry" shop, connecting to the local POTW, or installing a holding tank. Call CTAP for assistance.
- ! if your drain leads to a septic system, you must connect to the sanitary sewer or install a holding tank.
- ! if your shop does not have an oil/water separator, you must have one installed, and it must meet the design requirements of the Indiana Department of Fire & Building Services. Contact the Plan Review Division for specific design requirements. [Fire & Building Services] Prior to installing your oil/water separator, you must submit plans, specifications, and a construction permit application to OWM. An application can be obtained by contacting OWM at (317) 232-8645.

You Should:

- ! install wastewater containment sumps or holding tanks and have your wastewater hauled to a permitted wastewater treatment facility or connect your drains to a municipal sanitary sewage system
- ! follow the "you should" recommendations that reflect your new discharge status (either to the Sanitary Sewer or Holding Tank)
- ! follow the "you should" recommendations for all shops

If You Discharge to a Sanitary Sewer or POTW:

You Must:

- ! if your bay drains discharge into the sanitary sewer system leading to a POTW, you must contact your local POTW to obtain information on the effluent limits (limits on pollution in your wastewater) and to notify them that you are discharging to their system. You must also meet all effluent limits set by the POTW. You may obtain a copy of the local sewer use ordinance (i.e., discharge rules) from your local municipal or district POTW. A listing of prohibited discharges and of Indiana's 45 approved POTW wastewater treatment programs can be obtained from IDEM's web site. If you discharge a substance into the sanitary sewer, which, if otherwise disposed, would be hazardous waste, you may need to submit a one-time notification to your local POTW and IDEM's Office of Land Management. Contact CTAP, IDEM's Office of Water Management, or your local POTW for more information. Note that your hazardous waste may not meet the effluent limits of your local POTW.
- ! if your shop does not have an oil/water separator, you must have one installed, and it must meet the design requirements of the Indiana Department of Fire & Building Services. Contact the Plan Review Division for specific design requirements. [Fire & Building Services] Prior to installing your oil/water separator, you must submit plans, specifications, and a construction permit application to OWM. An application can be obtained by contacting OWM at (317) 232-8645.
- ! schedule regular preventive maintenance to keep your oil/water separator operating at peak efficiency. [Fire & Building Services]
- ! ensure that your floors drain to approved oil-water separators or traps discharging to the sewer in accordance with the Plumbing Code. [Fire & Building Services]
- ! have the contents of oil separators or traps collected at sufficiently frequent intervals and removed from the premises to prevent oil from being carried into the sewers. Self-closing metal cans must be used for all oily waste. [Fire & Building Services]
- ! if your shop does not meet the POTW's effluent limits, you must:
 - change your work practices (i.e., preventing materials from entering your bay drains) so that your effluent meets the POTW's limits; or
 - install pretreatment equipment and schedule regular preventive maintenance to keep the equipment operating at peak efficiency so that your effluent meets the POTW's limits.

You Should:

- ! follow the "you should" recommendations for all shops that are listed below

If You Discharge to a Holding Tank:

You Must:

- ! if your drain leads to a holding tank, you must obtain a construction permit from OWM for the installation of the tank and have permission to haul your wastewater to the POTW. Your hauler will usually take responsibility for working with the POTW to ensure that they will accept your wastewater.
- ! have an oil/water separator that meets the design requirements of the Indiana Department of Fire & Building Services. Contact the Plan Review Division for specific design

requirements. [Fire & Building Services] Prior to installing your oil/water separator, you must submit plans, specifications, and a construction permit application to OWM. An application can be obtained by contacting OWM at (317) 232-8645.

- ! if your non-hazardous wastewater does not meet the POTW's effluent limits, you must have it hauled to a permitted treatment facility.
- ! if your wastewater is determined to be a hazardous waste, you must:
 - ensure that your holding tank meets a number of special standards required for generators that accumulate hazardous waste in tanks. These standards include, but are not limited to: special treatment and storage requirements depending on the flash point of the material stored in the tank; secondary containment; and daily and/or weekly monitoring of the tank and its contents. Contact CTAP or IDEM's Office of Land Quality for assistance.
 - properly manage your wastewater (refer to Chapter 3 for information on the proper handling of hazardous wastes.)
 - count your wastewater toward your hazardous waste generator status (see Section 2.6.)
Note that, when hazardous waste enters the sanitary sewer, it is no longer regulated as hazardous waste, but rather, is regulated by IDEM's Office of Water Management and the publicly owned treatment works (POTW) that receives the wastewater. Because wastewater from your holding tank does not enter the sanitary sewer, the wastewater continues to be regulated as a hazardous waste.

You Should:

- ! avoid generating wastewater, especially hazardous wastewater, by following the "You Should" and "You Should Consider" recommendations for all shops that are listed below.
- ! if your wastewater is nonhazardous, you should ask your hauler for written confirmation that the POTW accepted your shop's wastewater. Note that POTWs do not accept hauled wastewater that is a hazardous waste.

For All Shops:

You Should:

- ! post signs at sinks and paint stencils at drains to remind employees not to pour wastes into floor drains, sinks, outdoor storm drains or other sewer connections.
- ! review material safety data sheets for all products used at your shop and replace products that contain chlorinated and/or toxic solvents with more environmentally friendly, aqueous-based products.
- ! store used automotive fluids in leak-tight containers for recycling or disposal.
- ! use spill trays when draining automotive fluids or when adding fluids to a vehicle.
- ! use dry procedures such as sweeping shop floors rather than hosing them down with water.
- ! install secondary containment barriers around storage areas containing liquid materials.
- ! ensure that spill prevention and containment equipment, and cleanup supplies readily accessible to employees.

You Should Consider:

- ! building a solids tray at the drain's entrance to reduce sludge buildup in you sump or oil/water separator.
- ! installing a temporary plug in your bay drains and becoming a "dry shop."

BACKGROUND ON OPTIONS TO CONSIDER

You may become a "dry shop" by eliminating water from your cleanup process and by preventing leaks and spills. By becoming a "dry shop," you eliminate the need to monitor your wastewater and, potentially, to install expensive wastewater pretreatment equipment.

In order to become a "dry shop," you should:

- ! identify and control all wastewater discharged from your facility by ensuring that employees do not pour liquid wastes into floor drains, sinks, outdoor storm inlets, or other sewer connections. Post signs at sinks and paint stencils at drains to remind employees. Seal your drains, using a temporary drain cover or an inflatable plug.
- ! prevent leaks from vehicles and equipment by:
 - placing designated drip pans under leaking vehicles while they are awaiting repairs. Make the repairs as soon as possible. You should:
 - ☐ keep a portable inflatable berm and absorbent material on hand.
 - ☐ drain all fluids, including air conditioner coolant, from wrecked vehicles upon arrival.
 - ☐ maintain your shop floor equipment. Check your equipment for leaks frequently.
- ! prevent drips and spills when working on vehicles by:
 - draining and replacing motor oil, coolant, and other fluids in a designated area where there are no connections to the storm drain or the municipal sewer. Clean up spills before they reach a drain.
 - emptying and wiping the designated drip pans when you are finished working on the vehicle, or when they are about half full, to avoid spills.
 - keeping a designated drip pan under the car while you unclip hoses, unscrew filters or remove other parts. Use larger, flat, low-brimmed pans under cars where mechanics are working and where ordinary drip pans are too cumbersome.
 - immediately transfer used fluids to their proper container. Don't leave drip pans or other open containers unattended.
- ! promptly clean up drips and spills:
 - For small spills:
 - ☐ scoop up the spilled material using a dust pan and squeegee, when possible (such as with spilled oil). If not thick enough to scoop, clean spills with a rag or absorbent. Do not wash spilled materials down the drain.
 - ☐ use a damp mop for routine cleanup, and wet mop the floor only in the areas that need it.
 - For medium spills:
 - ☐ use absorbent "snakes" as temporary booms to contain a liquid while you clean it up.
 - ☐ use dry absorbent material such as "kitty litter" or "floor dry" to soak up the liquids.
 - ☐ perform a hazardous waste determination on absorbent materials prior to disposal.

- ☒ use a wet/dry shop vacuum cleaner to collect spills for storage in segregated waste containers. If you keep several vacuums on hand, you can designate one for each waste (motor oil, antifreeze, etc.) and recycle the liquid. **Do not use vacuums for gasoline, solvents, or other volatile fluids because of the explosive hazards.**
- For larger spills or for more information on spill management requirements, refer to Section 3.7.

**Do not pour wastes down this drain
or any other drain.**

WIPES

HAZARDS & RULES

Base Materials - Hazards & Impacts

Wipes (industrial shop towels, rags, paper towels, gloves, cotton swabs, etc.) are not hazardous unless they come into contact with hazardous materials or hazardous wastes.

Additives and Contaminants - Hazards & Impacts

As wipes are used to clean up spills and remove oils, they become contaminated with automotive fluids and cleaning solvents. Many products used in the vehicle maintenance industry, such as engine degreasers, fuel injection cleaners, and brake cleaners and fluids contain hazardous solvents that are flammable (ignitable) and/or toxic if inhaled or adsorbed through the skin. Product material safety data sheets, (MSDS) should be reviewed to determine if products used at your facility contain hazardous materials.

Regulatory Overview

IDEM regulates **disposable** wipes that are considered to be a hazardous waste or a solid waste. You must make a hazardous waste determination on your used disposable wipes. If your contaminated wipes are not a hazardous waste, you must manage them as solid waste. If you determine that you must manage your disposable wipes as a solid waste, contact your land disposal facility for additional requirements.

If the products used at your facility contain any of the following constituents, then your **disposable** wipes, when contaminated, could exhibit hazardous characteristics and may be regulated as a hazardous waste by IDEM:

- heavy metals such as arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver;
- chlorinated solvents such as monochlorobenzene; 1,4- dichlorobenzene; 1,2-dichloroethane; 1,1-dichloroethylene; pentachlorophenol; methylene chloride; trichloroethane; trichloroethylene; tetrachloroethylene and any chlorinated fluorocarbons; or
- toxic solvents such as benzene, toluene, pyridine, 2-ethoxyethanol, methyl ethyl ketone, and 2-nitropropane.

If the products used at your shop are a listed waste when discarded (i.e., contain a chemical or chemicals described on the list of listed wastes), your contaminated wipes will automatically be a hazardous waste when disposed. The list of listed wastes is available by visiting IDEM's web site.

Contaminated wipes that are **laundered** are not regulated as a hazardous waste unless they are used to clean up spills of hazardous waste or unless a hazardous waste is added to the container of wipes. They are, however, still regulated by IDEM's Office of Air Management, OSHA and the Department of Fire & Building Services.

MANAGEMENT RESPONSIBILITIES

Managing your used wipes may be done in a number of different ways, depending upon the type of wipes that you use and the contaminant(s) that have been absorbed. Listed below are the management options you must follow. Also listed are suggested practices that you should follow in order to ease your regulatory requirements and improve the environmental health of your shop.

You Must:

For laundered wipes, you must:

- ! if you are sending reusable wipes that exhibit hazardous waste characteristics to a laundry, you must:
 - store contaminated wipes in closed containers to prevent the evaporation of any contaminants into the air. If the wipes are contaminated with flammable or combustible liquids, you must store the wipes in a container meeting the requirements of the Indiana Department of Fire & Building Services. Contact the Plan Review Division for more information. [IDEM and Department of Fire & Building Services]
 - not use wipes to clean up spills of hazardous wastes. Wipes that are sent to a laundry are not regulated as a hazardous waste unless they were used to clean up spills of hazardous wastes. If your wipes were used for this purpose, they must be managed as a hazardous waste.
 - ensure that your storage containers are not accumulating free liquids in the bottom of the container. If the container has free liquids, transfer the free liquid into another container and manage by its hazardous classification. Laundries will not accept wipes containing free liquids.

You Should:

For laundered wipes, you should:

- ! provide the commercial laundry with material safety data sheets for all products used at your facility.
- ! recover as much free liquid from contaminated wipes as possible by wringing the wipes. Industrial laundries may not accept wipes containing any free liquids. Contain liquids wrung from wipes and manage these liquids with other hazardous or non-hazardous liquid wastes, whichever is appropriate.
- ! segregate contaminated wipes from your uniforms and other laundry items.
- ! follow management practices for handling soiled reusable textiles outlined by the Uniform & Textile Service Association. This guidance document can be obtained from IDEM's web site.

You Must:

For disposable wipes, you must:

- ! make a hazardous waste determination on your used wipes. If the wipes are a hazardous waste, you must manage them accordingly (see Chapter 3.)
- ! not air dry contaminated wipes to remove ignitable or toxic characteristics prior to disposal.
- ! store contaminated wipes in closed containers to prevent the evaporation of any contaminants into the air. If your disposable wipes are contaminated with flammable or combustible liquids, you must store the wipes in a container meeting the requirements of the Indiana Department of Fire & Building Services. Contact the Plan Review Division for more

information. [IDEM and Department of Fire & Building Services]

You Should:

For disposable wipes, you should:

- ! segregate hazardous wipes from non-hazardous waste materials to avoid generating an increased volume of hazardous waste.
- ! substitute less toxic commercial products for products that contain hazardous and/or toxic constituents to minimize the generation of hazardous wipes.
- ! accumulate and store hazardous wipes in a drum that meets DOT requirements, with the DOT Class 9 hazard sticker placed on the side of the drum. When your drum is filled, label it to include the proper DOT shipping name for hazardous waste wipes

“RQ, Hazardous Waste, Solid, n.o.s., Class 9, NA3077, PG III.”

(Note that you must do this prior to shipping your hazardous wipes, but are not required to meet DOT requirements while the waste is accumulating or being stored.)

GENERAL WORK AREA

You Must:

GENERAL WORK AREA: [OSHA unless otherwise noted]

- ! prohibit smoking and/or open flames in areas used for servicing motor vehicles. [Fire & Building Services]
- ! ensure that all work areas are clean, free of slip or trip hazards, and well-lit.
- ! ensure that aisle spaces are provided and are kept clear.
- ! ensure that aisle spaces are a minimum of 48 inches wide. [Fire & Building Services]
- ! provide employees with restrooms, including washing facilities.
- ! cover or guard any pits or floor openings.
- ! for walkways elevated more than 48 inches, provide guard rails. In cases where the walkway is adjacent to dangerous equipment, pits or tanks, the walkway must have standard railing and toeboard regardless of its height.
- ! ensure that stairs are at least 22 inches wide, have a nonslip finish, and are made from sturdy materials. Standard railings are required on the open sides of all exposed stairways and stair platforms. Note that portable ladders are not to be used as permanent fixtures.
- ! mark metal ladders with "CAUTION" Do not use around electrical equipment."
- ! not allow employees to eat in areas where hazardous chemicals are stored or used.
- ! require employees to properly wash their hands after handling any chemical products.
- ! have your shop's means of egress (exterior shop doors) marked with highly visible Exit signs.
- ! provide appropriate fire extinguishers, and train employees in their use. [Fire & Building Services]
- ! inspect, maintain and test portable fire extinguishers.
- ! if employees are expected to extinguish small fires, employees must be trained annually on the use of fire extinguishers and the hazards of fire fighting.
- ! not block or hinder access to fire extinguishers.
- ! not hang items (jackets, hoses, etc.) from fire extinguishers.

You Should:

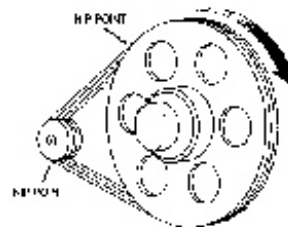
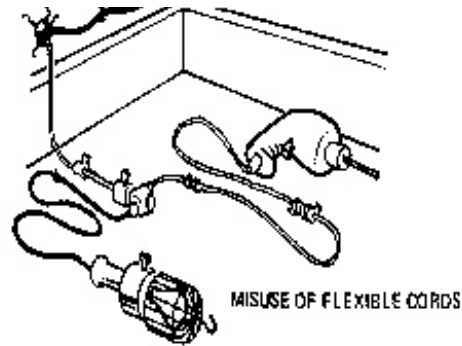
MISCELLANEOUS:

- ! install a cross connection control device (backflow preventer) wherever you have directly connected any chemical (even soap) or waste to the drinking water supply. This device prevents contaminated water from being siphoned back through the pipes, potentially contaminating the entire drinking water supply. Note that cross connection control devices are required for car washes.
- ! make sure your shop has adequate electrical outlets. Extension cords should only be used temporarily.
- ! laminate or otherwise protect posters and signs located near solvent sinks to prevent them from deteriorating.

GENERAL MACHINERY AND TOOL REQUIREMENTS

You Must:

- ! use only approved hand tools that are in good condition.
- ! ensure that all cord operated tools are grounded or are the approved double insulated type.
- ! ensure that all portable fans have a protective guard with half inch or smaller openings.
- ! ensure that employees are trained in the proper operation of each piece of equipment.
- ! ensure that the machine operator can safely reach all controls from the machine's point of operation and that the operator can cut off the power to the machine without leaving his/her position at the point of operation. The point of operation is the area of the machine where material is positioned and work is being performed.
- ! ensure that all equipment capable of storing energy is locked out and tagged during servicing and repairs. (See the Lockout/Tagout section of this manual.)
- ! be aware that ground fault circuit interrupters (GFCI) are required for new outlets, and in some instances, on existing outlets. Contact BuSET or CTAP for more information.
- ! ensure that the machine's "pinch points" (also known as "nip points") are guarded with a protective cover. A pinch point is any point, other than the point of operation of the machine, where a part of the body may be caught by the machine's moving parts.
- ! follow appropriate regulations for welding operations (see Welding section in Chapter 4.)
- ! follow appropriate regulations for grinding operations (see Grinding section in Chapter 4.)



You Must:

AIR COMPRESSORS AND COMPRESSED AIR: [OSHA]

- ! ensure that air compressors are properly maintained and operated according to manufacturer's recommendations.
- ! post signs warning of the automatic start-up feature of air compressors.
- ! **not** use compressed air to clean off clothes or body.
- ! not use compressed air for cleaning unless the pressure is reduced below 30 psi and proper chip guards are in place.

- ! not use compressed air when working on brake jobs, unless within a self-enclosed vacuum system. (See Brake and Clutch repair section in Chapter 4.)
- ! regularly drain moisture from the lowest point of pressure in the line.

You Must:

HOISTS OR CRANES:

- ! ensure that the rated load is marked and is visible to the operator.
- ! ensure that the hoist or crane is able to hold up to 125% of its rated load.
- ! not carry loads over people.

You Must:

LIFTS:

- ! have a locking mechanism in place anytime someone is under the lift. Lifts that have a locking mechanism only when the lift is fully extended must only be used in the fully extended position.
- ! ensure that lifts not having a built-in locking mechanism are secured with an adjustable jack capable of supporting three times the lifts rated capacity. Secure the lift, not the car.
- ! ensure lifts are not leaking. Call IDEM's Spill 24-Hour Emergency Hotline to report leaks and spills.

**317/233-7745 local and out-of-state
or
toll-free at 888/233-7745 (in-state only)**

WARNING:

**This air compressor is equipped with
an automatic start-up feature**

GRINDING (ABRASIVE WHEEL MACHINERY)

HAZARDS & RULES

Base Materials - Hazards and Impacts

Grinding is performed by using an abrasive wheel, made up of individual particles that are bonded together to form a wheel. The hazard with abrasive wheels is that, if not properly mounted and used, the wheel can explode, sending sections of the wheel flying out at high speeds. The pieces of the wheel can strike the machine operator, causing death or serious injury.

Another hazard associated with abrasive wheel machinery is the rotating motion of the spindle end, nut, and flange projections. To avoid injury as a result of contact with these mechanical parts, the side of the wheel must be covered to enclose these parts (some exceptions are allowed and are listed in the “You Must” section that follows.)

Regulatory Overview

OSHA

To protect the machine operator as well as other employees, who are in the area, machine safeguarding is required. A good rule to remember is: Any machine part, function, or process, which may cause injury, must be safeguarded. Machine safeguarding may be done by using controls or by eliminating the hazard (i.e., the use of the equipment.)

Three basic areas of machines require safeguarding:

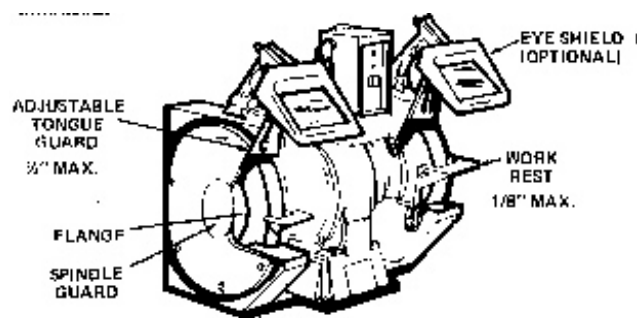
- 1) *The point of operation*: the point where work is performed on the material, such as grinding, gutting, or boring.
- 2) *Power transmission apparatus*: all components of the mechanical system, which transmit energy to the part of the machine, performing the work. These components include flywheels, pulleys, belts, connecting rods, couplings, cams, spindles, chains, cranks, and gears.
- 3) *Other moving parts*: all parts of the machine which move while the machine is working. These can include reciprocating, rotating, and transverse moving parts, as well as feed mechanisms and auxiliary parts of the machine.

MANAGEMENT RESPONSIBILITIES

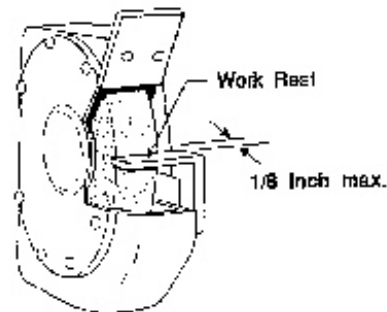
Listed below are the practices that you must follow in order to limit potential hazards associated with the use of grinding wheels. Also listed are suggested practices that you should follow in order to provide additional measures of safety.

You Must:

- ! use goggles or a face shield when using a grinder.
- ! ensure that your grinder is grounded and has its own on/off switches.
- ! ensure that abrasive wheels are only used on machines that have safety guards, with the following exceptions:
 - wheels used for internal work while within the work being ground;
 - mounted wheels, used in portable operations, 2 inches and smaller in diameter; and
 - type 16, 17, 18, 18R, and 19 cones, plugs, and threaded hole pots where the work offers protection from the debris of the spinning part in the event that this part should break. (If you are unsure as to which type of equipment you have, check the information on the equipment or the purchase records.)
- ! ensure that abrasive wheel safety guards cover the spindle end, nut, and flange projections (i.e., ensure that the machine has side guards), except when:
 - the object being ground provides a suitable measure of protection to the operator in the event that the wheel should break;
 - the work entirely covers the side of the wheel; and
 - machines are designed as portable saws.



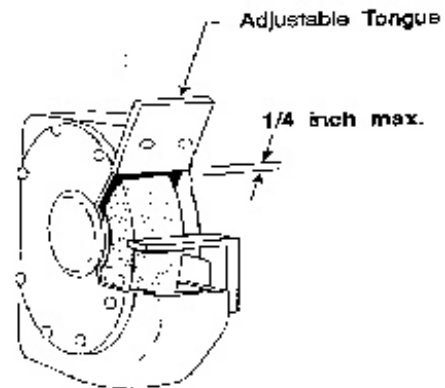
- ! for offhand grinding machines (i.e., machines that require that the operator stand directly in front of them), adjustable work rests made of rigid construction must be used to support the work. The work rests must be kept adjusted closely to the wheel with a maximum opening of 1/8 inch to prevent the work from being jammed between the wheel and the rest, which could cause the wheel to break. Because your grinding wheel will likely decrease in size each time that you use it, it may be necessary to adjust the work rest **after** each use to ensure that the distance does not exceed 1/8 inch.



! ensure that the safety guards for bench and floor stands, and for cylindrical grinders do not expose the grinding wheel periphery for more than 65 degrees above the horizontal plane of the wheel spindle. For example, if you have a six-inch grinding wheel, only a 5.1 inch section of the outside edge of the wheel may be exposed. A safety guard must enclose the remaining portion of the wheel. The exposed portion of the wheel must be above the horizontal plane, or top half of the wheel.

! ensure that the protecting member of the abrasive wheel safety guard (tongue guard) is adjusted so that the distance between the wheel and the adjustable tongue does not exceed 1/4 inch.

Because your grinding wheel will likely decrease in size each time that you use it, it may be necessary to check and/or adjust the tongue guard **after** each use to ensure that the distance does not exceed 1/4 inch.



! immediately before mounting, you must closely inspect and sound (using the ring test) all grinding wheels to ensure they have not been damaged. To perform the ring test, hold the wheel through its center, using your finger or a screwdriver or similar object to support the wheel. Gently tap the wheel on

each of its four quadrants with a light non-metal object such as a plastic or wooden screwdriver handle. The wheel should ring. If the wheel does not ring, don't use it.

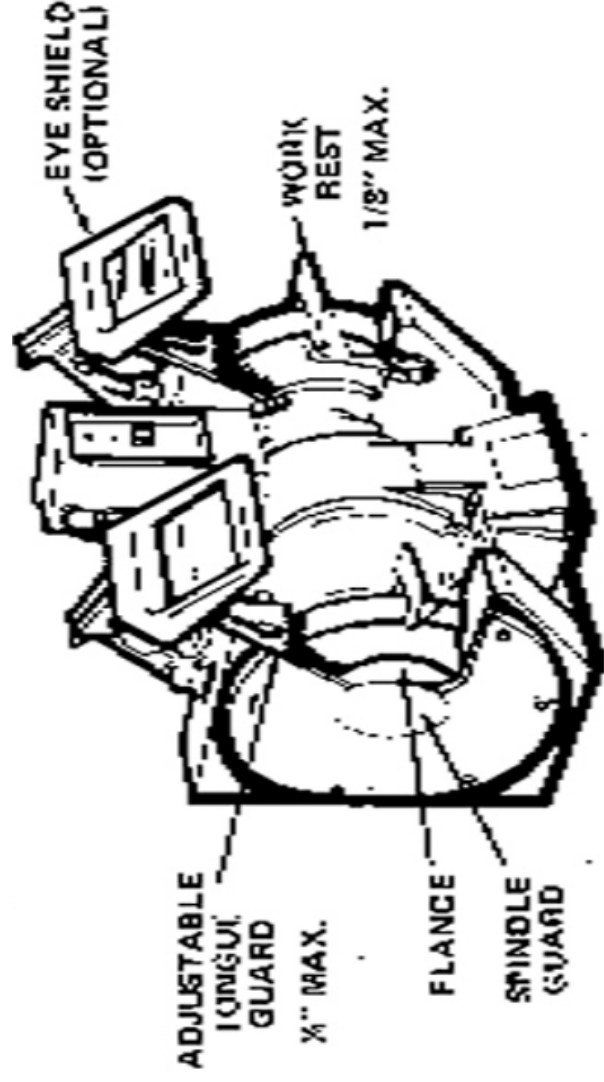
! before mounting a new wheel, check the spindle speed of the machine to ensure that it does not exceed the maximum operating speed marked on the wheel. Your grinder should have its maximum spindle speed marked on it.

! because pedestal grinders are generally top heavy, they must be secured. As a general rule, if your machine has holes in its base, anchor it. Note that you may secure your grinder to either the floor or a large dimension base plate.

You Should:

! buy machinery that is intended for industrial use, as this class of machinery includes the necessary safety mechanisms for occupational use. Products intended for home use do not include all of the safety mechanisms, and, therefore, require that you determine the necessary safety mechanisms and properly add these mechanisms to your machinery.

Ensure the grinding wheel's safety guards are in place, and the adjustable tongue guard and work rest are properly adjusted prior to operating this machine.



TOW TRUCKS & OTHER SHOP VEHICLES

Regulatory Overview

If your shop has a vehicle that is used for business purposes, that vehicle and its driver(s) are subject to Department of Transportation (DOT) regulations. The regulations that apply to the vehicle depend on the gross vehicle weight rating (the weight of the vehicle plus its cargo) or the gross combination weight rating (the weight of the vehicle, its cargo, plus anything in tow).

DOT regulations may also apply to the hazardous materials carried by your shop's vehicle(s), although some of these materials are not regulated because they are considered to be *materials of trade*. A material of trade is a hazardous material (not a hazardous waste) that is carried on a motor vehicle:

- 1) for the purpose of protecting the health and safety of the motor vehicle operator or passengers. Examples include: air bags and their oxygen cylinders, and insect repellent.
- 2) for the purpose of supporting the operation or maintenance of a motor vehicle. Examples include: spare batteries, motor oil, brake fluid, windshield washer fluid, engine starting fluid, small quantities of welding gases (no more than four cylinders), gasoline (in an OSHA safety can with a capacity of no more than 5 gallons.)
- 3) by a private company to directly support its principal business (i.e., this exemption does not apply to trucking or delivery companies.)

Note that there are packaging requirements and limits on the total quantity of materials of trade allowed on a single motor vehicle.

In addition to following DOT requirements, operators of tow trucks and other shop vehicles must also follow OSHA standards to ensure worker safety. These standards are listed in the following section.

MANAGEMENT RESPONSIBILITIES

Listed below are the management requirements that you must follow. Also listed are suggested practices that you should follow in order to provide your shop's employees with additional safety measures.

You Must:

- ! when transporting materials of trade, you must: [DOT]
 - not transport more than 440 pounds (approximately 50 gallons) of a material(s) of trade on a single motor vehicle.
 - ensure that each material is packaged in its original packaging or in packaging of equivalent strength, and that packages are tightly closed and secured against movement. Note that packages are not required for containers that are secured against movement in cages, boxes or compartments. Gasoline and other flammable liquids must be in an OSHA safety container having a capacity of no more than 5 gallons, a spring-closing lid and spout cover, and designed to safely relieve internal pressure when subjected to fire exposure.

- ensure that cylinders meet all DOT qualification and use requirements. See the Welding section in Chapter 4 for more information on cylinder labeling requirements.
 - ensure that nonbulk packaging (containers smaller than 119 gallons or weighing less than 882 pounds) are marked with the product's common name or proper shipping name.
 - inform your driver(s) of the materials of trade exemption and of the presence of the hazardous materials.
- ! when transporting materials that are not materials of trade, you must: [DOT]
- ensure that packaging is adequate to hold the materials being transported, and that the packaging is not torn, leaking, etc.
 - ensure that the package has the correct DOT label, if required.
 - ensure that packages are secured to prevent movement during transportation.
- ! comply with the following if your vehicle(s) has a gross vehicle weight rating of 10,001 pounds or more (generally includes large automobiles and pick-up trucks): [DOT]
- comply with Qualification of Drivers requirements by ensuring that drivers:
 - ☐ are at least 21 years old.
 - ☐ can read and speak English.
 - ☐ have the experience and/or training to safely operate the vehicle to be driven.
 - ☐ can determine whether the cargo to be transported has been properly located, distributed, and secured against movement.
 - ☐ are physically qualified to drive a motor vehicle and have a copy of the examiner's certificate showing that they are physically qualified to drive a motor vehicle.
 - ☐ have a valid motor vehicle operator's license.
 - ☐ have provided the employer with a list of all traffic violations resulting in a conviction, or for which bond or collateral was forfeited, during the preceding 12 months.
 - ☐ have completed and furnished to the employer an application for employment.
 - comply with the DOT Recordkeeping Responsibilities listed in Section 5.4.
- ! if your vehicle(s) has a gross vehicle weight rating of 26,001 pounds or more (generally pick-up trucks with vehicles in tow or wreckers), you must: [DOT]
- follow the above-listed requirements for vehicles with a gross vehicle weight rating of 10,001 pounds or more, including complying with the DOT Recordkeeping Responsibilities listed in Section 5.4.
 - ensure that your drivers have current commercial drivers licenses.
- ! if your shop has a tow truck, you must: [OSHA]
- follow the above-listed requirements for vehicles with a gross vehicle weight rating of 26,001 pounds or more.
 - ensure that a carbon dioxide, dry chemical or equivalent fire extinguisher is in good working condition and securely mounted on the truck. You must also ensure that drivers and maintenance personnel are familiar with the use and care of the fire extinguisher provided.
 - ensure that the data plate stating the maximum hoisting capacity of the unit is prominently posted on the winch mast. Do not paint over or remove the manufacturer's

data plate.

- frequently (daily to monthly intervals) inspect:
 - ☐ the control mechanism for maladjustment or excessive wear.
 - ☐ safety devices for proper operation.
 - ☐ hooks for cracks or deformation.
- periodically (1-12 month intervals or as specified by the manufacturer) inspect:
 - ☐ structural members for cracks, corrosion or deformation.
 - ☐ sheaves and drums for cracks or wear.
 - ☐ pins, bearings, shafts, gears and locking devices for cracks, wear or distortion.
 - ☐ cables for excessive wear, corrosion, breakage, kinking or for improperly applied cable connections.
- ensure that employees do not work on vehicles that are suspended solely by a tow-truck cable. If work must be performed on suspended vehicles, you must place jack stands or cribbing under the vehicle's frame.
- The crane's controls should be remotely located from the winch drum, traveling cables, and sheaves so that the operator is not under the load being lifted when working the crane's controls.

You Should:

- ! if your shop has a tow truck, you should:
 - equip the truck with flood lights for nighttime use.
 - equip the truck with wheel chocks (i.e., blocks to prevent the truck's wheel from rolling) and flares.

WELDING, CUTTING & BRAZING OXYGEN & ACETYLENE TANKS

HAZARDS AND RULES

Base Materials - Hazards & Impacts

Many hazards are involved in compressed gas handling, storage, and use. Compressed gases are potential energy that is being stored for later use. That energy may be purposely released in order to perform work, or may be accidentally released by container failure or other causes.

When the potential energy from an acetylene tank is accidentally released, it is released at an uncontrolled rate, which may result in fire or an explosion. Oxygen is not flammable, but is a catalyst for burning (i.e., oxygen allows flammable or combustible materials to burn more readily.)

In addition to fire and explosion hazards, there are a number of chronic health effects that may result from welding operations, depending upon the type of welding done and the type of metals being welded. Exposure to the radiation/light generated by the welding process causes damage to the eyes, and skin exposure to ultraviolet radiation can result in severe skin burns. Fumes from both the welding materials (e.g., the gases, welding electrodes, etc.) and the metals being welded can also cause a wide range of adverse health effects, some of which are discussed below.

Additives and Contaminants - Hazards & Impacts

As previously stated, a wide range of adverse health effects may be caused by inhaling welding fumes. The parts that you weld may have been treated with a number of constituents, including, but not limited to, the following:

- cadmium (frequently used as a rust-preventive coating or as an alloy)
- iron oxide (used as an alloy)
- mercury (used to coat metals to prevent rust)

During the welding process, fumes or vapors from these constituents are released, potentially causing irritation of nasal passages, throat and lungs; emphysema; kidney damage; and death.

For more information on welding's adverse health effects, obtain a copy of "Welding Health Hazards" from the Department of Labor's web site or the Fax-On-Demand system.

Regulatory Overview

The Department of Fire & Building Services, OSHA and DOT regulate welding operations and materials. The Department of Fire & Building Services requires your shop to be properly classified for welding operations and also requires that flammable and combustible materials are properly stored and used.

OSHA has the vast majority of welding-related regulations. These regulations range from equipment storing and handling requirements to providing personal protective equipment to all employees whom may view the welding operation. And lastly, DOT requires that tanks be properly labeled and secured when in transit.

MANAGEMENT RESPONSIBILITIES

Listed below are the management requirements that you must follow. Also listed are suggested practices that you should follow in order to provide an additional measure of safety to your employees and others who come into contact with welding operations or equipment.

You Must:

- ! ensure that your building meets the correct building code classification for welding operations. If your shop does any type of welding, more stringent building codes will apply. Contact the Plan Review Division of the Department of Fire & Building Services for more information.
[Fire & Building Services]

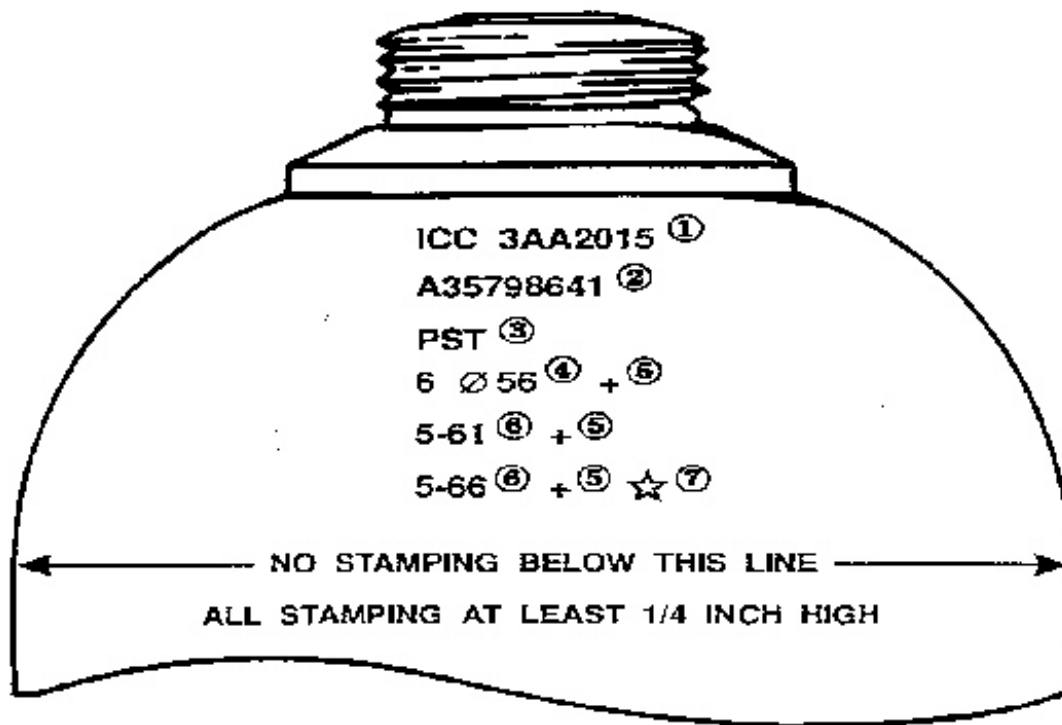
You Must:

General: [OSHA]

- ! not mix air or oxygen with flammable gases prior to consumption, except at the burner or in a standard torch.
- ! not use oxygen for any operation except to support combustion when used with a fuel gas.
- ! ensure that valve protection caps (when the cylinder is designed to accept such cap) are in place and are hand tight, except when in use or connected for use.
- ! not drop, strike or allow cylinders to strike each other violently.
- ! not use valve protection caps for lifting cylinders.
- ! not allow cylinders to come into contact with electrical circuits.
- ! not use excessive force to open cylinder valves.
- ! not use a cylinder that leaks, is bulging, has defective valves or safety devices, shows evidence of physical abuse, fire or heat damage, or has rust or corrosion, unless the cylinder is properly repaired and re-qualified for use. If you have a damaged cylinder, ask your supplier to pick it up and provide you with a new one. Do not attempt to make repairs to cylinders or valves.
- ! not tamper with safety devices in cylinders or valves yourself.
- ! not attempt to fill or refill a cylinder yourself. No person, except the owner of the cylinder, or person authorized by him, shall refill a cylinder.
- ! keep cylinder valves, couplings, regulators, hoses and apparatus free from oily or greasy substances. Do not lubricate cylinder valve threads with any compound prior to connecting a regulator or manifold.

Labeling: [OSHA]

- ! not tamper with the cylinder's numbers and/or stamping.
 - ! label or identify any leaking cylinders (as leaking) and notify the cylinder supplier.
 - ! ensure that all cylinders have the proper content identification labels and the filler's or distributor's name is identified. The following information must be included:
 - 1) Either DOT or ICC markings. New cylinders must read "DOT."
 - "3AA" indicates specification number required by DOT.
 - "2015" is the marked service pressure.
 - 2) Serial number (no duplications are permitted.)
 - 3) Symbol of manufacturer, user, or purchaser.
 - "6 56" is the month and year that the cylinder was manufactured. The circle with a diagonal line through it is the cylinder inspector's official mark.
 - 5) Plus mark (+) indicates that DOT will allow the cylinder to be 10% overcharged.
 - 6) Dates that the cylinder was tested and re-qualified for use. Cylinders must be tested every 10 years.
- Five-pointed star indicates that the cylinder was retested after being in service for 10 years.
Each star represents a separate retest at intervals of 10-years.



Cylinder storage: [OSHA]

- ! store cylinders away from radiators and all other sources of heat, including overhead space heaters.
- ! store cylinders inside in a well-protected, well-ventilated, dry location at least 20 feet away from highly combustible material such as oil, grease, paint and mineral-based solvents. Cylinders must be stored in assigned locations that are identified for their storage. This area must be well lighted and away from elevators, stairways, gangways, high traffic walkways and drives. The area must be free of falling objects and free of access by unauthorized persons.
- ! not store empty oxygen and fuel gas cylinders together. Close the valves of empty cylinders and treat and store them, as you would full cylinders. Full and empty cylinders must be identified accordingly.
- ! separate cylinders with leaking valves no less than 25 feet from people and buildings. Label or identify the cylinders as leaking and notify your supplier.

Acetylene storage:

- ! not store more than 2,000 cubic feet of fuel gas in cylinders (fuel gas includes acetylene) unless your shop is equipped with special storage rooms. If you wish to store more than 2,000 cubic feet of fuel gases, contact BuSET, the Plan Review Division of the Department of Fire & Building Services, or CTAP for assistance.
- ! store acetylene cylinders with valve ends up.

Oxygen storage:

- ! not store oxygen cylinders near highly combustible material, such as oil, grease, paint and mineral-based solvents. Cylinders must be stored with valve ends up and must be placed on a solid platform or floor (not on wooden structures or on asphalt.) Cylinders must be retained by metal chain or steel wire cable without slack to prevent falling.
- ! ensure that stored oxygen cylinders are separated from fuel gas cylinders (including acetylene) by a distance of at least 20 feet or by a non-combustible barrier at least 60" (5 feet) high with a fire burn rate of at least one half hour (30 minute) minimum. The non-combustible barrier must be made of concrete or steel sheeting and must be tight to the floor and the back-adjointing wall. This barrier must extend out past the cylinders being stored.



Welding area: [OSHA]

- ! ensure that the welding area (i.e., the area within 35 feet of the welding operation) is free of combustible material.
- ! ensure that a fire watcher is designated when welding and cutting is performed in locations where fires might develop.
- ! ensure that floors, walls and ceiling cracks and opening are protected from entry by sparks and hot slag.

Cylinder Use: [OSHA]

(Note that the supervisor is responsible for the safe handling of cutting and welding equipment and the safe use of the cutting and welding processes.)

- ! before connecting a regulator to a cylinder valve, ensure the valve is opened slightly and closed immediately (to blow out the fitting.) Stand to one side of the valve outlet of the secured supported cylinder, away from all heat sources.
- ! not use a hammer or wrench to open cylinder valves. Contact the supplier if the valves cannot be opened by hand.
- ! not open acetylene cylinder valves more than 1 - 2 turns of the valve spindle.
- ! ensure that a pressure reducing device (regulator) is used when using any compressed gas cylinder. The type of regulator used must match the cylinder and gas being used.
- ! ensure that cylinders not having fixed hand wheels are equipped with keys, handles or non-adjustable wrenches on the valve stem at all times while the cylinder is in service.
- ! keep cylinders far enough away from the actual cutting and welding operation so that sparks, slag and flame will not reach them. If this is not possible, a flameproof barrier must be used to shield the cylinders.
- ! ensure that the welding equipment's hook-up and use comply with the requirements of the manufacturer.
- ! protect welding machine terminals from accidental electrical contact by personnel or metal objects.
- ! ensure that welding equipment is ground.
- ! ensure that all electrical connections in the welding circuit are mechanically secure and maintain adequate current carrying capacity.
- ! ensure that electrode holders are in good condition and that all conductive parts are insulated from the operator.
- ! remove welding electrodes from the electrode holder when not in immediate use.
- ! bleed pressure from the regulator and the system before removing the regulator.
- ! close cylinder valves when work is finished, or before going to lunch, extended break, or leaving work for the day.

Personal Protective Equipment: [OSHA]

- ! ensure that cutting and welding operators wear the protective equipment necessary to be protected from flash burn, arc burn, arc radiation, etc.
 - The appropriate protective clothing required for any welding operation will vary with the size, nature and location of the work to be performed. Clothing materials should always provide maximum protection from sparks and hot metal. Protective eyewear, safety shoes, fire-resistant clothing and fire-resistant gauntlet gloves are recommended. Additionally, shirts should have long sleeves, no pockets and should be worn outside of the trousers with the collar buttoned. The trousers should not have cuffs and should extend down to the safety shoes.
- ! ensure that employees outside the weld area are provided with the same protection as listed above if these employees enter the weld area.

Note that OSHA's *Filter Lens Shade Number Guide* follows this section. Additional information regarding personal protective equipment is available via the Department of Labor's web site or the Fax-On-Demand system. You may also contact BuSET or CTAP for assistance.

Transporting cylinders: [DOT]

- ! close cylinder valves prior to transporting.
- ! secure cylinder against falling during transport.
- ! when transporting gases, label the shipment to meet DOT requirements. Refer to IDEM's web site for a listing of DOT Shipping Descriptions. [DOT]

You Should:

- ! store your oxygen and acetylene tanks so they are chained in place and located inside storage cages, or strap each tank to a welder's dolly.
- ! visually inspect compressed gas cylinders to ensure they are in safe condition.
- ! check for leaks before using. Spraying a soap and water solution around the base of the collar may do this. If the tank is leaking, the solution will "bubble" as a result of the gas being released.
- ! not use acetylene at a pressure in excess of 15 psig.
- ! ensure that employees in charge of the oxygen or fuel-gas supply equipment have been judged competent by the employer before being left in charge.
- ! make the rules and instructions covering the operation and maintenance of oxygen or fuel-gas supply equipment readily available to employees performing this type of work.

FILTER LENS SHADE NUMBER GUIDE

<u>WELDING OPERATION NUMBER</u>	<u>SHADE</u>
Shielded Metal-Arc Welding, up to 5/32" (4mm) electrodes	10
Shielded Metal-Arc Welding, 3/16 to 1/4" (4.8 to 6.4mm) electrodes	12
Shielded Metal-Arc Welding, over 1/4" (6.4mm) electrodes	14
Gas Metal-Arc Welding (Nonferrous)	11
Gas Metal-Arc Welding (Ferrous)	12
Gas Tungsten-Arc Welding	12
Atomic Hydrogen Welding	14
Carbon Arc Welding	10-14
Torch Soldering	2
Torch Brazing	3 or 4
Light Cutting, up to 1" (25 mm)	3 or 4
Medium Cutting, 1" to 6"(25 to 150 mm)	4 or 5
Heavy Cutting, over 6" (150 mm)	5 or 6
Gas Welding (light), up to 1/8" (3.2 mm)	4 or 5
Gas Welding (medium), 1/8" to 2" (3.2 to 12.7 mm)	5 or 6
Gas Welding (heavy), over 2" in (12.7 mm)	6 or 8

Note: In gas welding or oxygen cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the operation spectrum.

CHAPTER 5

EMERGENCY PLANS, TRAINING, AND RECORDKEEPING & REPORTING REQUIREMENTS

5.1 OSHA HAZARD COMMUNICATION STANDARD

The OSHA Hazard Communication Standard, also known as the Worker's Right-to-Know Law, was enacted to ensure that hazards in the workplace are identified and communicated to all employees. The Hazard Communication Standard applies to any business that uses, distributes, or imports hazardous chemicals, **regardless of the number of individuals employed**.

You Must:

- ! maintain compliance with the Hazard Communication Standard (Worker's Right-to-Know Law) by:
 - developing a **written** Hazard Communication Program. The Hazard Communication Program combines all of the required components of the Hazard Communication Standard into one working document. See Attachment C for a sample Hazard Communication Program. Note that, if you choose to use the sample program, you must read through it to ensure that it fits your shop's needs. If the sample does not fit your shop's needs, you must tailor it to meet your needs.
 - providing employees with information and training on hazardous chemicals found in the workplace so that employees are aware of the chemical hazards, can read an MSDS and label, and know what to do in an emergency. Make sure all employees know where the MSDS book is located.
 - developing a list of all chemicals at the facility (product names are acceptable, see Attachment J.)
 - maintaining an updated inventory of Material Safety Data Sheets (MSDS) **for all chemicals** in the workplace. If you receive a chemical without an MSDS, write to the supplier to request one (see Attachment I.) It is the supplier's responsibility to send out MSDSs. It is your responsibility to ensure that you have all relevant MSDSs and to update your MSDS log (see the sample Hazard Communication Program in Attachment C.) You must keep the MSDS for a minimum of 30 years after you stop using a chemical.
 - ensuring that all containers, tanks, pipes, etc. are properly labeled. If you receive a chemical that is not properly labeled, call your supplier and insist on proper labeling to ensure compliance with the regulations. If you transfer chemicals from their original container into another container, you must properly label the second container.

You Should:

- ! keep MSDSs for the duration of a given worker's employment plus 30 years (in case of future liability regarding employee exposure to hazardous materials at the workplace.)
- ! when transferring chemicals from their original container to another container, you should photocopy the original label (if possible) and either laminate or tape over the label so that it will not smear if it gets wet.

5.2 OTHER OSHA PLANS

You Must:

- ! develop a written emergency action plan, including a fire prevention plan, if you have 11 or more employees (see Attachment K for an example of an Emergency Information list to place near your phones). If you have 10 or fewer employees, the plan may be communicated verbally. (See Attachment B for a sample Emergency Action Plan.)
- ! comply with OSHA 300, 300A, and 301 recordkeeping responsibilities if you have 11 or more employees.
- ! establish a lockout program (formerly known as "lockout/tagout.") If any of your employees perform maintenance activity that is **not** routine, repetitive, and integral to the use of the equipment for production purposes, they must lockout all energy sources before beginning work. Energy sources include not only electrical energy, but also hydraulic and pneumatic energy sources. The force of gravity must also be addressed in the lockout program by taking measures such as bracing equipment (such as your hydraulic or pneumatic lift) to prevent it from falling in the event that hydraulic or pneumatic controls fail. Locks, along with a warning tag, must be placed on all energy sources prior to working on equipment. NOTE: The Indiana Department of Labor does NOT recognize a tag without a lock. A lock is required.
 - For tools that plug into an outlet, a lock is not required, but the tool must be unplugged and the plug kept within the control of the person working on the equipment. The Indiana Department of Labor recommends placing the plug in your pocket.
 - All employees must receive annual lockout training: even employees who do not perform maintenance work must be trained to recognize and respect a lockout & tag and know not to remove the lock. If you hire an outside contractor to perform maintenance work on-site, your employees must be trained to recognize and respect the lockout system utilized by the contractor.

You Should:

- ! if you have 10 or fewer employees, you should:
 - develop a written emergency action plan, including a fire prevention plan. Written programs help ensure that all information in the plans is conveyed to each employee, and also allow employees to refer back to the plans when questions arise. By having proper written programs in place, your shop will be in compliance with this OSHA regulation in the event that your total employee count exceeds 10 employees.

- follow OSHA 300, 300A, and 301 recordkeeping responsibilities. These records will allow you to identify any injury-related trends and to address the causes of such trends. By properly conducting 300, 300A, and 301 recordkeeping responsibilities, your shop will be in compliance with this OSHA regulation in the event that your total employee count exceeds 10 employees.

You Must:

MEDICAL SERVICES: [OSHA]

- ☐ have someone on site who is trained in first aid if you are more than 4 minutes away from medical facilities.
 - ☐ have a written procedure and employee training advising employees how to determine if medical treatment is needed. A written plan is not required if your shop is within 4 minutes of a medical facility and you choose to transport patients rather than provide first aid.
 - ☐ if first aid is to be provided on site, your first aid trained personnel must also be trained in Blood Borne Pathogens and must be given the opportunity to get a Hepatitis B vaccine (at owner's expense.) Contact BuSET or CTAP for more information.
 - ☐ provide protective equipment (gloves, etc.) and training to all employees, whether your shop's policy is to provide first aid on site or to transport patients to a medical facility.
-

5.3 RESOURCE CONSERVATION & RECOVERY ACT (RCRA) EMERGENCY PLAN

You Must:

For IDEM:

- ! assign an emergency coordinator, who is responsible for the following duties:
 - posting the following information next to your shop's telephones:
 - ☐ the name and telephone number of your shop's emergency coordinator;
 - ☐ the location of your spill control material, fire extinguisher(s), and, if present, fire alarm; and
 - ☐ the telephone number of the fire department (unless your shop has a direct alarm.)
 - ensuring that all employees are thoroughly familiar with proper waste handling and emergency procedures relevant to their responsibilities during normal facility operations and emergencies;
 - responding to emergencies that arise by doing the following:
 - ☐ in the event of a spill, contain the flow of hazardous material to the extent possible, and clean up the hazardous material and any contaminated materials or soil as soon as practicable. See Section 3.8 for more information on spills;
 - ☐ in the event of a fire, call the fire department or put out the fire using a fire extinguisher;
 - ☐ immediately notify the chief of the responding fire department when a release of hazardous materials creates an unreasonable risk to public safety from fire or explosion.
 - ☐ in the event of a fire, explosion, or a release which could threaten human health

outside of the shop, or when you have knowledge that a spill has reached surface water, you must immediately notify IDEM's Emergency Response Section at 317/233-7745 or toll free at 888/233-7745. IDEM will request the following information*:

- (your shop's name, address, and EPA Identification Number;
- (date, time, and type of incident (e.g., spill or fire);
- (quantity and type of hazardous material involved in the incident;
- (extent of injuries, if any; and
- (estimated quantity and disposition/makeup of recovered materials, if any.
- (acknowledgment that you are located within a Wellhead Protection Area (if you are.)

(*call IDEM even if you do not yet have all of the information that will be requested.)

You Should:

- ! in the event of a fire or a spill that creates an unreasonable risk to public safety from fire or explosion, you should call the Fire Department first. Contact the other regulatory agencies and affected parties afterwards.

5.4 RECORDKEEPING

You Must:

For IDEM:

- ! determine your hazardous waste generator classification and document your classification. In order to do this, you must keep records of the amount of hazardous waste:
 - generated, accumulated and stored on-site; and
 - recycled on-site or manifested off-site. A copy of the manifest must be kept at the facility that generated the waste for a minimum of three years.
- ! conduct Hazardous Waste Manifesting, which includes the following:
 - Complete EPA Form 8700-22/State Form 11865 (Uniform Hazardous Waste Manifest Form) each time you have hazardous waste transported to an off-site facility that is located within the state of Indiana. You may obtain this form from your hauler, or you may order the form from IDEM by calling 317/232-7959 or by using the order form on IDEM's web site. Please note that IDEM charges a fee for the Indiana manifest forms. If you are sending your hazardous waste to an out-of-state facility, you must use the receiving state's manifest form. If the receiving state does not require its own manifest, then you must use Indiana's manifest.

Note that effective January 1, 2001, new hazardous waste manifesting rules will take place. You will be required to use the federal hazardous waste manifest form rather than Indiana's form, and submit to IDEM an annual report summarizing your hazardous waste shipments during the previous calendar year. You will no longer be required to submit copies of your manifest to IDEM. See Section 3.5 for more information.

- ☒ Within five days of shipment of the hazardous waste, you must send a copy of the manifest to the IDEM address on the back of the form (see Attachment O for an example of a blank Indiana manifest form and Attachment N for an example of a completed Indiana manifest.) If you are using a manifest from another state, a photocopy of the form must be sent to IDEM.
- ☒ The person who signs the manifest must have received proper training on the manifest form and procedures (see Section 5.6 for more information.)
- ☒ Each party that takes possession of the waste must sign the original manifest and keep one copy. The remaining portion of the manifest continues on with the hazardous waste shipment until it reaches its final destination.
- ☒ The TSDR facility must send a signed copy of the manifest back to you to verify that the shipment actually arrived.
- ☒ If the copy of the manifest is not sent to you within 35 days of the date the waste was accepted by your hauler, you must contact your hauler and/or the designated facility to determine the status of the hazardous waste.
- ☒ If the copy of the manifest is not sent to you within 45 days of the date the waste was accepted by your hauler, you must complete an exception report that:
 - (is accompanied by a legible copy of the manifest for which you do not have confirmation of delivery.
 - (is accompanied by a letter that you or your designated representative has signed. The letter must explain the efforts you've taken to locate the hazardous waste and the results of those efforts.
- ☒ If the copy of the manifest is not sent to you within 60 days of the date the waste was accepted by your hauler, you must submit a legible copy of the manifest, along with a note or letter indicating that you have not received confirmation of delivery. Send this letter to IDEM's Office of Land Quality.
- ☒ keep copies of all hazardous waste manifests for 3 years.
- ! if your shop performs work on motor vehicle air conditioning (MVAC) systems, you must submit a one-time equipment owner certification form to EPA and you must maintain the following records and certifications on-site:
 - EPA equipment owner certification form for one recovery or recovery/recycling machines (only one form must be submitted, even if your shop has more than one machine.)
 - certification forms for each trained technician and facility operator.
 - invoices and records documenting recovered refrigerant that was sent off-site for reclamation.
 - documentation of refrigerant purchases.

You Should:

- ! keep all copies of your hazardous waste manifests indefinitely.

You Must:

For OSHA:

- ! keep a log of employee occupational injuries and illnesses, commonly called the OSHA 300 log.

- When completing the OSHA 300 log for work related injuries, it is important to distinguish recordable injuries or illnesses (those that must be included in the log) from those that are not recordable.
 - ⊘ Not Recordable: Injuries or illnesses that require first aid only (i.e. simple wound cleaning, applying ointment, and simple bandaging) are not recordable, even if the simple first aid was done at a hospital or doctor's office.
 - ⊘ Recordable: If medical treatment involves such things as stitches, treatment of infection, removal of embedded foreign objects, or other similar activities, then the injury is generally considered to be a recordable case.
 - (All recordable cases must be posted to the OSHA 300 log within six days of occurrence or knowledge of its occurrence. If the status of a work-related injury or illness changes, the log entry must be revised accordingly.
 - When a case is recordable, you must classify the case as either an injury or an illness.
 - Injury: An injury is usually a result of an accident or exposure involving a single incident in the work environment. Examples include cuts, burns, fractures, strains, chemical burns, or insect bites.
 - Illness: An illness is generally a condition resulting from prolonged exposure to a hazardous work environment. Examples include rashes, poisonings, respiratory conditions caused by repeated exposure to chemicals or irritants, heat exhaustion, hearing loss due to noise, and repetitive motion cases such as carpal tunnel.

The back of the OSHA 300 log contains more descriptions of injuries and illnesses to help in your determination process.

- ! keep a Supplementary Record (OSHA 301 form) which details each work related injury or illness.
- ! each year, during the entire month of February, you must prominently post the summary of injuries and illnesses for the previous year (this summary is OSHA 300A.) This posting is usually placed on the same bulletin board or area that displays the required labor postings. OSHA 300 logs and Supplementary Records must be kept for a minimum of five years. Note that you may order a copy of the summary of injuries and illnesses posting from OSHA by using the order form on the Fax-On-Demand system by calling the Indiana Department of Labor's BuSET program, at 317-232-2688. In addition, a comprehensive guidance document entitled, *Recordkeeping Guidelines for Occupational Injuries and Illnesses* is available from BuSET.

You Must:

For DOT:

- ! if your shop has a commercial motor vehicle(s), you must maintain the following records:
 - Driver Qualification File. You must maintain a driver qualification file for each driver that your shop employs. This file must include:
 - ⊘ a copy of a medical examiner's certificate stating that the driver is physically qualified to drive a motor vehicle.
 - ⊘ a list of traffic violations that the driver was convicted of, or that resulted in the

driver's forfeiting bond or collateral. This list may be given to you by the driver, and must cover the proceeding 12-month period.

- ☐ a copy of the driver's application for employment.
- ☐ a copy of a motor vehicle report from each state in which the driver held a motor vehicle operator's license during the past three years, and documentation of the driver's employment record, as investigated by you, concerning the past three years. The past employment record must include the past employer's name and address, the date the employer(s) was contacted, and the employer's comments with respect to the driver.
- Hours of Service of Drivers ("duty status"). If your shop owns or uses a commercial motor vehicle (i.e., a vehicle owned or used by the shop that weighs 10,001 pounds or more), you must keep track of the driver's duty status for each 24 hour period, and must keep the duty status record for six months. You may purchase a duty status form or you may make your own log. If you choose to make your own log, it must include the following information, when applicable:
 - ☐ Month, day and year for the described 24 hour duty period;
 - ☐ Starting time for the 24-hour period being described;
 - ☐ Total mileage driven during the 24-hour period;
 - ☐ Truck/vehicle number;
 - ☐ Name of the carrier (or the name of your shop if the driver works for you);
 - ☐ Driver's signature (certifying that all information provided in the service record is correct);
 - ☐ Address of the driver's main office;
 - ☐ Name of each city or town where the driver's duty status changes;
 - ☐ Name of any co-driver;
 - ☐ Total hours in each duty status (summing to 24 hours); and
 - ☐ Shipping paper document number(s), or the name of the shipper and commodity.
- ensure that drivers prepare a Written Service Report each day that they operate a commercial motor vehicle. Keep the written service reports and certifications of repair for at least 3 months from the date they were prepared, and keep a copy of the latest report with the vehicle. The report must:
 - ☐ identify the vehicle; and
 - ☐ list any deficiencies that would affect its safe operation or cause it to mechanically break down. If the report includes such deficiencies, the next driver to use the vehicle must sign the report certifying that the deficiencies have been corrected before he/she may drive the vehicle.
- maintain the following records for commercial motor vehicles that your shop owns, leases, or borrows for 30 consecutive days or longer:
 - ☐ Vehicle identification (including company number, if one has been assigned, make, serial number, and tire size.)
 - (This record must be retained at the shop where the vehicle is primarily housed and a copy must be kept in the vehicle.
 - (This record must be retained for a period of one year.

- (If the vehicle is sold (or otherwise no longer in the possession of your shop), this record must be retained for a period of six months after the vehicle leaves your possession.
- ⊗ Maintenance schedule (including type of maintenance and date vehicle is due for scheduled maintenance.) As with the vehicle identification, the maintenance schedule must be kept on file where the vehicle is housed or maintained for a period of one year and for six months after the vehicle leaves your control. A copy of the record must be carried on the vehicle.
- ⊗ Annual inspection records. Inspection reports must be kept at the shop where the vehicle is primarily housed and must be accompanied by documentation that the person who performed the inspection was qualified to do so (for example, a brake inspector is considered qualified if that person has completed a brake service or brake inspection apprenticeship program or has brake-related training or experience totaling at least one year.) These reports must be retained for 14 months from the date they were prepared.
- ⊗ Repair records. These records must be retained for three months from the date they were prepared.
- ⊗ Lubrication records. Lubrication records must be retained where the vehicle is housed or maintained for a period of one year and for six months after the vehicle leaves your control. A copy of the record must be carried on the vehicle.

5.5 REPORTING

You Must:

For IDEM:

- ! Hazardous waste manifesting rules require that the TSDR facility send a signed copy of the manifest back to you to verify that the shipment actually arrived.
 - If the copy of the manifest is not sent to you within 35 days of the date the waste was accepted by your hauler, you must contact your hauler and/or the designated facility to determine the status of the hazardous waste.
 - If the copy of the manifest is not sent to you within 45 days of the date the waste was accepted by your hauler, you must complete an exception report that:
 - ⊗ is accompanied by a legible copy of the manifest for which you do not have confirmation of delivery.
 - ⊗ is accompanied by a letter that you or your designated representative has signed. The letter must explain the efforts you've taken to locate the hazardous waste and the results of those efforts.
 - If the copy of the manifest is not sent to you within 60 days of the date the waste was accepted by your hauler, you must submit a legible copy of the manifest, along with a note or letter indicating that you have not received confirmation of delivery. Send this letter to IDEM's Office of Land Quality.
- ! If your shop performs work on motor vehicle air conditioning (MVAC) systems, you must submit a one-time equipment owner certification form to EPA (see Attachment M and the MVAC section in Chapter 4), and you must maintain the following records and certifications

on-site:

- EPA equipment owner certification form for at least one recovery or recovery/recycling machine
 - certification forms for each trained technician and facility operator
 - invoices and records documenting recovered refrigerant that was sent off-site for reclamation
 - documentation of refrigerant purchases in quantities of less than 20 pounds
- ! submit a one-time notification form to IDEM's Office of Land Quality and your local POTW if you are discharging hazardous waste to the sanitary sewer.
- ! report spills (see Section 3.8.)

For your local POTW:

- ! contact your local publicly owned treatment works (wastewater treatment plant) to ensure that you are meeting the treatment plant's limits.
- ! submit a one-time notification form to the POTW (and to IDEM's Office of Land Quality) if you are discharging hazardous waste to the sanitary sewer.
- ! report spills (see Section 3.8.)

For your local fire department:

- ! report spills (see Section 3.8.)

For OSHA:

- ! If a work-related fatality or catastrophe (i.e., causing three or more employees to be admitted to the hospital for medical treatment), you must:
- Report the fatality or catastrophe to the Indiana Department of Labor within eight hours of your knowledge of the fatality or catastrophe. The report must be called in to the Department of Labor at 317/232-2693, 24-hours per day, 7-days per week. You must provide the following information when you call:
 - ☐ names of business
 - ☐ location of incident
 - ☐ time of incident
 - ☐ number of fatalities or hospitalized employees
 - ☐ contact person at your shop
 - ☐ phone number, and
 - ☐ brief description of the accident

Be sure to leave your name and phone number

5.6 EMPLOYEE TRAINING

As a shop manager or owner, you are required to train your employees to help ensure worker safety. Many of OSHA's standards explicitly require you to train employees in the safety and health aspects of their jobs. Other OSHA standards make it your responsibility to limit certain job assignment to employees who are "certified," "competent," or "qualified," meaning that they have had special previous training.

You Must:

FIRE PROTECTION/PREVENTION: [Fire & Building Services]

- ! make sure your local fire department is familiar with the fire hazards at your business.
- ! train employees on safety procedures and responsibilities during a fire emergency.
- ! train employees on exit routes, including alternative exits.
- ! provide appropriate fire extinguishers, and train employees on the availability and use of fire extinguishers, alarm systems, sprinklers, etc.
- ! store flammable or combustible materials according to The Department of Fire & Building Services' requirements (see Sections 3.3 and 3.4.) Post "NO SMOKING" signs in areas where flammable or combustible materials are used or stored.
- ! ensure that explosion proof lighting is used in storage areas for flammables.
- ! keep fire doors closed at all time.
- ! know if your shop has fire walls and where they are located.

The training requirements in this section are separated into three groups:

- 1) Front Desk Employees (and any other employees who do not have contact with the chemicals or equipment used at the shop.)
- 2) Mechanics/Technicians (and any other employees who have contact with the chemicals or equipment used at the shop.)
- 3) Managers and Owners (employees who have overall responsibility for the shop and also have contact with the chemicals or equipment used.)

While there is some overlap in the training requirements for these three groups of employees, there are enough differences to warrant separate sections. Note that Large Quantity Generators are required to conduct more training than is discussed in this section.

Front Desk Employees Must:

- ! be trained on the basic hazard communication program and know:
 - where the Material Safety Data Sheet (MSDS) book is located.
 - not to touch chemicals or their containers (i.e., touching drums, lifting lids, etc.)
 - to stay away from equipment such as hydraulic lifts, grinding wheels, and tools operated by compressed air.
 - to call for help if a hazardous material is spilled or if they hear or smell anything unusual. You must later document when the spill, sound, or smell occurred, and the circumstances of the incident.

Mechanics/Technicians Must:

- ! be trained on the basic hazard communication program when hired and whenever a new hazard is introduced into their area, and must:
 - know where your written program is located.
 - be familiar with entire list of chemicals in your facility, and know where your MSDS book is located.
 - know how to determine chemical hazards including: health hazards, fire and explosion hazards, the required personal protective equipment, and reactivity (with other chemicals or water.) This information may be obtained from the chemical's MSDS.
 - be able to determine proper places to store chemicals.
 - know what to do if there is a spill (see Section 3.8 for more information).
 - know and be able to communicate emergency response and evacuation procedures (refer to your shop's emergency action plan or the sample emergency action plan in Attachment B.)
 - be familiar with the type of fire extinguishers located at the shop (review the label) and their correct use. Do not fight fire alone.
 - be trained on the shop's lockout/tagout program when hired and whenever a new energy source is added.
 - be trained in the selection and use of personal protective equipment. Refer to the personal protective equipment section in Attachment E.

- ! have DOT training (if your employees are responsible for shipping hazardous waste):
 - general awareness training (requirements addressed within the hazard communication training.)
 - function specific training: Employees must be able to demonstrate that they can:
 - ☐ select the proper container for the waste being considered.
 - ☐ properly close the containers for transport, including putting the gasket on containers when required.
 - ☐ properly label and mark the containers.
Use the Hazardous Waste sticker (see the illustration in Section 3.5) and the Flammable Liquid, and Corrosive or Poisonous labels (see Attachment Q.)
 - ☐ properly complete a hazardous waste manifest.
 - ☐ load containers onto the truck.
 - safety training (requirements addressed within the hazard communication training.)
 - not go more than 2 years without being re-trained on DOT issues.

- Other training:
 - be trained by an EPA-certified program prior to working on MVAC systems. You may obtain a current list of EPA-accredited training programs by calling the Stratospheric Ozone Hotline at (800) 296-1996. See the section on Motor Vehicle Air Conditioning Service in Chapter 4 for more information.
 - if employees accept shipments of hazardous materials, they must know how to read chemical labels so that you can refuse a shipment if it is incorrectly labeled. [DOT, OSHA]
 - if you operate the shop's tow truck, you must:
 - ☐ be aware of the materials of trade exemption and of the presence of the hazardous materials. (See the Tow Truck section in Chapter 4 for more information.)
 - if you operate or maintain the shop's tow truck, you must:
 - ☐ be familiar with the use and care of the fire extinguisher provided on the truck.

Managers and Owners Must:

- ! ensure that basic hazard communication training is conducted including:
 - immediately training all new employees on your shop's basic hazard communication program.
 - training existing employees when they are assigned new responsibilities or when new or different chemicals are used.
 - training contractors on all hazards in the workplace.
- ! ensure that employees are trained on the use and selection of personal protective equipment. See Attachment E.
- ! ensure that a trained first-aid responder is at the shop during working hours if the shop is not located within 4 minutes of a medical facility.
- ! have thorough knowledge of the Hazard Communication Standard and your hazard communication program
 - know where your written hazard communication program is located.
 - be familiar with the entire list of chemicals in your facility, and know where your MSDS book is located.
 - know how to determine chemical hazards including: health hazards, fire and explosion hazards, the required personal protective equipment, and reactivity (with other chemicals or water.) This information may be obtained from the chemical's MSDS.
 - know how to read chemical labels so that you can refuse a shipment if it is incorrectly labeled.
 - determine proper places to store chemicals.
 - know what to do if there is a spill (see Chapter 3 for more information).
 - if you have respirators, you are responsible for establishing a respirator program including medical monitoring, training, and planning. *As previously stated, respirator use and the associated monitoring and reporting requirements are covered in Part Two, Collision Repair and Auto Refinishing.*
 - know and be able to communicate emergency response and evacuation procedures.

- be familiar with the type of fire extinguishers located at the shop (review the label) and their correct use. Do not fight fire alone.
 - be trained on the shop's lockout/tagout program when hired and whenever a new energy source is added.
- ! DOT training: (only required if you are responsible for shipping hazardous waste):
- general awareness training (requirements addressed within the hazard communication training.)
 - function specific training: Employees must be able to demonstrate that they can:
 - ☐ select the proper container for the waste being considered.
 - ☐ properly close the containers for transport, including putting the gasket on containers when required.
 - ☐ properly label and mark the containers.
Use the Hazardous Waste, Flammable Liquid, and Corrosive or Poisonous labels (see Attachment Q.)
 - ☐ properly complete a hazardous waste manifest.
 - ☐ load containers onto the truck.
 - safety training (requirements addressed within the hazard communication training.)
 - not go more than 2 years without re-training your employees on DOT issues.
- ! Hazardous Waste (RCRA) Emergency Training: [IDEM]
- assign an emergency coordinator (usually the manager) to perform the following duties:
 - ☐ post the following information next to the telephone:
 - (the name and telephone number of your shop's emergency coordinator;
 - (the location of your fire extinguisher(s), spill control material, and, if present, fire alarm; and
 - (the telephone number of the fire department (unless your shop has a direct alarm.)
 - ☐ ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal facility operations and emergencies;
 - ☐ respond to emergencies that arise by doing the following:
 - (in the event of a fire, call the fire department or put out the fire using a fire extinguisher;
 - (in the event of a spill, contain the flow of hazardous waste to the extent possible, and clean up the hazardous material and any contaminated materials or soil as soon as practicable;
 - (in the event of a fire, explosion, or a release which could threaten human health outside of the shop, or when you have knowledge that a spill has reached surface water, you must immediately notify IDEM's Emergency Response Section at 317/233-7745 or toll free at 888/233-7745. You must provide the following information to IDEM:

- ! your shop's name, address, and EPA Identification Number;
 - ! date, time, and type of incident (e.g., spill or fire);
 - ! quantity and type of hazardous material involved in the incident;
 - ! extent of injuries, if any; and
 - ! estimated quantity and disposition/makeup of recovered materials, if any.
- ! Other Training:
- be trained by an EPA-certified program if they are working on MVAC systems. A list of EPA-certified training programs is available from EPA's web site at www.epa.gov/ozone/title6/609.
 - understand the legal responsibilities associated with signing the manifest, and the required elements of the manifest form (make sure the manifest matches the container label.)
 - know how to read chemical labels so that you can refuse a shipment if it is incorrectly labeled. [DOT, OSHA]
 - if your shop uses a tow truck, you must:
 - ☐ ensure that drivers are aware of the materials of trade exemption and of the presence of hazardous materials. (See the Tow Truck section in Chapter 4 for more information.)
 - ☐ ensure that a carbon dioxide, dry chemical or equivalent fire extinguisher is in good working condition and securely mounted on the truck and that drivers and maintenance personnel are familiar with the use and care of the fire extinguisher provided.

For All Employees, You Should:

- ! conduct all relevant training annually.
- ! make sure all employees sign a form stating that he or she understands the training received. You may use the example form located in Attachment L.

CHAPTER 6 - GENERAL RESPONSIBILITIES

This chapter addresses general regulatory requirements not otherwise listed in the individual sections within Chapter 5. The majority of regulatory requirements listed in this chapter are OSHA's and the Indiana Department of Fire & Building Services' requirements.

POSTINGS

You Must:

[OSHA unless otherwise noted]

- post the following:
 - OSHA's Job Safety & Health Protection poster (OSHA 2203) in a prominent location within the workplace (note that this poster is also referred to as the OSHA Rights and Responsibilities poster.) You may obtain a copy of this poster by contacting the Indiana Department of Labor, IOSHA Compliance Division at 317/232-6942.
 - NO SMOKING signs in areas where flammable or combustible materials are used or stored. [Fire & Building Services]
- post the following where required for your shop:
 - State Minimum Wage poster. Required for businesses with an annual gross income of less than \$500,000. You may obtain a copy of this poster by contacting the Department of Labor, Employment Standards Division at 317/232-2680.
 - Worker's Compensation Notice. Required for businesses that are subject to the Worker's Compensation Act. You may obtain a copy of this poster by contacting the Workers Compensation Board at 317/232-3808.
 - Child Labor poster. Required for all businesses that employ minors from ages 14 through 17. Available from the Indiana Department of Labor, Bureau of Child Labor at 317/232-2675.
 - Indiana Department of Employment and Training Services (IDETS) Act poster. Available from Indiana Workforce Development, Equal Employment Opportunity Compliance Section at 317/232-7483.
 - Equal Employment Opportunity poster. Required for businesses with 15 or more employees. Available from the Equal Employment Opportunity Commission at 317/226-7212.
 - Family Leave Act poster. Required for all businesses with 50 or more employees. Available from the U.S. Department of Labor, Wage and Hour Division at 317/226-6801.
 - Federal Minimum Wage and Polygraph Act posters. Required for all businesses with an annual gross income of more than \$500,000. Available from the U.S. Department of Labor, Wage and Hour Division at 317/226-6801.
 - OSHA 300 log summary (OSHA 300A). Post this log in February of each year, unless your shop has 10 or fewer employees (see Section 4.4 for more information.) [OSHA]

GENERAL WORK AREA

You Must:

[OSHA unless otherwise noted]

- ensure that all work areas are clean, free of slip or trip hazards, and well-lit.
- ensure that aisle spaces are provided and are kept clear.
- ensure that aisle spaces are a minimum of 48 inches wide. [Fire & Building Services].
- provide employees with restrooms, including washing facilities.
- cover or guard any pits or floor openings.
- for walkways elevated more than 48 inches, provide guard rails. In cases where the walkway is adjacent to dangerous equipment, pits or tanks, the walkway must have standard railing and toeboard regardless of its height.
- ensure that stairs are at least 22 inches wide, have a nonslip finish, and are made from sturdy materials. Standard railings are required on the open sides of all exposed stairways and stair platforms. Note that portable ladders are not to be used as permanent fixtures.
- mark metal ladders with “CAUTION” Do not use around electrical equipment.”
- not allow employees to eat in areas where hazardous chemicals are stored or used.
- require employees to properly wash their hands after handling any chemical products.
- have your shop’s means of egress (exterior shop doors) marked with highly visible Exit signs.
- provide appropriate fire extinguishers, and train employees in their use. [Fire & Building Services]
- inspect, maintain and test portable fire extinguishers.
- if employees are expected to extinguish small fires, employees must be trained annually on the use of fire extinguishers and the hazards of fire fighting.
- not block or hinder access to fire extinguishers.
- not hang items (jackets, hoses, etc.) from fire extinguishers.

PERSONAL PROTECTIVE EQUIPMENT

You Must:

[OSHA]

- follow all applicable requirements listed in the Personal Protective Equipment section of this manual, including, but not limited to the following:
 - provide and maintain goggles, chemical resistant gloves and aprons, face shields, or other equipment as appropriate for the chemicals you have on site. Consult the Material Safety Data Sheet (MSDS) for each chemical to determine required protective equipment. (See the Hazard Communication section of this manual.)
 - provide and require face shields for welding, cutting, or grinding operations. (See the sections on Grinding and Welding in Chapter 5.)
 - keep all personal protective equipment clean, readily available, and in good operating condition.
 - provide an eye wash station or emergency shower in areas where corrosive chemicals will be used.

- provide ear protection if noise levels are at 85 db/hr. for 8 hours or more.
- train employees in the proper selection, use and maintenance of personal protective equipment.

MEDICAL SERVICES

You Must:

[OSHA]

- have someone on site who is trained in first aid if you are more than 4 minutes away from medical facilities.
- have a written procedure and employee training advising employees how to determine if medical treatment is needed. A written plan is not required if your shop is within 4 minutes of a medical facility and you choose to transport patients rather than provide first aid.
- if first aid is to be provided on site, your first aid trained personnel must also be trained in Blood Borne Pathogens and must be given the opportunity to get a Hepatitis B vaccine (at owner's expense.) Contact BuSET or CTAP for more information.
- provide protective equipment (gloves, etc.) and training to all employees, whether your shop's policy is to provide first aid on site or to transport patients to a medical facility.

MACHINERY AND TOOL REQUIREMENTS

You Must:

[OSHA]

- use only approved hand tools that are in good condition.
- ensure that all cord operated tools are grounded or are the approved double insulated type.
- ensure that all portable fans have a protective guard with half inch or smaller openings.
- ensure that employees are trained in the proper operation of each piece of equipment.
- ensure that the machine operator can safely reach all controls from the machine's point of operation and that the operator can cut off the power to the machine without leaving his/her position at the point of operation. The point of operation is the area of the machine where material is positioned and work is being performed.
- ensure that the machine's "pinch points" are guarded with a protective cover. A pinch point is any point, other than the point of operation of the machine, where a part of the body may be caught by the machine's moving parts.
- ensure that all equipment capable of storing energy is locked out and tagged during servicing and repairs. (See the Lockout/Tagout section of this manual.)
- be aware that ground fault circuit interrupters (GFCI) are required for new outlets, and in some instances, on existing outlets. Contact BuSET or CTAP for more information.
- follow appropriate regulations for welding operations (see Welding section in Chapter 5.)

- follow appropriate regulations for grinding operations (see Grinding section in Chapter 5.)

AIR COMPRESSORS AND COMPRESSED AIR

You Must:

[OSHA]

- ensure that air compressors are properly maintained and operated according to manufacturer's recommendations.
- post signs warning of the automatic start-up feature of air compressors.
- **not** use compressed air to clean off clothes or body.
- not use compressed air for cleaning unless the pressure is reduced below 30 psi and proper chip guards are in place.
- not use compressed air when working on brake jobs, unless within a self-enclosed vacuum system. (See Brake and Clutch repair section in this manual.)
- regularly drain moisture from the lowest point of pressure in the line.

HOISTS OR CRANES

You Must:

[OSHA]

- ensure that the rated load is marked and is visible to the operator.
- ensure that the hoist or crane is able to hold up to 125% of its rated load.
- not carry loads over people.

LIFTS

You Must:

[OSHA]

- have a locking mechanism in place anytime someone is under the lift. For those lifts having a locking mechanism only when the lift is fully extended, they must only be used in the fully extended position.
- ensure that lifts not having a built-in locking mechanism are secured with an adjustable jack capable of supporting three times the lifts rated capacity. Secure the lift, not the car.

FIRE PROTECTION/PREVENTION

You Must:

[Fire & Building Services]

- make sure your local fire department is familiar with the fire hazards at your business.
- train employees on safety procedures and responsibilities during a fire emergency.
- train employees on exit routes, including alternative exits.
- provide appropriate fire extinguishers, and train employees on the availability and use of fire extinguishers, alarm systems, sprinklers, etc.
- store flammable or combustible materials according to The Department of Fire & Building

Services' requirements (see Sections 3.3 and 3.4.) Post "NO SMOKING" signs in areas where flammable or combustible materials are used or stored.

- ensure that explosion proof lighting is used in storage areas for flammables.
- keep fire doors closed at all time.
- know if your shop has fire walls and where they are located.

MISCELLANEOUS

You Should:

- install a cross connection control device (backflow preventer) wherever you have directly connected any chemical (even soap) or waste to the drinking water supply. This device prevents contaminated water from being siphoned back through the pipes, potentially contaminating the entire drinking water supply. Note that cross connection control devices are required for car washes.
- make sure your shop has adequate electrical outlets. Extension cords should only be used temporarily.
- laminate or otherwise protect posters and signs located near solvent sinks to prevent them from deteriorating.

No Smoking

WARNING:

**This air compressor is equipped with
an automatic start-up feature**

ACRONYMS

BTU	British Thermal Unit
BuSET	Bureau of Safety Education and Training (part of the Indiana Dept. of Labor)
CTAP	Compliance and Technical Assistance Program (part of IDEM)
CESQG	Conditionally Exempt Small Quantity Generator
CFC	Chlorofluorocarbons
CFR	Code of Federal Regulations
CWA	Clean Water Act
DIY	Do-it-yourselfer (Those who change their own motor oil and take the oil to a used oil collection site.)
DOT	Department of Transportation (Federal agency)
EID	Energy Isolating Devices
EPA	Environmental Protection Agency
EPCRA	Emergency Preparedness & Community Right to Know Act
FP	Flash Point
HAP	Hazardous Air Pollutant
HFC	Hydrofluorocarbon
IAC	Indiana Administrative Code
IC	Indiana Code
IDEM	Indiana Department of Environmental Management
IDETS	Indiana Department of Employee Training Services
IOSHA	Indiana Occupational Safety and Health Administration
LDR	Land Disposal Restrictions
LEPC	Local Emergency Planning Committee
LQG	Large Quantity Generator
MSDS	Material Safety Data Sheet
MVAC	Motor Vehicle Air Conditioning
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NPDES	National Pollution Discharge Elimination System
NRC	National Response Center
OAM	Office of Air Management (IDEM)
O&M	Operations and Maintenance
OER	Office of Emergency Response (IDEM)
OLQ	Office of Land Quality (IDEM)
OSHA	Occupational Safety and Health Administration
OWM	Office of Water Management (IDEM)

P2	Pollution Prevention
PPE	Personal Protective Equipment
POTW	Publicly Owned Treatment Works
PVC	Polyvinyl Chloride
PWSS	Public Water Supply System
RCRA	Resource Conservation and Recovery Act
RQ	Reportable Quantity
SEMA	State Emergency Management Agency
SQG	Small Quantity Generator
TCLP	Total Concentrate Leachate Procedure
TSDR	Treatment, Storage, Disposal and Reclaiming (facility)
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
WHPA	Wellhead Protection Area
WHPP	Wellhead Protection Program
WWTP	Wastewater Treatment Plant

GLOSSARY

Aerosol

A suspension of liquid or solid particles in a gas.

Asbestos

A naturally occurring mineral that when mined and processed, takes the form of small fibers which are usually invisible to the naked eye. The fibers are heat-resistant and extremely durable.

Catalytic Converter

An air pollution abatement device that removes pollutants from motor vehicle exhaust, either by oxidizing them into carbon dioxide and water or reducing them to nitrogen and oxygen.

Characteristic

Any one of the four categories used in defining hazardous waste: ignitability, corrosivity, reactivity, and toxicity.

Chlorinated Solvent

An organic solvent containing chlorine atoms, e.g., methylene chloride and 1,1,1-trichloro-methane, used in aerosol spray containers and in highway paint.

Chlorofluorocarbons (CFCs)

A family of inert, nontoxic, and easily liquified chemicals used in refrigeration, air conditioning, packaging, insulation, or as solvents and aerosol propellants. Because CFCs are not destroyed in the lower atmosphere they drift into the upper atmosphere where their chlorine components destroy ozone.

Conditionally Exempt Small Quantity Generators (CESQG)

Persons or enterprises which produce less than 220 pounds of hazardous waste per month and that meet the CESQG storage and disposal limitations. CESQGs are exempt from most hazardous waste regulations, but are required to determine whether their waste is hazardous, and keep records of the quantity generated and stored on site.

EPA Identification Number

The unique code assigned to each generator, transporter, and treatment, storage, or disposal facility by regulating agencies to facilitate identification and tracking of chemicals or hazardous waste.

Friable Asbestos

Any material containing more than one percent asbestos, and that can be crumbled or reduced to powder by hand pressure. (May include previously non-friable material which becomes broken or damaged by mechanical force.)

Gasoline Volatility

The property of gasoline whereby it evaporates into a vapor. Gasoline vapor is a volatile organic compound.

Hazard Communication Standard

An OSHA regulation that requires chemical manufacturers, suppliers, and importers to assess the hazards of the chemicals that they make, supply, or import, and to inform employers, customers, and workers of these hazards through MSDS sheets.

Hazard Evaluation

A component of risk evaluation that involves gathering and evaluating data on the types of health injury or disease that may be produced by a chemical and on the conditions of exposure under which such health effects are produced.

Hazard Identification

Determining if a chemical can cause adverse health effects in humans and what those effects might be.

Hazardous Air Pollutants

Air pollutants which are not covered by ambient air quality standards but which, as defined in the Clean Air Act, may reasonably be expected to cause or contribute to irreversible illness or death. Such pollutants include asbestos, beryllium, mercury, benzene, coke oven emissions, radionuclides, and vinyl chloride.

Hazardous Chemical

An EPA designation for any hazardous material requiring an MSDS under OSHA's Hazard Communication Standard. Such substances are capable of producing fires and explosions or adverse health effects like cancer and dermatitis. Hazardous chemicals are distinct from hazardous waste. (See: Hazardous Waste.)

Hazardous Waste

By-products of society that can pose a substantial or potential hazard to human health or the environment when improperly managed. Possesses at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity), or appears on special EPA lists.

Incompatible Waste

A waste unsuitable for mixing with another waste or material because it may react to form a hazard.

Manifest (Uniform Hazardous Waste Manifest Form 8700-22)

This manifest is used to identify the quantity, composition, origin, routing and destination of a hazardous waste.

Manifest System

Tracking of hazardous waste from “cradle to grave” (generation through disposal) with accompanying documents known as manifests.

Material Safety Data Sheet (MSDS)

A compilation of information required under the OSHA Communication Standard on the identity of hazardous chemicals, health, and physical hazards, exposure limits, and precautions. Section 311 of SARA requires facilities to submit MSDSs under certain circumstances.

National Pollutant Discharge Elimination System (NPDES)

A provision of the Clean Water Act which prohibits discharge of pollutants into waters of the United States unless a special permit is issued by EPA, a state, or, where delegated, a tribal government on an Indian reservation.

Ozone Depletion

Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons) which break down when they reach the stratosphere and then catalytically destroy ozone molecules.

Permit

An authorization, license, or equivalent control document issued by EPA or an approved state agency to implement the requirements of an environmental regulation; e.g., a permit to operate a wastewater treatment plant or to operate a facility that may generate harmful emissions.

Propellant

Liquid in a self-pressurized pesticide product that expels the active ingredient from its container.

Publicly Owned Treatment Works

A waste-treatment works owned by a state or unit of local government usually designed to treat domestic wastewater.

Release

Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of a hazardous or toxic chemical or extremely hazardous substance.

Sanitary Sewers

Underground pipes that carries off only domestic or industrial waste not storm water.

Septic System

An onsite system designed to treat and dispose of domestic sewage. A typical septic system consists of a tank that receives waste from a residence or business and a system of tile lines or a pit for disposal of the liquid effluent (sludge) that remains after decomposition of the solids by bacteria in the tank and must be pumped out periodically.

Small Quantity Generator (SQG)

Persons or enterprises that produce between 220 and 2,200 pounds per month of hazardous waste and that meet the SQG storage and disposal limitations.

Sump

A pit or tank that catches liquid runoff for drainage or disposal.

Suspect Material

Building material suspected of containing asbestos, e.g., surfacing material, floor tile, ceiling tile, thermal system insulation, and miscellaneous other materials.

Tampering

Adjusting, negating, or removing pollution control equipment on a motor vehicle.

Treatment, Storage, Disposal and Reclaiming (TSRD) facility

A facility that treats, stores, disposes and/or recycles hazardous wastes.

Used Oil

Oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities.

Examples include engine oil, sludge from used oil tanks, transmission fluid, refrigeration oil, compressor oil, hydraulic fluid, etc.

Wastewater

The spent or used water from a home, community, farm, or industry that contains dissolved or suspended matter.

Wellhead Protection Area

A protected surface and subsurface zone surrounding a well or wellfield supplying a public water system to keep contaminants from reaching the well water.

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EMERGENCY ACTION PLAN

The emergency action plan contained in this manual should be customized to fit the needs of your particular shop.

I. Purpose

The purpose of an Emergency Action Plan is to protect the employees from serious injury, property loss, or loss of life in the event of a natural disaster or emergency. A natural disaster constitutes any one (1) of the following: severe thunderstorm, tornado, or earthquake. Emergencies would constitute any one (1) of the following: bomb threat, robbery, fire, or hazardous chemical spill. In the event of any disaster listed, this Emergency Action Plan describes the responsibilities and actions to be taken to protect all employees.

The emergency action plan must be in writing and must cover those designated actions employers and employees must take to ensure employee safety from fire and other emergencies. For those employers with 10 or fewer employees, the plan may be communicated orally to employees and the employer need not maintain a written plan. IDEM recommends that all employers keep a written plan.

II. General Procedures

The employer needs to provide emergency escape procedures and emergency escape route assignments to every employee in case of an emergency as well as procedures to account for all employees after an emergency evacuation has been completed.

Emergency alarms should be established for each vehicle maintenance shop that complies with OSHA standards. In the event of a natural disaster, the warning may come from a radio or civil defense siren, or there may be no warning. In the event of an emergency, the warning may come from any one (1) of the following sources: in-plant sprinkler system, telephone, security alarm, or verbal warning from personnel in the plant.

A person receiving notification of a possible natural disaster or in-plant emergency should immediately notify their supervisor and the owner/manager.

A map of all evacuation sites will be displayed in the lunchroom and at every work area. Each map will show the route and exit to take depending where employees are located in the plant. It will be the responsibility of the shop supervisor to inform employees of these evacuation routes.

A. Natural Disasters

In the event of a SEVERE THUNDERSTORM, all personnel should have a radio on to listen for possible warnings. All open exterior doors should be closed, and customers in the shop should be kept away from plate glass windows.

In the event of a TORNADO, warnings may be sounded by civil defense sirens and National Weather Service warnings on radio. At times, tornadoes form with no warning. The only indication of a problem is often the sound of a train moving toward you. If the shop is in or near the path of a tornado, the following procedures must be followed immediately and in the following order as time and safety permits:

1. All personnel and customers should be moved to a place of safety in the shop, such as an interior wall, beneath a counter or table, but away from windows.
2. All exterior doors closed.
3. All computers turned off to protect circuit boards.
4. Machinery turned off at main power switch.
5. After the tornado passes, the supervisor on duty should evacuate the shop, if necessary, and make sure all personnel are accounted for. Check for injuries, and await the arrival of emergency personnel.

EARTHQUAKES normally occur without any type of warning. Due to the suddenness, all personnel should attempt to get into a doorway passage or under a table or desk. NO ONE SHOULD GO OUTSIDE THE BUILDING. After the earthquake has stopped, all employees should help restore calm to fellow workers; check for injuries; shut off all gas, electricity, and water at main controls.

B. Man-made Emergencies

A BOMB THREAT will normally be telephoned in. If this should happen, the person receiving the call should immediately notify the shop supervisor or owner. The supervisor should, in turn, notify the owner at once. Either the supervisor or owner must call the police to inform them of the threat. Shop personnel must follow any and all instructions given them by law enforcement personnel.

In the event of a ROBBERY, the person or persons involved should do exactly as requested by the robber. If your shop is equipped with a security system, set it off only if the robber will not be able to notice. If this cannot be done safely, wait until the robber has left, and then do so immediately. If your shop is not equipped with a security system, call the police as soon as the

robber has left the scene. When the police arrive, DO NOT run outside to them; they will come inside to you. Just stand at the counter and wait for their instructions. If anyone is injured during a robbery or robbery attempt, DO NOT use the security alarms. Call 911 instead and request medical assistance.

To the best of your ability, remember what the person looked like and write down a description and other relevant information to give to the police when they arrive. Include a physical description, description of any weapon, and direction of travel when they left the shop.

In the event of a FIRE, quickly determine the scope of the fire. If it is very small and can be managed quickly with the use of the fire extinguisher, put out the fire. Otherwise, evacuate the shop and call 911 (using the phone in a neighboring store). If it can be done safely, turn off gas and steam lines. Make sure the fire fighters understand that there are small amounts of hazardous chemicals inside the building, and provide them with the location of the MSDS book.

In the event of a HAZARDOUS CHEMICAL SPILL, do the following*:

1. Try to determine what has been spilled. Look at the container the chemical was in, or see where the chemical is draining from.
2. Throw down absorbent material to help contain the spill.
3. Call the shop owner or manager to inform them of the emergency and the steps that have been taken.
4. Turn on all ventilation systems and open all doors. Refer to the MSDS book for further instructions on clean-up. If help is needed to clean up, call your hazardous waste hauler.

III. Fire Prevention & Workplace Hazards

A. Fire Prevention

The employer must provide portable fire extinguishers for employee use in the workplace, and the employer shall also provide an educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage fire fighting.

It is the responsibility of all employees to prevent any type of fire in the building. The following are general rules to accomplish this objective:

1. Extinguish all cigarettes in their proper place.
2. Do not smoke or have open flame around any type of chemicals or gasses.
3. Smoking shall be confined to designated areas (if any) or outside.
4. Do not put hot cigarette butts in trash cans.

B. Workplace Hazards

These include equipment and all chemicals used in the shop. A partial list of chemicals includes solvent, paint removers, rust removers, oils, antifreeze, etc. It is important that all chemicals are stored in clearly marked containers. At the end of each day, all chemicals should be tightly capped and put away in designated areas. Store flammable or combustible materials according to The Department of Fire & Building Services' requirements (see Sections 3.3 and 3.4.)

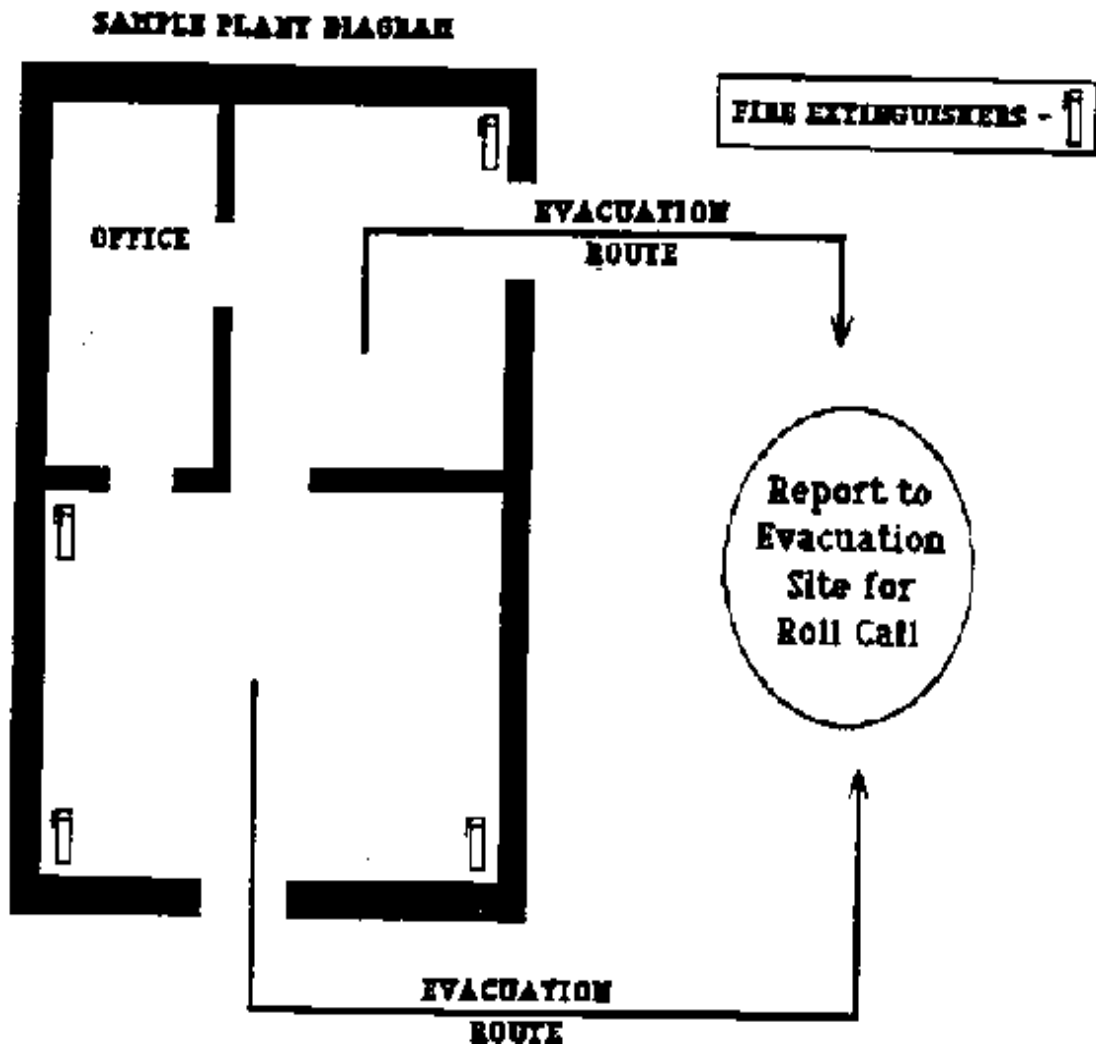
Good housekeeping will prevent many problems. It is the responsibility of EVERY employee to make sure trash is kept off the floors (and taken to the dumpster when necessary), and that exits are kept clear. If there are any questions about safety in the shop, employees should contact the owner/manager right away.

A more detailed guide covering the development of an Emergency Action Plan is available from the Bureau of Safety Education and Training (BuSET.)

This guide is available free of charge and may be obtained by calling BuSET at (317) 232-2688 or by using the BuSET order form on the Fax-On-Demand system.

OUTSIDE EVACUATION

APPENDIX #1 (Continuous High Pitched Alarm) - Evacuate



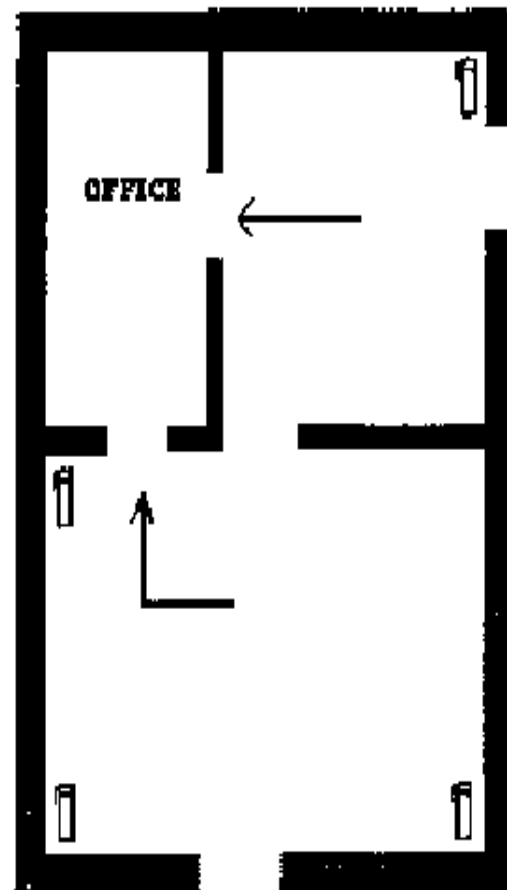
SEGMENTED AREA EVACUATION

APPENDIX #2 (Intermittent Alarm)

Do Not Evacuate



SAMPLE PLANT DIAGRAM



FIRE EXTINGUISHERS -

POST THIS NEAR ALL TELEPHONES

EMERGENCY INFORMATION

EMERGENCY PHONE NUMBERS

Fire _____ Police _____ Ambulance _____

NAME OF FACILITY EMERGENCY COORDINATOR _____

PHONE NUMBER/BEEPER NUMBER _____

COUNTY SHERIFF _____

INDIANA STATE POLICE _____

FBI _____

U. S. MARSHAL _____

POISON INFORMATION _____

CIVIL DEFENSE _____

WATER DEPARTMENT _____

WEATHER DEPARTMENT _____

LOCATIONS OF FIRE EXTINGUISHERS _____

LOCATION OF FIRE ALARM (if you have one) _____

THE HAZARD COMMUNICATION STANDARD

The Hazard Communication Standard, also known as the Worker's Right-to-Know Law, was enacted by OSHA to ensure that hazards in the workplace are identified and communicated to all employees and employers. This transmittal of information is accomplished through a comprehensive hazard communication program which includes container labeling, material safety data sheets, and employee training

This standard places several requirements on facilities which have even one hazardous chemical in their workplace. Hazardous chemicals are substances which pose potential physical or health hazards and therefore by definition are fairly broad-based. Examples include oils, antifreeze, gasoline, corrosives, solvents, etc. **For the purposes of this document, all chemicals used in vehicle maintenance shops are considered hazardous and will therefore be collectively referred to as "chemicals."**

The Hazard Communication Standard applies to any business, including vehicle maintenance shops, that uses, distributes, or imports hazardous chemicals, *regardless of the number of individuals employed*. All facilities must satisfy the following five requirements to be in compliance:

1. Evaluate all chemicals in the workplace to determine if they are hazardous (hazard determination).
2. Develop a written hazard communication program.
3. Ensure that all hazardous chemicals used in the workplace are properly labeled.
4. Maintain an updated inventory of material safety data sheets (MSDS) for each hazardous chemical in the workplace.
5. Provide information and training on hazardous chemicals found in the workplace to all employees.

Categories of the Worker's Right-to-Know Law

Chemical Inventory/Hazard Determination

The first category requires you to inventory all chemicals found in your workplace to determine if they are hazardous. This hazard determination should be based on information provided by the chemical manufacturer. The actual procedure you use to determine the hazard of each chemical must be in writing.

Performing a chemical inventory is most easily accomplished by walking through your facility and recording the name of every chemical used or found (i.e., office supplies, household cleaners, solvents, fuels, paint, lubricants, etc.). Do not base your hazardous determination merely on the presence or absence of a material safety data sheet (MSDS) or warning label. The inventory list should include all chemicals, especially those with the following characteristics:

- flammable, combustible, or ignitable;
- causes skin, eye, or respiratory irritation;
- dangerous if swallowed; and/or
- produces problems when mixed with other chemicals (e.g., bleach & ammonia.)

The name of each chemical added to your inventory list should correspond to the name identified on its MSDS, if one is available. Other useful information worth recording on the inventory list includes: the chemical's trade or manufacturer's name; whether an MSDS is available for that chemical; and the chemical's location in your shop. When completed, this inventory list will become a component of the hazard communication program.

Examples of vehicle maintenance products covered by the Hazard Communication Standard include:

Gasoline	Oils	Brake Fluids	Freon	Polishes
Antifreeze	Detergents	Parts Cleaner	Caustics	Grinding Wheels
Soaps	Paints	Body Fillers	Degreasers	Welding Rods
Condenser Cleaners (usually a corrosive substance)			Buffing Compounds	
Solvents (even those in spray cans)		Asbestos (as part of brakes)		
Metals, such as Chromium, Lead, Zinc (as part of stainless steel, bearings, etc.)				

Chemical Labeling

This second category requires labeling of all chemical containers (i.e., spray bottles, drums, storage tanks, etc.) in your workplace. All such containers should be labeled by the manufacturer, and every effort should be made to keep these substances in their original containers. These labels warn employees of the chemical's potential dangers and provide a source for obtaining further information about the substance. The label provided by the manufacturer should contain the following:

- 1) Identity of the hazardous chemical(s);
- 2) Appropriate hazard warning; and
- 3) Name & address of the chemical manufacturer, importer, or other responsible party.

Employers should check to see that all newly-delivered chemicals are properly labeled. *If a proper label is not attached, refuse shipment until a proper one is applied.* The chemical manufacturer may be able to supply you with additional labels as needed.

OSHA does not require a specific labeling system as long as the above information is provided, is legible, and is in English. All chemicals arriving in the workplace should have the required manufacturers' hazardous label on the container. It is, therefore, unnecessary to re-label any container unless:

- 1) the label is worn, destroyed, or becomes outdated; or
- 2) the chemical is transferred into a smaller container.

Material Safety Data Sheet (MSDS)

The Hazard Communication Standard requires all chemical manufacturers and importers of hazardous chemicals to obtain or develop an MSDS for each chemical they produce or import. Employers, including vehicle maintenance shops, are required to have an MSDS for each hazardous chemical they use.

The employer is not responsible for information on the MSDS which they have not prepared, but it is their obligation to check the document for obvious inaccuracies. If an MSDS is found to be incomplete, inaccurate, or outdated, the employer needs to contact the manufacturer to request a corrected copy. MSDSs are typically available from the chemical manufacturer or supplier but it is the employer's responsibility to assure their presence with each chemical received. *(See sample letter on page 17.)*

MSDSs contain specific hazard information such as:

- 1) physical and health hazards;
- 2) routes of entry;
- 3) exposure limits;
- 4) precautions for safe handling;
- 5) spill clean-up procedures;
- 6) personal protective equipment required;
- 7) emergency and first aid procedures; and
- 8) the name, address and telephone number of the manufacturer.

All of this information on the MSDS must be in English and available to all employees working with or near the hazardous chemical. A copy of the MSDS should also be available to members of your community, by request, as a component of the Community-Right-to-Know law (see SARA Title III).

Employee Training & Information

This category requires employers to provide employees with information and training on all chemicals found in their workplace at the time of initial assignment and whenever a new hazard (chemical) is introduced into their area. Training needs to be provided to those employees who have the potential for exposure to any chemical. It is always better to overtrain than to mistakenly overlook someone that you didn't think needed to be trained.

The intent of this category is to ensure that employees have the appropriate information and training before they are exposed to a chemical. Employers need to provide information about the standard, where hazardous chemicals are present, along with the location and availability of the hazard communication program, hazard chemical inventory, and MSDS(s).

Training should be specific to the workplace and includes: methods and observations used to detect the presence or release of the chemical; physical and health hazards; protective measures required; labeling; and explanation of the MSDS. All chemicals listed on the hazardous chemical inventory should be covered in the training. Training should allow for interaction between the instructor and the employees to ensure they understand the information presented.

Employers are responsible for ensuring that all affected employees comprehend and apply the information provided to them. They should know the location of the MSDS(s), how to read a label, have general knowledge of the hazardous chemicals in the workplace, and how to respond appropriately in emergency situations. Each employee's level of knowledge with regard to training and information of this standard can be obtained through testing or by demonstration of their knowledge. Informational posters, employee incentives, etc. may help ensure the retention of the training and information provided.

Always document your training and retrain as necessary (at initial job assignment or when job assignment is changed, when new chemicals are introduced into the workplace and when exposure risk changes). Training records must include the date and content of the program; name and qualifications of the instructor; and a list of attendees. These records should be kept for duration of employment plus an additional thirty (30) years.

The Written Hazard Communication Program

This written hazard communication program combines all of the required components of the standard (hazard determination, chemical inventory list, labels, MSDS, information and training) into one working document. This written program should address at least the following topics:

- How the hazard chemical determination will be conducted.
- The methods the employer will use to inform employees of the hazards of non-routine tasks.
- How the employer will notify contractors working on-site of hazards found in the workplace. Include how information on your labeling system, MSDS(s) and a copy of your Hazard Communication Program will be provided to the contractor, which routine precautions need to be taken, and proper emergency procedures.
- How container labeling will be handled.
- How training and information will be provided.
- Methods for obtaining, organizing, and distributing MSDSs.

A copy of the written program must be made available upon request to all employees and OSHA officials.

A more detailed guide covering the development of a written Hazard Communication Program is available from the Bureau of Safety Education and Training (BuSET.)

This guide is available free of charge and may be obtained by calling BuSET at (317) 232-2688 or by using the BuSET order form on the Fax-On-Demand system.

Written Hazard Communication Program

I. Introduction

A. Statement of Need

_____ vehicle maintenance shop has implemented a Hazard Communication Program for two reasons:

- To assist _____ vehicle maintenance shop in achieving our ultimate goal of a safer working environment for our employees.
- To comply with the Federal Occupational Safety and Health (OSHA) Standard (1910.1200).

B. Background

To reduce the incidence of chemically related occupational illness and injury, the Occupational Safety and Health Administration (OSHA) published the Hazard Communication Standards in November, 1983. In 1987 the standards were expanded to include non-manufacturing employers. These standards provide employees with the “right to know” about the hazards of the chemicals they handle and those available in their workplace.

C. Anticipated Benefits

Several benefits are anticipated with the implementation of _____ vehicle maintenance shop’s Hazard Communication Program. These include:

1. Overall improvement of _____ vehicle maintenance shop’s safety program.
2. Prevention of chemical related illnesses and injuries.
3. Avoidance of OSHA citations, violations, and related compliance costs.
4. Improvement of employer-employee relations by establishing regular lines of communication.

Written Hazard Communication Program (Contd.)

II. Purpose

The purpose of _____'s Hazard Communication Program is to ensure that the hazards of all chemicals located in the facility are evaluated and that information concerning physical and health hazards are transmitted to employees who may potentially be exposed to these substances. It is not only the intent of _____ to fully comply with the OSHA Standard 1910.1200, but also to improve the overall safety of our business. A successful Hazard Communication Program will reduce potential incidents of chemical related illnesses and injuries.

III. Authority

_____ 's Hazard Communication Program is required by the Occupational Safety & Health Administration, pursuant to Title 29 CFR Subpart Z part 1910.1200.

The owner/operator shall have the authority and responsibility to assure compliance with all regulations governing hazardous materials and waste management. In the event of noncompliance, immediate corrective action is to be taken while a plan for permanent correction is developed and implemented.

The owner/operator of _____ Vehicle maintenance Shop shall determine hazardous materials policies and procedures which will be in writing and available upon request to employees and government officials.

IV. Summary of Title 29 Subpart Z Part 1910.1200, Hazard Communication Standard, effective May 23, 1988.

The passage of the OSHA's Hazard Communication Standard gives _____ vehicle maintenance shop the responsibility to establish a written, comprehensive program which includes provisions for container labeling, material safety data sheets (MSDS), employee information and training. The written program must contain a list of the hazardous chemicals in each work area, the means used to inform employees of hazards of non-routine tasks and methods used to inform contractors in our facilities of chemical hazards to which they may be exposed.

This written Hazard Communication Program is _____ 's plan to comply with the objectives of the standard. Each objective will be specifically defined and discussed in this document. Additionally, this written program must be reviewed during employee training and a copy available to each employee upon request.

Written Hazard Communication Program (Contd.)

V. Objectives

1: List of chemicals used at _____ Vehicle maintenance Shop

The owner/operator is required to complete and have available the entire inventory of chemicals available in the facility. This list will be located in _____, while a master list will be kept on file in the _____.

Procedure for Chemical Inventory Update (several methods will be utilized to maintain an updated chemical list.)

- A. The owner/operator will have a chemical inventory on file. New chemical products purchased will be immediately reported to the owner/operator, who will evaluate the new product's MSDS to determine if the product should be included in the Hazard Communication Program.
- B. As new chemicals are purchased, they will be recorded on the chemical inventory list. Changes in inventory will be noted on the inventory form with updates provided to effected employees.

2: Material Safety Data Sheets (MSDS)

Materials Safety Data Sheets are the keystone to a successful Hazard Communication Program. MSDSs are designed to provide the information needed to handle chemicals safely. They provide the necessary information for training, hazard evaluation, proper handling, emergency procedures, and employee personal protective equipment. The following procedures will be implemented to ensure that _____ vehicle maintenance shop maintains an MSDS for all chemicals identified on the chemical inventory and the local purchase inventory.

- A. Chemical manufacturers supplying the facility with products are required to make available upon request an MSDS for each product shipped. As MSDSs are checked off against the chemical inventory, missing MSDS should be requested in writing from the respective manufacturer.
- B. The owner/operator will document attempts to obtain all MSDSs.
- C. The owner/operator will require an MSDS for each new chemical purchased, as well as updated MSDS for existing chemicals. This requirement will be indicated on all purchase orders. The owner/operator will then maintain a file of all current MSDSs.

Written Hazard Communication Program (Contd.)

D. Copies of the appropriate MSDSs will be provided by the owner/operator and maintained and readily available throughout the facility. A copy of all MSDSs will be maintained in the following locations:

1. _____
2. _____
3. State Emergency Response Commission
4. _____ Fire Department

E. A program to better understand and interpret an MSDS will be available and will serve as a training discussion item.

F. Updated and new MSDSs will be immediately placed in binders. Owner/operators are responsible for in-servicing all employees in their respected area on the new and updated MSDS when that information becomes available.

G. _____ vehicle maintenance shop will rely on each chemical manufacturer's testing and hazard evaluation of chemical products used throughout the plant.

3: Labeling Procedures

A. Original Containers - _____ vehicle maintenance shop will rely heavily on chemical suppliers to provide labeling on their products used in the business that meets the requirements of 1910.1200 (f). To comply, the label must contain the following:

1. The identity of the hazardous chemical.
2. The appropriate hazard warning (including target organ, route of entry, and health hazards.)
3. The name and address of the chemical manufacturer.

Written Hazard Communication Program (Contd.)

- B. Shipped Containers - with each chemical shipment, the owner/operator will check all containers to ensure that all labels meet the requirements outlined in this program. *The owner/operator will not accept improperly labeled containers.* If there is a problem with a container, owner/operator should be notified immediately.

The owner/operator will check the chemical inventory to ensure that the MSDS has been received and updated for the product.

- C. Local Purchases of Shelf Stock Chemicals - The following procedures will be implemented to ensure that local purchases of shelf stock chemicals (i.e., cleaning agents or other maintenance supplies) are properly labeled:
1. A local purchase inventory must be maintained.
 2. Purchases of shelf-stock chemicals which are not listed on the inventory will be reported to the owner/operator.
 3. The owner/operator must inspect local purchases for their condition and whether these items meet the minimum label requirements of 1910.1200 (f) (1) (i, ii, iii). Chemicals that do not meet these minimum labeling requirements should not be purchased or allowed into the facility.
- D. Individual Portable Containers - Each chemical transferred from the original container into individual portable ones, which will be used *immediately* that day, by a single individual during their shift, does not require labeling.

Those chemicals transferred for later use or utilized by multiple individuals, must have identifying labels affixed to the container providing the following information:

1. Identification of the hazardous chemical
2. Appropriate hazard

These labels may be handwritten

The owner/operator or supervisor is responsible for ensuring that proper labeling is on all individual portable containers used in their areas.

Written Hazard Communication Program (Contd.)

4: Employee Training

The Hazard Communication Standard requires the _____ Vehicle maintenance Shop to provide information and training to employees who have the potential of being exposed to hazardous chemicals in their work areas. Additionally, the employer must also explain the components and objectives of its written Hazard Communication Program to its employees.

The owner/operator is responsible for developing procedures for maintaining detailed records of all Hazard Communication training.

- A. Initial Training of Employees - Training of personnel will be administered by the owner/operator or their designee. He/she will utilize a variety of teaching methods (i.e., written materials, charts, audio-visuals, etc.), in addition to general discussion, when training the employees.
- B. New Employees - Will receive training promptly during initial employee orientation.
- C. Existing Employees - Will be trained when transferred to a work area where new or different hazardous chemicals are used. Retraining as needed will be the responsibility of the owner/operator and will be documented and kept in the employee's personnel file.
- D. Educational objectives - The owner/operator is responsible for developing procedures for educating their personnel in compliance with this Hazard Communication Program. These procedures include detailed job-specific information for their department. At a minimum, the Hazard Communication educational procedures must address the following:
 - 1. The Hazard Communication Standard.
 - 2. Understanding and interpreting the information on labels and MSDS.
 - 3. How employees can obtain and use the available hazard information.
 - 4. The location of the written Hazard Communication Program, MSDS, and inventory list of hazardous chemicals in the workplace.
 - 5. Chemicals and hazards that the employee may potentially be exposed to in their work area.
 - 6. Container Labeling.
 - 7. Chemical Storage Locations.

Written Hazard Communication Program (Contd.)

8. Proper recognition and handling of hazardous chemicals.
9. Proper use and location of safety & personal protective equipment.
10. 10. Methods and/or observations to detect the presence of hazardous materials.
11. 11. Emergency response and evacuation procedures.

5: Procedures to Assess Hazards of Non-Routine Tasks

Non-routine tasks are those tasks which do not occur on a frequent basis or those tasks which are not identified as a normal production task. Those non-routine tasks required of vehicle maintenance personnel will be evaluated on a case-by-case basis as needed to determine if they are considered to be in compliance with this program.

6: Contract work performed at _____ vehicle maintenance shop

- A. Contractors will receive a list of chemicals used in the work area.
- B. All contractors will be required to notify _____ vehicle maintenance shop of hazardous chemicals brought onto the premises.
- C. A copy of our Hazard Communication Program will be available to the contractors from the owner/operator.
- D. A list of chemicals and corresponding MSDS will be available to the contractor from the owner/operator.
- E. Appropriate project training will be conducted by the project or job supervisor for all persons associated with the project, including contractors, when hazardous materials will be used or disposed of.
- F. Training will be accomplished prior to starting the job or project and will include the following:
 1. A discussion of the information listed on the MSDS for each hazardous material used during the job or project.
 2. Job specific details for storing, using, and disposing of the hazardous materials used during the job or project.
 3. Job specific spill, leak, and uncontrolled reaction procedures.
 4. Appropriate evacuation procedures.
 5. Job specific safety and personal protective equipment and the proper use of both.

Written Hazard Communication Program (Contd.)

G: A record of the project training will be retained in the employee file by the owner/operator.

7: Storage of Hazardous Materials

The owner/operator is responsible for the proper storage of hazardous materials in the plant. Follow the guidelines provided in the corresponding MSDS for proper storage of the chemical.

8: Spill Cleanup, Removal, & Disposal

The owner/operator or their designee is responsible for the proper clean up of spills, removal, and disposal of hazardous materials in their area. Follow the guidelines provided in the corresponding MSDS for proper spill and disposal procedures.

9: Monitoring and Evaluation of Program

The owner/operator will monitor and evaluate the effectiveness of the Hazard Communication Program, on a quarterly basis, through:

- A. Review of occurrence reports relating to hazardous material events, with appropriate follow up action if necessary.
- B. Hazard Communication Program inspections, with follow up recommendations for correction if deficiencies are identified.
- C. Evaluation of employee education programs.
- D. The policy will be reviewed annually and updated accordingly by the owner/operator.

Approved by:

Date:

LOCKOUT/TAGOUT PROGRAM

The Lockout/Tagout Rule requires employers to establish a written program and utilize procedures for affixing appropriate lockout/tagout devices to energy isolating appliances. These devices include electrical circuit breakers, disconnect switches, as well as other tools that physically prevent the transmission or release of energy. Occupational Safety and Health Administration (OSHA) developed the Lockout/Tagout Rule to prevent injuries from occurring while machines are being serviced or maintained.

Vehicle maintenance shops may do the servicing or maintenance on their own equipment or may have these duties contracted out. In either case, it is essential that all workers understand that a potentially dangerous condition exists whenever a machine is being serviced, and the people who normally operate the equipment are unaware of this activity.

Locks and tags are used to prevent people from inadvertently starting machines or equipment when they are being serviced. When a lock is used on energy isolating devices (EID), such as circuit breakers, on-off switches, or plugs, it will physically prevent anyone from turning on the system. If the EID is capable of being locked out, it must be locked out (rather than merely tagged.) All newly installed equipment must be capable of being locked out. Under unusual circumstances, when a lockout device cannot be applied to a piece of machinery or equipment, a tag system may be utilized by the employer if they can demonstrate that an equal level of safety is achieved using a tagout procedure. If necessary, chains, wedges, blocks, or other hardware should be used to restrain energy.

Lockout/Tagout actions should be implemented whenever servicing and maintenance activities are being performed, which include: constructing, installing, setting-up, adjusting, inspecting, or modifying any equipment.

OSHA's Lockout/Tagout Program does not apply when minor adjustments and servicing tasks take place during normal production operations. These activities are not covered by this standard if they are routine, repetitive, and integral to the use of the equipment for production, provided that the work is performed using alternative measures which provide effective protection.

Responsibility

All employees shall be instructed on the safety significance of the lockout/tagout procedure. The employer must, at no cost to each authorized employee, furnish the necessary items to effectively carry out these procedures. The initial training on lockout/tagout should be given during employee orientation. Additional training will be given to authorized and affected employees when the employee is assigned to a job that requires direct use of lockout/tagout procedures. All employees must be able to recognize lockout/tagout equipment and shall be updated annually on new procedures. In this case, as in all others, training should be documented and updated as conditions change.

Classifications

All employees are placed in one of three categories:

Authorized: Any employee whose job requires them to do servicing or maintenance on any machine and while performing these functions, puts themselves in a potentially hazardous position.

Affected: Any employee who, during normal job duties, will be affected by the locking or tagging out of a machine they work on.

Other: Any employee whose specific job assignment is not affected by a machine's shut down.

Preparation for Lockout/Tagout

Before starting any service or maintenance on a piece of equipment, all authorized employees involved in the repair or maintenance will make a visual survey to locate and identify all energy sources. This is done to ensure that all appropriate energy sources are properly locked or tagged out. On many machines, there may be more than one source of energy.

Sequence for Lockout/Tagout

1. Notify all effected employees that a lockout/tagout procedure is going to be used on the machine and the reason for it.
2. If the machine or equipment is being operated, shut it down by normal stopping procedures.
3. Go to the energy source and operate the switch, valve, or other energy disconnect so the equipment is isolated from its energy source.
4. Stored energy such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, air, gas, steam or water pressure, must be dissipated by bleeding off or restrained by methods such as repositioning, strapping or blocking.

5. Lockout or tagout the energy isolating devices (valves, switches, etc.) with individual locks and tags.
6. After ensuring that no personnel are exposed, attempt to restart the machine using normal operating controls to make certain that the machine will not operate.
CAUTION: MAKE SURE TO RETURN OPERATING CONTROLS TO “OFF” OR “NEUTRAL” POSITION AFTER TEST.
7. The machine is now locked and tagged out.

Restoring machine or equipment to normal production

1. After the maintenance is completed and the equipment is ready for normal production, check the area around the machine to ensure that no one is exposed to an unsafe situation during restart.
2. Check to make sure all tools and supplies are removed from the machine.
3. Make sure all guards and safety equipment are reinstalled.
4. Notify all effected personnel that the machine is about to be re-energized.
5. After making sure the machine controls are in the “off” or “neutral” position remove lock and tag and re-energize machine.

Group lockout

When servicing and/or maintenance is performed by two or more individuals, they must utilize special procedures.

1. Responsibility. Primary responsibility for the lockout is vested in one employee working on that particular job. This employee will maintain responsibility throughout the project.
2. Multiple individual locks. Each authorized employee shall affix a personal lockout/tagout device to the group lockout devise, group lockbox, or comparable mechanism when he or she begins work, and shall remove those devices when their job is completed on that project.

Shift or personnel changes

1. When a shift or personnel change occurs, a designated employee shall insure the continuity of the lockout/tagout protection.
2. The designated employee shall provide for the orderly transfer of lockout or tagout devices between off-going and oncoming employees.

Procedures to take if Lockout/Tagout cannot be accomplished

1. Notify all effected employees that maintenance or repair of machinery is going to take place.
2. All effected employees must acknowledge this information (either verbally or in writing.)
3. The machine is then stopped (shutdown) and the energy source removed, if possible.
4. Follow procedures to dissipate energy as indicated above.

Outside Contractors

When outside contractors are doing maintenance or repair work on your equipment, they must demonstrate their lockout/tagout procedures to all effected employees. If the contractor's work is unrelated to your operation (i.e., plumbing, heating and cooling, air monitoring, etc.), the operator must inform the contractor of the potential hazards of the equipment (and chemicals) in the area.

This entire program shall be reviewed on an annual basis and upgraded when necessary.

A more detailed guide covering the development of a Lockout/Tagout Program is available from the Bureau of Safety Education and Training (BuSET.)

This guide is available free of charge and may be obtained by calling BuSET at (317) 232-2688 or by using the BuSET order form on the Fax-On-Demand system.

PERSONAL PROTECTIVE EQUIPMENT

Employers are required to provide personal protective equipment (PPE) to employees who may be exposed to hazards (i.e., chemical, environmental, mechanical) that may cause injury, illness, or impairment from absorption, inhalation, physical contact, or light radiation. PPE includes clothing and accessories (boots, gloves, respirators, eye, face, hearing protection, etc.) designed to create a barrier against workplace hazards. The requirement to provide PPE occurs simultaneously with maintaining good engineering, work practices, and/or administrative controls. Respirators should only be used when the previously listed measures do not sufficiently control the amount of harmful dusts, fogs, fumes, mists, gases, smokes, sprays and/or vapors. Note that the use of respirators is accompanied by numerous requirements, such as medical monitoring, fit testing, training, etc.

Vehicle maintenance personnel may be exposed to a variety of chemicals, including solvents, freon, antifreeze, corrosives and petroleum products. PPE requirements may include items such as: nitril gloves, eye protection, and chemically resistant aprons. To determine your employees' specific PPE needs, the following steps should be followed:

1. Hazard Assessment

Employers are required to evaluate their workplace to determine the presence of hazards requiring the use of PPE. This same hazard assessment is performed as a required component of the Hazard Communication Standard. Employers must certify in writing that a workplace hazard assessment was performed. In addition, employers must inform employees of their PPE selections and ensure that employees use the specified equipment.

A hazard assessment can be performed using the following guidelines:

- a. Survey Facility - Walk through the plant and identify sources of potential hazards to workers; with special consideration given to the following:
 - 1) Chemicals - Review the Material Safety Data Sheets (MSDS) you have for the chemicals in the business and the PPE necessary will be listed for you.
 - 2) Heat - Inspect your business for procedures and equipment that poses potential thermal injuries to employees (e.g., welding, working on engines that are hot)
 - 3) Mechanical (e.g., grinders, hydraulic lifts)
 - 4) Penetration (sharp edges)
 - 5) Compression or impact
 - 6) Potentially injurious light radiation (e.g., welding arcs)
- b. Inspect existing PPE supplies and check for evidence of damaged or defective parts.

- c. Organize data collected from the walk-through survey and analyze the information to determine the level of risk present, and the type of engineering controls and PPE that will be required. The MSDS(s) serves as a good reference source for determining the PPE needed.
 - d. Document the procedures followed in the hazard assessment to ensure you are complying with the PPE regulation. Remember, the more you document, the easier it is to demonstrate your compliance with the standard during an inspection.
2. Selection of Personal Protective Equipment (PPE)

A written policy for selecting PPE should be available so that all employees can read and understand the purpose and intention of the policy. The written policy should include the following statements: 1) the PPE selected is based on the performance of specific tasks; and 2) the required PPE is available in appropriate sizes to fit all employees. A sample policy statement follows:

The PPE selected for our employees is based on the type of task being performed and the risk of exposure that is anticipated when employees are exposed to specific hazards. The PPE will be provided in different sizes to fit all employees and will be maintained by manufacturers' guidelines to ensure continued proper performance.

Periodically, management will inspect the PPE to ensure that it is in workable condition, free of defects, and capable of continuing to provide the intended protection to our employees. Each individual employee must notify management immediately of any damage or defects in the PPE that makes the equipment incapable of properly protecting the employee.

3. Training & Documentation

Before employees begin work using PPE they must be trained to know the following:

- When PPE is necessary
- Which type of PPE is required
- How the equipment is to be worn
- The limitation of the PPE to protect the employee from hazards
- The proper care, maintenance, useful life, and disposal of PPE.

Employers are required to certify in writing that training has been carried out and that employees understand it. Each written certification must include:

- The name of the employee trained
- The dates of training
- Certification of training for PPE

Form Letter for Obtaining a
Material Safety Data Sheet (MSDS)

Letterhead

Date

Name and address of MSDS supplier

(manufacturer, importer or distributor)

Dear Mr. or Ms

My company recently purchased your product _____ and a Material Safety Data Sheet (MSDS sheet) was not provided.

Please send me an appropriate MSDS sheet which will meet the requirements set forth in the OSHA standards 29 CFR 1910.1200 and 29 CFR 1926.59

Thank you for your cooperation

Sincerely,

Employee name

Job Title

