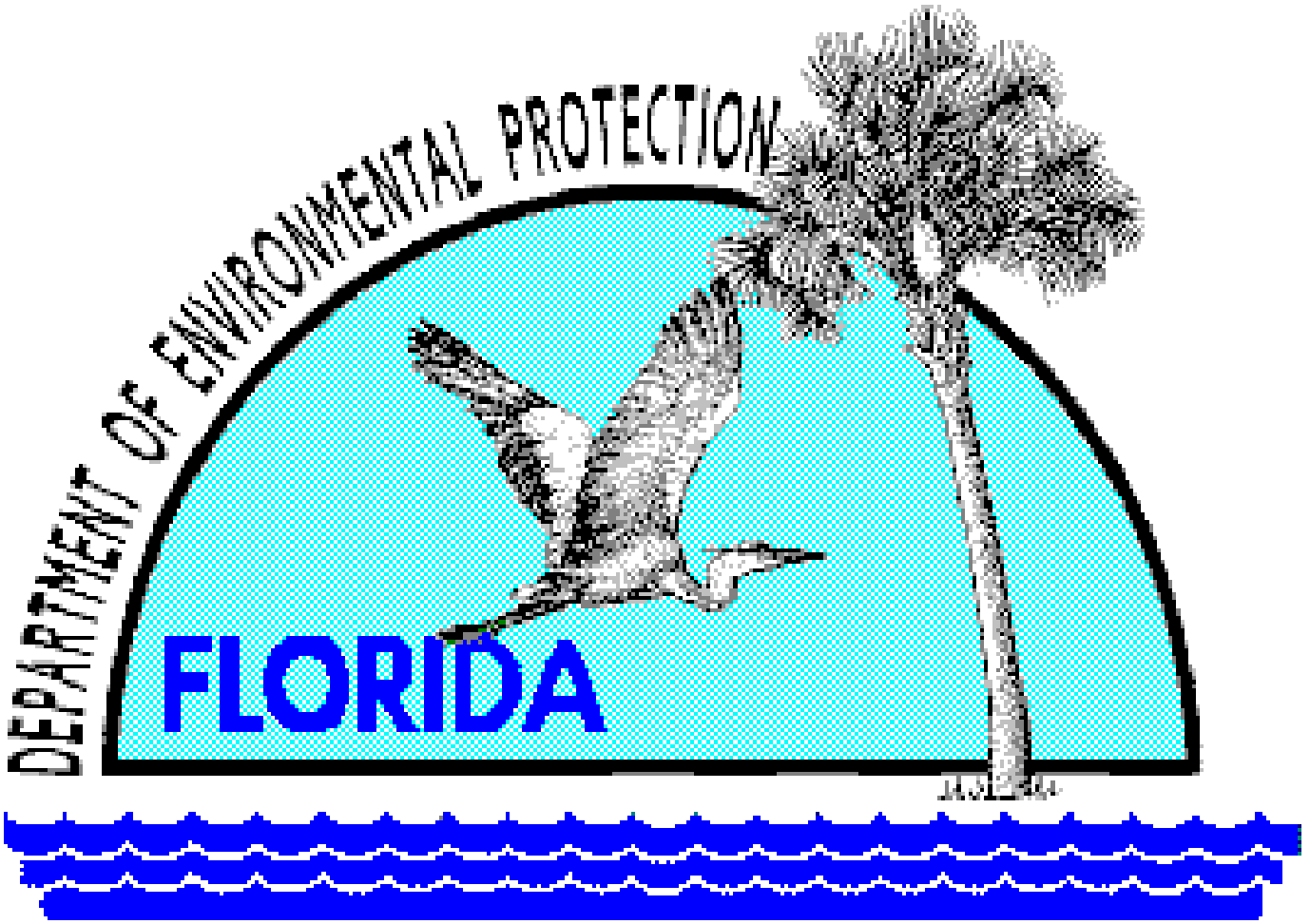

Florida Department Of Environmental Protection

SMALL BUSINESS ASSISTANCE PROGRAM (SBAP)

The Small Business Assistance Program (SBAP) is an integral part of the Office of Air Programs Communication & Outreach of the Division of Air Resources Management. The Program was established by Title V of the Clean Air Act Amendments of 1990 and it provides technical and regulatory assistance to small businesses.

Although the program is primarily air-focused, staff either provides direct assistance on multi-media questions or refers callers to other FDEP divisions. To qualify for assistance as a small business, the business must have less than 100 employees, release less than 75 tons of all regulated air pollutants and release less than 50 tons of any single regulated air pollutant per year.

Small businesses can call from anywhere in the state to get free regulatory and technical assistance relevant to air emissions, operations and compliance. The staff maintains a "hotline directory" on its website (see address below). This directory contains names and telephone numbers of key personnel who manage various state environmental programs and services.

In an effort to enhance our ability to serve the small business community, we have partnered with the Florida Small Business Development Centers (FSBDCs) and with the Florida Manufacturing Technology Centers (FMTCs). These organizations provide additional local services.

In addition, we frequently partner with various other organizations and trade associations to increase awareness of our program by specific industry sectors. This series of workshops is funded by a grant from the US Environmental Protection Agency under authority of the Small Business Regulatory Enforcement Fairness Act (SBREFA) and the direct result of one such partnership which includes:

Florida Small Business Assistance Program (SBAP)

Printers National Environmental Assistance Center (PNEAC)
Graphic Arts Technical Foundation(GAF)
Screenprinting & Graphic Imaging Association International (SGIA)
Printing Association of Florida (PAF)
Florida Small Business Development Centers (FSBDC)

SBAP Website*:* http://www.dep.state.fl.us/air/outreach/sbap/index.htm

SBAP Hotline: (800) 722-7457

Florida Department Of Environmental Protection

SMALL BUSINESS ASSISTANCE PROGRAM (SBAP)

Services Offered

- Toll-free Hotline (See below)
- Free and Confidential Consultations over the Phone
- Free Technical Guidance to Improve Efficiency
- Free and Confidential On-site Visits
- Referrals for Technical Assistance
- Industry-specific Factsheets
- Notification of Applicable Requirements/Facts
- Library of Free, Easy-to-read Literature (Federal and State)
- Referrals to Other Environmental Programs
- Informational Workshops
- Presentations to Public or Private Organizations

SBAP Website*:* http://www.dep.state.fl.us/air/outreach/sbap/index.htm

SBAP Hotline: (800) 722-7457

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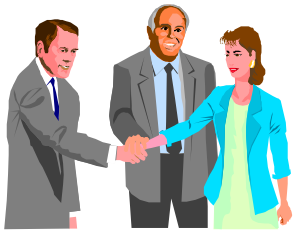
Disclaimer

FLORIDA PRINTERS PROTECTING THE ENVIRONMENT (PPE)



Florida industry and government are partnering to increase environmental compliance, improve safety and reduce generated waste in the graphic arts industry. The result is the Printers Protecting the Environment Program (PPE) to provide education and assistance in understanding rule requirements and implementing pollution prevention techniques.

The printing industry is Florida's largest employer in the manufacturing sector, with an estimated 80,000 personnel and over 3,800 companies statewide. Most of these printers are small to medium sized facilities who need help with environmental compliance. You have the opportunity to help make the printing industry an example for implementing pollution prevention into daily operations, i.e. cheaper, cleaner and smarter practices, while meeting environmental requirements. By attending one of the printers workshops and completing the workbook, you are taking the first step on the "road to compliance".

Objectives of the Workshops and Workbook:

- ✓ Outline the key regulatory agencies and requirements that affect your business practices such as air permits. wastewater discharge, hazardous waste handling and disposal, personnel training, record keeping and requirements for the use, storage and disposal of hazardous materials, including waste.

  Each federal, state and local agency has rules that define the way you should do business. To better understand the rules, you need to know 1) who the agencies are, 2) what their primary objective is, and 3) How they affect your business. *If you understand the rules, the compliance process becomes easier and can actually work to your advantage when you do business with lenders, realtors and insurer and most importantly your customers.*

- ✓ Provide workshop attendees with enough basic knowledge to reach a compliance level that will be protective of human health and the environment.

- ✓ Provide you with guidance for seeking additional information and assistance, by phone, fax internet and on-site assistance visits, to further increase understanding of regulatory programs and level of compliance. You are encouraged to call any of the agencies, many of which will make complimentary assistance visits to your facility.

YOU should participate, if you meet any of the following criteria:

a. You generate any hazardous waste.

b. You emit volatile organic compounds (VOC's) or hazardous air pollutants (HAP's)

c. You discharge industrial wastewater

c. You are unsure about any of the above

Eligibility and Participation:

All of Florida's estimated 3,800 printers are eligible to participate in PPE regardless of what equipment they use (lithographic, screen, flexographic, rotogravure, or letterpress).

The workshop and workbook will provide:

- ✓ **Training** - Explanation of regulatory requirements as they relate to the printing processes you use - so that you can:
  - a. Be in compliance with regulations and avoid penalties;
  - a. Provide a safer, healthier work place for your employees;
  - b. Join other Florida printers who are taking pride in creating an industry example
  - c. Gain new customers who know they have made a wise choice in selecting a business that cares about Florida's natural resources.
- ✓ **Assistance** - identify resources to answer written ,telephone and Internet (www.pneac.org) inquiries, as well as on-site pollution prevention and compliance assistance.
- ✓ **Recognition** - participating printers will receive PPE certificates of completion and logos attesting to do the "right thing" when it comes to protecting your employees and the environment.

The most important part of the workbook is a checklist of issues regarding environmental compliance and pollution prevention in your facility. We call it the "roadmap to compliance". Completing the checklist will 1) provide a thorough assessment of these issues, 2) show how close you are to being in compliance and 3) "point you in the right direction".

How to Use the Workbook:

SECTION 1, the checklist, is arranged into six parts ..... Checklist notes will direct you to Workbook sections or other resources where additional information is available to help you complete the checklist.

In the checklists you will find three kinds of items:

1. **Items in bold print** are significant items that are directly related to facility compliance.
2. ***Italicized items*** are suggested good management practices (GMP's) and opportunities to reduce or prevent pollution and, in many cases, to reduce your costs.
3. Items in regular print are informational material to help you complete the Workbook.

SECTION 2 discusses printing operations environmental and safety & health issues, and explains Florida's regulatory requirements related to your management of hazardous waste, industrial wastewater, and air emissions and OSHA requirements regarding worker health and safety. This section should be used as a reference to help you complete Section 1. You are encouraged to read this section in its entirety to improve your understanding of the issues.

SECTION 3 of the Workbook contains sample worksheets to assist you in quantifying and better managing your air emissions and in evaluating waste reduction options.

Make a conscientious effort to complete the Workbook within three weeks of attending the workshop as information will be fresh in your mind and facilitate completion of the Workbook. After the workshop, a PPE mentor will contact you to see if any assistance is needed and provide you a Workbook Completion Survey to be mailed to the Small Business Development Center (SDDC) when you complete the Workbook. Upon completion of this survey, the SBDC will forward back to you a PPE "Completion Certificate" and a PPE "Window Logo". The Workbook and checklist are yours to keep.

We suggest you scan the questions in Section 1 and answer the easiest ones first. There are several options under a general topic and selection of each option will guide you through the remaining questions. Usually, only one answer within a set will be appropriate for your facility. Check the box (❑) for the answer [Yes, No, or N/A for not applicable] that applies to your operation. If you are uncertain about an answer, make a note about the question in the margin and return to it after referring to Section 2 or contacting one of the resources listed in Appendix B

Assemble the following materials before starting to help you fill out the Workbook:

- ✓ Purchase and/or material usage records for the last 12 months;
- ✓ Material inventories for last twelve months;
- ✓ Material Safety Data Sheets (MSDS) for all chemicals currently being used or that will be used in the future;
- ✓ Hazardous waste shipment manifests; and
- ✓ Currently held DEP, or local environmental permits, including industrial waste water discharge and air emissions permits.

Assistance in completing the Workbook is available from the resources listed in Appendix A.

Tips for Environmental Success

Start by Paying Attention to the Products You Use?

Printers regularly use products and generate wastes that if mishandled may be of concern to the environment. Film developing, printing and cleanup operations generate used fixer, waste ink, ink cleanup wastes and shop towels, as well as air emissions and wastewater discharges.

Printing frequently involves products containing volatile organic compounds (VOCs), mostly from cleanup solvents, fountain solutions, aerosol cans and inks, which evaporate into the surrounding air. Switching to alternative products with lower VOC contents or using lower vapor pressure products (less evaporative) supports state and national goals for reducing toxic emissions. These alternative products also experience less evaporation loss, saving money on the purchase of new product.

Film processing typical to many printers also generates silver contaminated wastewater. Untreated spent fixer is considered a hazardous waste so, it is important that each business does its part to keep these wastes out of the ground and water.

Pollution Prevention (P2) *PAYS*

The less waste you generate, the less you are regulated. Save money and protect your health, your employees' health, and our environment by switching to low VOC inks, cleanup and fountain solutions. Call the Small Business Assistance Program (SBAP) at (800) SBAP-HLP.

Don't throw it in the dumpster.

- ✓ Never handle hazardous waste like regular trash. Accumulate waste in appropriate containers and properly dispose
- ✓ Look for ways to recycle scrap film, used plates, corrugated cardboard, and other solid wastes.
- ✓ Call The Southern Waste Information Exchange Clearinghouse (SWIX) at (800) 441-7949 or the SBAP at (800) SBAP-HLP.

Don't use shop towels for waste disposal.

Minimize the amount of solvent and inks on shop towels so you can ship them to a qualified laundry service instead of managing them as hazardous waste. Remove excess ink from surfaces or equipment with a scraper or spatula before wiping with a shop towel. Save as much ink as you can by putting it back into its original container.

Don't use "F-Listed" or other hazardous solvents.

These are solvents that the Environmental Protection Agency (EPA) and Florida Department of environmental Protection (DEP) consider dangerous when they're disposed. (See Appendix A.) Work with your supplier to try alternatives. Also, ask for alternatives to high vapor pressure solvents, solvents with low vapor pressure (<10mm Hg at 68°F) and those with flash points above 140 degrees.

Fix your fixer.

Untreated spent fixer is very likely to be a hazardous waste and exceed local sewer discharge limits for silver. You may be able to do on-site reclamation, or use an off-site collection service. If you decide to reclaim on-site, use an appropriate silver recovery system and maintain the units properly. *Test the discharge water regularly for compliance with sewer discharge limits*.

Be aware of fire hazards.

Don't store solvents or used shop towels near dryers or other heat or ignition sources. Keep used towels in closed containers. Enforce a “No Smoking” policy near storage areas. Always ground large containers of flammables and use a bonding wire when to control static buildup/sparks when dispensing or adding material.

Label waste containers and put them in one spot.

Choose one area to store wastes and label each container. For example, "Waste Ink Only", "Press Wash Only", "Used Shop Towels Only", "Used Fixer Only", and "Scrap Film Only". All hazardous waste must be labeled "Hazardous Waste." Be sure to separate your waste storage area from your product storage area and post a sign designating "Hazardous Waste Storage Area"..

Learn how to read Material Safety Data Sheets (MSDS).

MSDS's should come with all products, providing key environmental, health and work place safety information. See the MSDS section of the Workbook (Section 2.1) for help. Remember you must keep current copies of MSDS's for all chemicals in your shop.

Keep records.

Keep purchase records for products and bill of lading, manifests and land disposal restriction forms every time you buy materials or dispose of waste. Good records, kept in order, by year, will help you keep better track of material use and waste management. Good records can expedite a property sale or loan.

Ask for help.

Environmental regulations were created to protect you and your workers, and they're here to stay! Don't be afraid to use the **PPE** resources (see Appendix B). They are available to help you understand the regulations and look for pollution prevention opportunities. *Show your customers and employees that you are taking the extra step to make your work place and the environment better*.

SECTION ONE
THE ROADMAP TO COMPLIANCE

HOW TO USE THE ROADMAP

Throughout the Roadmap (Checklist) there are instructions and cross references to help and guide you based on the answers you select. The check list is yours to keep and the number of correct or incorrect answers is only for your information. The Printers Partnering for the Environment (PPE) wants the checklist to 1) guide you through the issues, 2) help evaluate your knowledge and 3) provide knowledge for situations where you may have been unsure.

- ✓ When your answer is correct, give yourself a pat on the back and work to make all of your answers right. You may want to complete the checklist yourself or divide the parts among employees. Give yourself a deadline to be finished and stick to it,
- ✓ When your answer is incorrect, PPE suggests you circle the wrong answer and immediately study the Section 2 reference to learn what you should be doing and correct (or make specific plans to correct) any bad practices as you proceed.
- ✓ When your answer is "Unsure", PPE suggests you circle the answer and immediately study any notes or references to learn what you should be doing and correct (or make specific plans to correct) any bad practices as you proceed. Set deadlines to correct practices.
- ✓ Where applicable , questions or pollution prevention opportunities are referenced to a particular type of printing; e.g. lithographic, flexographic, gravure, and screen printing operations.
- ✓ After referring to Section 2 and/or contacting one of the resources listed in Appendix A, you should be able to answer all questions correctly and feel reasonably comfortable you are in compliance with environmental regulations.

The following conventions have been used to distinguish between items:

1. **Items in bold are significant items that are directly related to facility compliance.**
2. *Italicized items are pollution prevention opportunities or recommendations that reflect Good Management Practices (GMP's) that PPE encourages you to consider.*
3. Items, in regular print, are provided as information only and do not require action.
4. A glossary of acronyms used in the Workbook is included in Appendix I.

As you begin the checklist, remember the PPE resources (see Appendix A) are available to help you understand the regulations and look for pollution prevention opportunities. The checklist is divided into six sections which include:

1. Facility wide issues, related to compliance.
2. Prepress activities, related to compliance.
3. Printing (Pressroom) operations, related to compliance.
4. Post press operations, related to compliance.
5. Emergency Planning and Community right to know.
6. Health and Safety issues.

FACILITY WIDE ISSUES

WASTEWATER

Waste is a by-product of the manufacturing process and proper disposal is important as it protects human health and the environment and ensures compliance with environmental regulations. Wastewater is normally generated by all printing processes and areas:

- ✓ **Pre-press:** silver bearing waste from platemaking, some proofing systems, waste water from equipment cleaning, floor cleaning , other cleaning solvents, etc.
- ✓ **Press areas:** waste fountain or cleanup solution, or some water-based ink and coatings, waste water from press cleaning.
- ✓ **Post-press:** screen reclamation, waste water from equipment cleaning, floor cleaning , other cleaning solvents, etc.

Depending on contaminants in this wastewater, it may be classified as either hazardous waste or industrial waste. A full explanation of hazardous waste and how to determine if your wastewater is hazardous is included in Section 2.3.2 and Worksheets are provided in Section Three to guide you through the process. Any wastewaters not meeting the definition of a hazardous waste will be industrial wastewater.

NOTES:

1. Neither industrial wastewater nor hazardous waste may be discharged to a septic system installed to collect and treat domestic waste.
2. Industrial discharge permits will be required for discharge of industrial waste water to soil or surface water. Information may be obtained from the local DEP industrial waste program.
3. Hazardous wastewater may not normally be discharged to a local sewer system; however, in some instances, with written permission from the local operating utilities, certain hazardous waste may be discharged to the sewer. Industrial wastewater may be discharged to the sewer system provided it meets pretreatment standards established by the operating utility.

Disposal In Sinks

1. Has your facility placed signs at sinks prohibiting disposal of hazardous waste, process chemicals, and solid waste? (See Appendices A and C for a list of prohibited chemicals)

Yes (Good idea!) No (See note)

NOTE: To help prevent problems, place signs near all sinks and drains in the work area prohibiting disposal of press cleaning solvents, inks, chromium-based systems cleaners, and untreated silver-bearing wastes. Example signs are included in Appendix H.

2. Is equipment pre-cleaned prior to being washed in water supplied sinks?

Yes (Skip to) No (See note) Not Sure (See note)

NOTE: Equipment may contain residual inks or solvents that should not be discharged to sewer or septic system).

Floor Drains

3. Does your facility have floor drains?

Yes No (skip to Question 7)

4. Floor drains discharge to:

sewer septic ground retention pond unsure

NOTE: It is essential that you know where your floor drains discharge, as different discharge points may have significant restrictions on materials that enter drains.

5. Are spill control materials (absorbent material) readily available to prevent spills and releases from going to floor drains:

Yes No (Ensure absorbents are available and personnel are trained in their use.

6. Does your waste water from floor cleaning contain amounts of waste from press cleaning, other cleaning solvents, waste ink or oil from leaks?

Yes No

✓ If yes, you need to improve housekeeping technique to prevent this accidental discharge because it could make your floor cleaning waste water hazardous and cause contamination.

Silver Bearing Wastewater - See Prepress Issues

Facilities on Septic Systems

7. Is your facility connected to a septic tank?

Yes No(skip to 9)

8. Does your facility discharge ***any*** industrial waste or process chemicals to the septic system?

Yes ***(STOP! see Note 1)*** No (continue) Unsure (see Note 2)

Note 1: No industrial or hazardous wastewater can be discharged to a septic system. You need to determine whether your wastewater is regulated as hazardous or industrial waste and arrange to collect and send it to a facility can accept and treat it. See Section 2.3.2 (Making a Hazardous Waste Determination).

Note 2: Before proceeding further, stop and determine whether your facility is on septic or sewer.

Facilities On Sewer

9. Does your facility discharge waste press wash, cleaning solvents or untreated waste ink or other industrial or hazardous waste water to the sewer?

Yes (see Note 1) No (continue)

NOTE: Industrial or hazardous wastewater discharged to a sewer system may need to be treated to meet local discharge standards. Contact your sewer authority for additional information. If you need to make a Hazardous Waste Determination, see Section 2.3.2

10. If you discharge waste water from press cleaning, floor cleaning, other cleaning solvents or waste ink to a sewer system, is the waste treated or filtered prior to discharge so that the waste meets your local utility's discharge limits?

Yes (continue) No (see Sect. 2.4) Unsure (see Sect. 2.4)

11. We know our local utility's pretreatment limits for metals, constituents and properties, such as BOD, COD, pH, ammonia, or metals and have tested our wastewater to ensure compliance.

Yes (continue) No (see Sect. 2.4) Unsure (see Sect. 2.4)

12. Does your facility treat all silver-bearing, combustible, flammable, or other characteristic wastes to meet utility's discharge limits?

Yes (continue) No (see Sect. 2.4) Unsure (see Sect. 2.4)

13. Does your local utility require you to have an industrial user permit?

Yes (continue) No (continue) Unsure (see Sect. 2.4)

Screen Printers:

14. Is the rinse water from screen reclamation activities discharged into the sewer?

Yes (See Sect. 2.4) No (skip to Solid Waste Management)

15. If yes, has your facility tested the screen reclamation rinse water for BOD, flash point (must be greater than 140) and pH (must be between 6 & 9).

Yes No (see Sect. 2.4)

16. Does your facility filter the rinse water from screen reclamation process prior to discharge into the sewer?

Yes No (see Sect. 2.4)

17. Has wastewater from screen printing reclamation activities been tested as required and records of such testing kept to ensure that the local utility's discharge limits are not exceeded?

Yes (Good idea!) No (see Sect. 2.4)

STORMWATER

If your facility discharges wastewater (other than uncontaminated stormwater) to any body of surface water, creek, stream, river, lake, pond, inlet, etc., you are required to have a state wastewater discharge permit. Refer to Section 2.4.6 and contact the Small Business Assistance Program at (800) SBAP-HLP.

1. Process chemicals are stored such that they do not contaminate rain water.

Yes No N/A

SOLID WASTE MANAGEMENT

Opportunities for cost savings in managing your solid waste:

Waste aluminum printing plates are recycled

As part of an effort to minimize waste packaging materials, we try to purchase products in as large a container as possible without purchasing in quantities that may promote waste due to spoilage

Waste paper is recycled

Waste corrugated cardboard is recycled

Materials vendors have been contacted regarding taking back empty containers/packaging when possible

Used or broken shipping pallets are recycled.

The **S**outhern **W**aste **I**nformation E**x**change Clearinghouse (SWIX) is a not-for-profit service organization that helps businesses find ways to recycle their solid waste.
Call (800) 441-7949 for more information.

Hazardous Waste Requirements

1. **Has your facility performed a hazardous waste determination on all chemical and industrial wastes (e.g. solids, liquids, gases or mixtures) which are generated and identified those which are hazardous wastes?**

Yes (continue) No (See Note 1 below) Unsure (See Note 1 below)

2. **We have calculated the quantity of hazardous waste generated monthly at our facility and determined our hazardous waste generator status to be:**

Non-generator. We generate no Hazardous Waste

Conditionally Exempt Small Quantity Generator (CESQG)

Small Quantity Generator (SQG)

Large Quantity Generator (LQG)

Unknown. **(See Note 1)**

NOTE: Detailed information on hazardous waste determinations and the proper management of hazardous waste can be found in Section 2.3. Information needed to answer questions 1 and 2 can be developed using Worksheets in Section 3.

3. **Are appropriate (as determined by your hazardous waste generator status) records kept of training and hazardous waste inspections?**

Yes (continue) No (see Sect. 2.3.10) Unsure (see Sect.2.3.10)

✓ Appendix H contains sample training and inspection logs and storage placards for your use.

4. **Are copies of hazardous waste shipping manifests kept for at least 3 years and copies of land ban forms are kept for at least 5 years?**

Yes No (see Sect. 2.3.9) Unsure (see Sect.2.3.9)

5. **Do workers keep hazardous waste containers closed, except when adding or removing waste?**

Yes No (see Sect. 2.3.8)

Towels, Wipes and Other Absorbents:

1. Are shop towels, wipes, etc. managed so that they are not "saturated" when set off-site?

Yes No (See Sect. 2.3.3)

2. **Does your facility pour waste cleaning solutions, including press wash or ink removal products, into container(s) of used shop towels, either disposable or recyclable?**

Yes (**STOP!** See following note) No

✓ This practice could be could be illegal disposal of hazardous waste and puts you and any laundry accepting these towels in violation of hazardous waste regulations.

3. Does your facility use a laundry service that collects, launders and returns towels to you?

Yes No (See following note)

✓ Use of a commercial laundry service to provide reusable shop towels means you do not have to manage them in accordance with hazardous waste requirements and they are not counted in determining your HW generator status. (See Sect. 2.3.3)

4. Has your facility evaluated the industrial laundry you use to determine their compliance status with air pollution controls, wastewater treatment and discharge requirements?

Yes No (See following note)

✓ You have permanent (cradle to grave) responsibility for all wastes generated at your facility. If a transporter, treatment or other vendor mishandles the waste, it is still your responsibility.

5. **Does your facility use disposable shop towels or other disposal cleaning pads?**

Yes (See Sect. 2.3.3) No

6. **Are solvent / ink contaminated shop towels and other solvent-contaminated cleaning materials collected in containers marked as "Recyclable Towels" or other appropriate wording?**

Yes No (See Sect. 2.3.3)

7. **Are solvent / ink contaminated shop towels and other solvent-contaminated cleaning materials determined to be hazardous waste collected in containers and managed as hazardous waste?**

Yes No (See Sect. 2..3.3)

8. **Are containers used for collecting solvent / ink contaminated shop towels and other solvent-contaminated cleaning materials kept closed, except when adding or removing materials?**

Yes (Required) No (See Sect. 2.3.3)

Spill Cleanup Absorbents

9. **Are absorbents and spill cleanup materials, such as "oil dry", absorbent "socks," and "pigs" managed as hazardous wastes, if they are contaminated with hazardous materials?**

Yes No (See Sect. 2.3.8)

10. **Are oil-contaminated absorbents, such as "speedy-dri," absorbent "socks," and "pads," managed in accordance with DEP's used oil regulations.**

Yes No (See Sect. 2.3.4)

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT (EPCRA)

1. **Do you know the federal, state and local requirements for reporting spills or accidental releases?**

Yes No (see Sect. 2.6) Unsure (see Sect. 2.6)

2. **Do you store greater than 10,000 lb. of any material for which an MSDS is required?**

Yes No

3. **If you answered "Yes" to question 2, has your facility filed the required initial notification annual report with the local fire department?**

Yes No (see Sect. 2.6.9) Unsure (see Sect. 2..6.9)

3. **Do you store greater than the Threshold Planning Quantity (TPC), usually 500 lb., of any Extremely Hazardous Substance at our facility**

Yes No (see Sect. 2.6.9) Unsure (see Sect. 2.6.9)

4. **If you answered "Yes to question 3, have you filed the required initial notification and annual report with the local fire department?**

Yes (continue) No (see Sect. 2.6.9) Unsure (see Sect. 2.6.9)

NOTES:

1. None of the common printing solvents qualify as extremely hazardous substances.
2. If you answered "No" or " Unsure" to any of these questions, or if you have materials in large quantities (a 55 gallon drum or more) which you feel may qualify as extremely hazardous substances (review MSDS sheets for an initial assessment) contact the Small Business Assistance Program at (800) SBAP-HLP.

HEALTH AND SAFETY (See Section 2.7)

1. Does your facility display the Occupational Safety and Health Administration (OSHA) Job Health and Safety poster in a prominent area?

   Yes No (OSHA requirement)

2. Does your facility maintain a log (OSHA No. 200) and summary of all recordable occupational injuries and illnesses, and record those injuries and illnesses no later than 6 working days after occurrence?

   Yes No (OSHA requirement)

3. If your facility has 10 or more employees at any time in a calendar year, do you know you must:

   1) Complete an OSHA form 101 (Supplemental Record) for each occupational injury and illness within 6 working days after the occurrence, and
   2) Maintain both forms 200 and 101 for a minimum of 5 years and
   3) Post an annual summary of the OSHA 200 log and
   4) Provide access to employees who wish to review the logs.

   Yes No

4. Are all fatalities or hospitalization of 3 or more employees reported to OSHA immediately or within 8 hours of the occurrence?

Yes No

5. If a hospital, clinic, or infirmary is not in near proximity of your facility, do you have a person or persons trained to render first aid?

Yes No

6. Does your have properly functioning eyewashes or emergency showers located in areas where there is a potential for injury to the eye?

Yes No

7. Has your facility identified and obtained Material Safety Data Sheets for all the hazardous chemicals used in your workplace and made them available to employees?

Yes No (see Sect. 2.7.1)

8. Are employees trained with respect to hazardous chemicals dangers and proper protection in the workplace.

Yes No (see Sect. 2.7.1)

9. Are all chemical purchase and usage records are maintained for at least 3 years?

Yes (Good idea!) No

NOTE: You should keep these records to help document your hazardous waste generator status.

10. Have you conducted a noise level evaluation at your facility to determine if workers are exposed to 90 decibels or greater over an hour period?

Yes No

NOTE: If the employee noise exposure is greater than 90 db over an 8 hour period, your facility must supply employees with appropriate hearing protection?

Fire Protection and Prevention

11. Does your facility employ 10 or more people?

Yes No

✓ If yes, then your facility is required to develop a fire prevention and evacuation plan (emergency preparedness plan).

12. If your facility has an emergency preparedness plan, does it contain the following required elements?

Yes	No	N/A	List all major fire hazards
Yes	No	N/A	Procedures for the handling and storage of flammable and combustible material
Yes	No	N/A	List ignition sources and control methods
Yes	No	N/A	Identify fire protection equipment necessary to control each hazard

Yes	No	N/A	Procedures to control accumulation of flammable and combustible materials
Yes	No	N/A	Maintenance procedures for safeguards installed on heat producing equipment designed to prevent accidental ignition

13. Have fire hazards been identified and the appropriate type of extinguishers been provided according to specific hazard/area (A, B, or C type)?

Yes No

14. Are fire extinguishers tagged with current testing & inspection certification, sealed, fully charged?

Yes No

15. Are fire extinguishers inspected monthly to determine if they have been discharged, damaged, etc.?

Yes No

16. Are employees trained in proper use of fire extinguishers?

Yes No

17. Is the training documented?

Yes No

18. Are portable fire extinguishers mounted no farther than 75 feet from class A fire hazards and 50 feet from class B fire hazards and 5 feet or less from the floor?

Yes No

PREPRESS OPERATIONS

1. Do you have any prepress or other plate making operations at your facility?

Yes (continue) No (skip to *Pollution Prevention Opportunities*)

2. Does your facility discharge any industrial waste or process chemicals to the septic system?

Yes ***(STOP! see Note 1)*** No (continue) Unsure (see Note 2)

Note 1: No industrial or hazardous wastewater can be discharged to a septic system. You need to determine whether your wastewater is regulated as hazardous or industrial waste and arrange to collect and send it to a facility can accept and treat it. See Section 2.3.2 (Making a Hazardous Waste Determination)

Note 2: Before proceeding further, stop and determine whether your facility is on septic or sewer.

3. If your facility uses any of the following plate making processes, are the wastes considered a hazardous waste? Check all that apply.

Acid Base:	Not used	Yes	Unsure (see Sect. 2.3.2)
Solvent Base:	Not used	Yes	Unsure (see Sect. 2.3.2)
Water Base:	Not used	Yes	Unsure (see Sect. 2.3.2)

✓ If you answered "Not used" to all, skip to Question 7.

✓ If you answered "Unsure" to any process used, you must make a waste determination as explained in Section 2.3.2, using Worksheets in Section 3 and manage the waste appropriately.

4. **Do you accumulate all waste from plate making in containers with labels containing the words "hazardous waste" and the date accumulation started?**

Yes No

✓ For hazardous waste storage requirements see Section 2.3.8.

5. Are your hazardous plate making wastes transported off site by a certified waste hauler?

Yes No (see Sect. 2.3.9)

6. If discharging plate making waste to the sewer, does your facility have an approved and/or permitted pretreatment system? (This would include silver recovery equipment, acid neutralization systems, solvent recovery systems, etc.)

Yes No (see Sect. 2.4)

Silver Bearing Waste (Silver Recovery Systems)

7. Do you use pre-press materials which generate silver-bearing wastes (even trace amounts)?

Yes No (skip to *Pollution Prevention opportunities*

8. Do you have a silver recovery unit (SRU) to recover silver-bearing wastes prior to discharge to the sewer system?

Yes No (see Sect. 2.4.2)

9. Are you required by your local utility to test your wastewater?

Yes No (skip to Question 12)

10. If you answered “Yes” to question 9, do you keep records of such testing to ensure that you do not exceed local utility silver discharge limits?

Yes No (see Sect. 2.4.3)

✓ PPE recommends you 1) test the effluent from your silvery recovery unit at least semiannually by low cost methods (e.g., silver test strips), 2) date cartridges when changed, and 3) keep records of all testing and maintenance.

11. **Have you trained your employees in proper operation and maintenance of silver recovery equipment and in spill response procedures?**

Yes No (see Sect. 2.4.2 & 2.6.1)

12. Do you properly manage chemical recovery cartridges (steel wool cartridge) by backflushing at least 3 times into another cartridge prior to removal from the silver recovery unit?

Yes No (see Sect. 2.4.2)

13. **Do you accumulate all silver-bearing wastes (i.e., fixer solution) in containers with label containing the words "hazardous waste" and the date accumulation started?**

Yes No (see Sect. 2.4.2 & 2.3.8)

✓ Fixer solution with silver probably will be a hazardous waste because it will contain more than 5 ppm of silver and must be accumulated and stored in accordance with hazardous waste requirements.

✓ For hazardous waste storage requirements see Section 2.3.8.

14. **Do you use a DEP approved hazardous waste transporter to remove all silver-bearing wastes (i.e., fixer solution) and retain the manifest paperwork related to such waste removal for a minimum 3-year period?**

Yes (continue) No (see Sect. 2.3.9 & Appendix D)

✓ Recovered silver being transported to a silver recycler is not considered a hazardous waste, but a fixer solution with silver probably will be a hazardous waste because it will contain more than 5 ppm of silver and must be accumulated and stored in accordance with hazardous waste requirements.

POLLUTION PREVENTION OPPORTUNITIES IN PREPRESS OPERATIONS

The following P2 techniques are arranged in increasing order of cost (dollars and time). Check those techniques that you are currently using. Evaluate and consider adopting techniques that you are not currently using, but could reduce waste generation. If you need more information about a particular P2 technique or assistance in determining the cost and benefits, contact one of the pollution prevention assistance providers listed in Appendix A and the Workshop handout.

Store temperature and light sensitive chemicals according to manufacturer's directions.

Avoid overstock of time-sensitive materials.

Recycle photographic film.

Look for nonhazardous intensifiers and reducers that do not contain mercury and cyanide salts.

Use formaldehyde-free photochemicals.

Use floating lids on the photochemical hand trays to reduce air exposure and maximize solution life.

Use countercurrent washing techniques. Use used rinsewater in the initial film wash and fresh water in the last rinse bath. When the last rinse bath needs changing, use it for the initial bath.

FILM, PLATE and SCREEN DEVELOPMENT AND PROCESSING

Change processor baths when no longer effective rather than on a fixed schedule. Test with a gray scale

Extend bath life by adding replenisher to allow more silver buildup before treatment with a silver recovery unit.

Conduct semiannually "self tests" of silver recovery units (SRUs) to ensure they are operating within specifications.

Limit use of aerosol products. Use only nonhazardous aerosol, pumps or refillable bottles.

Set processors according to manufacturer specifications to minimize fresh water use, or install electronic valves for better water management and solution recirculation.

Use water-based plate developers.

Calibrate and adjust photoprocessor for proper chemical consumption. Periodically check and replace rubber rollers.

Install recirculation units for fixer, developer and rinsewater. In-line silver recovery with fixer recirculation system can prolong fixer usage.

Install metallic replacement cartridges after electrochemical SRUs to collect more silver. Two-stage SRUs can remove up to 99% of the total silver if properly maintained. Use ion exchange columns as a third stage (or for rinsewater), if your wastewater discharge silver-free.

Use water-based paten and screen adhesives to reduce VOC emissions.

Use laser imaging, waterbased direct-to-plate or digital prepress systems to eliminate or reduce the use of film and plate processing.

Are damaged materials or supplies with a close expiration date returned to the supplier?

Have you asked vendors for information about nonhazardous alternative materials?

Digital Technologies

Newer technologies can help you avoid many of the environmental concerns with traditional photoprocessing. Over time the cost of silver recovery, shipping spent fixer, laboratory testing, and maintenance may outweigh the cost of the new equipment.

PRESSROOM OPERATIONS

1. **Are containers of hazardous waste are kept closed, except when adding or removing waste?**

Yes No (See Section 2.3.8)

✓ To learn more about determining if your waste is hazardous, about requirements for handling it; or if you are unsure of your generator status, see Section 2.3

2. **Do your remove sufficient ink, that is classified as hazardous, from cans to render them "empty" according to regulation prior to disposing or recycling them?**

Yes No (see Sect. 2.3.8)

✓ PPE recommends that facilities cut the bottoms out of empty containers and crush them to assure they are empty when disposed.

Ink

3. Indicate what waste classification applies to your waste inks.

Non-Hazardous Industrial Waste (see NOTE)

Hazardous Waste

Acutely Hazardous Waste

NOTE: If you have determined that your waste inks are considered non-hazardous industrial waste a they still must be properly managed and disposed by shipping them either on a bill of lading or on a hazardous waste manifest as a nonhazardous waste. While they can normally be discarded as trash, PPE does not recommended this practice due to the long term liability associated with potential cleanup costs of these types of waste streams.

4. **Does your facility mix any other waste stream with waste inks, i.e., fountain solution, cleaning solvent, or waste oil?**

Yes (See Section 2.3.2) No (Good for you!!)

5. **Is waste fountain and/or cleanup solution, if determined hazardous properly managed as a hazardous waste.**

Yes No (see Sect. 2.3.2)

6. **Is used oil stored in an appropriate container and labeled "Used Oil"?**

Yes No (See Section 2.3.4)

7. **Is your facility aware of proper procedures for managing oily towels, wipes, absorbents, etc.?**

Yes No (See Section 2.3.4)

8. **Is your used oil transported off site by a licensed transporter and we keep "Used Oil" disposal and records for at least three years.**

Yes No (see Section 2.3.4 & list of Transporters in Appendix D)

Equipment Cleaning & Cleanup Waste Disposal

See Facility - Wide Discussion concerning Shop Towels and Wastewater

Spill/Leak Cleanup Materials

See Facility - Wide Discussion concerning Spill/Leak Cleanup Materials.

POLLUTION PREVENTION OPPORTUNITIES IN THE PRESSROOM

The following P2 techniques are generally arranged in increasing order of cost (dollars and time). Check those techniques that you are currently using. Evaluate and consider adopting techniques that you are not currently using, but could reduce waste generation. If you need more information about a particular P2 technique or assistance in determining the cost and benefits, contact one of the pollution prevention assistance providers listed in Appendix A and the Workshop handout.

INKS

Order only the amount of ink you need to do the job.

Managing inventories on a first-in, first-out basis

Schedule jobs so as to minimize the need to change ink in fountains are utilized.

Use low-VOC containing inks, such as vegetable oil based ones, where feasible

Use water-based inks with less than 10% VOC content, where feasible.

Use spray preservatives to prevent ink from drying in fountains overnight.

Avoid letting ink "skin over" in cans and replace covers when ink is not in use. Investigate new non skinning inks and cartridge delivery systems.

Scrape as much ink out of containers as possible. Scrape leftover ink from fountains for reuse or blending into black ink.

Use software programs designed to promote the reuse of inks through custom mixing and reblending.

Install automatic ink levelers at fountains

Use ink thinners with less toxic ingredients.

Enclose or cover ink fountains, where appropriate

Use enclosed or angled doctor blades on rollers.

Reduce ink evaporation by using diaphragm pumps that heat inks less than mechanical vane pumps.

Evaluate ink recycling systems or vendors who provide this service.

Use an evaporator to reduce the volume of nonhazardous waste ink or other water-based materials. A cost (including energy considerations) analysis should first be conducted to determine if an evaporator is more economical than other offsite disposal alternatives. This may require a permit.

Investigate UV-cured inks, electron-beam (ECB) inks or water-based inks

Test incoming water used in the production process been tested for pH, temperature, and turbidity (hardness), as these parameters can significantly impact the effectiveness of alcohol substitutes and various types of cleaning products, the performance of water based inks and overprint coatings; and can impact wear on equipment. Your vendors may be willing to assist you with testing and advise you on any adjustments that may be needed.

SOLVENT REDUCTION

Use pumps on solvent containers with a proper fit to minimize spills and evaporation

Use spray or plunger cans for cleaning solvents.

Inspect wash-up blade to ensure it is in good condition and has the proper angle against rollers.

Develop ways to reuse used solvent for gross cleaning.

Investigate use of low VOC solvents.

Use transfer pumps for press cleaning solvent drums to minimize spillage.

Use petroleum-based cleaning solvents that can be diluted with water before application. Conduct trials to find the best mix.

Use spot application of solvents for stubborn ink residues rather than general over application of solvent.

Investigate using nonhazardous solvents (e.g. flashpoints above 140°F and no chlorinated organics above 10% of the formulation) that can make used disposable towels a nonhazardous waste.

Improve inventory control by preventing uncontrolled access and distribution of solvents.

Evaluate high pressure water/detergent rinsing systems to replace traditional solvent screen cleaning systems as a means to reduce the amount of solvent used in the workplace. (Screen Printers)

Reuse lightly soiled shop towels for noncritical cleaning.

Gravity drain or mechanically wring saturated shop towels to remove excess solvent; recover as much solvent as possible for recycling.

Avoid delays in removing ink from the screen once the print run is completed (Screen Printers)

Use solvent sinks for parts cleaning to reduce once-used solvent cleaning of press parts

Install an explosion-proof centrifuge or dry cleaning units for wringing shop towels dry. (Note: Most cost effective for large users of shop towels.)

USED OIL

Do not mix other wastes with used oil; particularly hazardous solvents.

CASE STUDY OF SCREEN PRINTER WITH UV CURING PROCESS

A screen printer doing about one million dollars of business installed a UV curing process in October 1996, which eliminates 40 percent of their solvents and solvent-based inks. Currently, they are using the UV process in 80 percent of their work and are working to 100 percent. All limits on chemicals and metals in their wastewater have been met, except for total petroleum hydrocarbons, which was at 150 ppm to 170 ppm prior to installation and is now at 14 to 17 ppm.

Although they are reinvesting in new materials to make the operation more amenable to this process, they are noticing an increase in profits due to advertising about the use of UV inks, new markets that like their high gloss finish, and savings in production and labor. Since the UV unit was installed, business has increased by 20 percent and is growing.

In the past, runs using solvent inks had to be cleaned every 100 sheets to 150 sheets to ensure ink would not dry on the screens. This affected the consistency of the batches for color shades and clarity. Now they do not have to interrupt production for cleaning and frequent inspection of the work to ensure consistency.

POLLUTION PREVENTION OPPORTUNITIES FOR FOUNTAIN SOLUTION

The following P2 techniques are arranged in increasing order of cost (dollars and time). Check those techniques that you are currently using. Evaluate and consider adopting techniques that you are not

currently using, but could reduce waste generation. If you need more information about a particular P2 technique or assistance in determining the cost and benefits, contact one of the pollution prevention assistance providers listed in Appendix A and the Workshop handout

.

Use alcohol-substitutes in the fountain solution.

Determine if a new dampening system can cost effectively be retrofitted into existing presses to reduce the need for IPA/substitutes

Determine the economic feasibility of installing fountain solution chilling equipment to reduce evaporation of VOC-containing materials.

Determine the economic feasibility of installing a centralized fountain solution dispensing unit that will minimize VOC emissions and material use

Determine if the installation of automatic blanket washers is technically and economically feasible.

Determine if Isopropyl (IPA) substitutes can be effectively used.

AIR PERMITTING

NOTE: Prior to answering the following questions, you should read Section 2.5 and familiarize yourself with the worksheets in Section 3. Counties or municipalities may impose stricter air emissions limits than DEP. Check with your local county or city air authority to learn if stricter limitations apply. Assistance with this section may be obtained from the Small Business Assistance Program (SBAP) at (800) SBAP-HLP

1. **Using Section 3 worksheets, our annual potential emissions are estimated as follows:**

Largest single HAP	_____ tons per year (tpy)
Total HAP's	_____ (tpy)
VOCs	_____(tpy)
NO_Xs	_____ (tpy)
SO_2	_____ (tpy)
Particulate Matter (PM)	_____ (tpy)

2. **We have determined our facility emissions are below all of the Title V air permit thresholds.**

Yes No (call SBAP) Unsure (call SBAP)

Largest single HAP	10 tpy
Total HAP's	25 tpy
VOCs	100 tpy
NO_Xs	100 tpy

SO_2	100 tpy
PM	100 tpy

3. Our facility is located in an area designated as Air Quality Maintenance Area (See Section 2.5.1)

Yes (go to question 4.) No (go to question 5.) Unsure (call SBAP)

4. **We have determined our facility emissions are below all of the following air operating or construction permit thresholds.**

Yes No (call SBAP) Unsure (call SBAP)

Largest single HAP	1.0 tpy
Total HAP's	2.5 tpy
VOCs or PM	10.0 tpy
VOCs	15.0 pounds in any day or 3.0 pounds in any one hour

NOTE: If you exceed the above VOC thresholds, your facility may be subjected to Reasonably Available Control Technology (RACT) requirements. Contact SBAP for more information.

5. **We have determined our facility emissions are below all of the following air operating or construction permit thresholds.**

Yes No (call SBAP) Unsure (call SBAP)

Largest single HAP	1.0 tpy
Total HAP's	2.5 tpy
VOCs or PM	10.0 tpy

NOTE: Additionally, certain printing operations or processes such as publication, product, and packaging Rotogravure or a flexographic wide web printer may require permits. Contact SBAP, if your printing operations fall in one of these categories.

6. **Monthly records are kept (and maintained for at least one year) of all chemicals and materials purchased and used that generate air pollutants.**

Yes No (call SBAP)

7. We are aware that prior to installing any new or modifying equipment that produces air emissions (such as a press or boiler) we must recalculate our potential to emit (PTE). If PTE thresholds are exceeded we must apply for a construction permit and perhaps an operating permit (if an operating permit was not previously held)

Yes No (See Sections 2.5.4 to 2.5.6)

Alcohol Substitute Case Study

A carton manufacturer, who was using large quantities of isopropyl alcohol (IPA) in the fountain solution for offset printing presses, was hand-measuring and mixing fountain solution. Bulk deliveries of IPA came every 2 to 3 weeks. The company's four sheet fed offset presses generated up to six 55-gallon drums of waste monthly. The company was required to do annual toxic use reporting. To reduce VOC emissions and respond to concerns for the health and safety of its employees, the company invested in a new fountain solution delivery system, which has resulted in the elimination of IPA and cost savings that will yield full pay back (in material costs alone) in less than 2 1/2 years.

The new system, which cost approximately $100,000, uses a reverse osmosis process to filter incoming water and automatically adjust pH and conductivity, making it possible to use IPA substitutes that are less tolerant to variations in water quality and parameters than IPA.

The results were an 88 percent reduction in VOC emissions from the operation. In addition, recirculation has reduced VOC emissions, and the IPA substitute is less flammable. The company has achieved continued savings from increased press efficiency, reduced wastes, and reduced lower permit costs without sacrificing product quality.

POST PRESS

The following P2 techniques are generally arranged in increasing order of cost (dollars and time). Check those techniques that you are currently using. Evaluate and consider adopting techniques that you are not currently using, but could reduce waste generation. If you need more information about a particular P2 technique or assistance in determining the cost and benefits, contact one of the pollution prevention assistance providers listed in Appendix A and the Workshop handout.

BINDERY PRACTICES

Avoid bindery adhesives containing chlorinated solvents are avoided.

Use bindery adhesives containing no more than 10% of a single chlorinated solvent..

Use water-based adhesives in lieu of solvent based ones..

COATING APPLICATIONS

Use aqueous coating to reduce VOC emissions for coating operations, (Note: Coatings include varnishes, lacquers, and a variety of aqueous (water)-based coatings. Some coatings are applied on press and some are applied in separate off-press coasting. These coatings, especially solvent-based, can be the source of substantial air emissions. Aqueous coatings can provide good performance.

2.0 ENVIRONMENTAL AND HEALTH & SAFETY ISSUES

SECTION TWO
ENVIRONMENTAL AND HEALTH & SAFETY ISSUES

Printing operations utilize a variety of hazardous materials and processes; waste inks, wash-up products, press oil, coatings, adhesives, shop towels, silver from photoprocessing, and for screen printers, screen reclamation products. These materials can pose health risks to you, your employees, and the surrounding environment.

Because of these potential impacts, a number of federal, state and local agencies regulate the printing industry. Understanding and complying with environmental, health and safety rules is a continuing process. Employers are required to responsibly train their personnel on the safe and compliant way to handle hazardous materials, including hazardous waste. If you understand the rules, the compliance process becomes easier and can actually work to your advantage when you do business with lenders, realtors and insurers

2.1 REGULATING AGENCIES

Compliance regulation, through permitting and reporting has been divided along media lines; air, water, and solid/hazardous waste. Permitting is handled by different agencies or departments. In general, the State of Florida, through the DEP handles all air and hazardous waste permitting, though a few large counties have been delegated by DEP to manage local air matters and PPE recommends that printers check with their individual city or county governments to verify local requirements. Handouts covering local, county or municipal requirements will be distributed at workshops.

ENVIRONMENTAL PROTECTION ADMINISTRATION (EPA) is the Federal Agency whose objective is to protect the environment, your employees and community from exposure resulting from improper use and/or discharge of hazardous materials. The programs that are regulated by the EPA include facility air emissions, waste disposal operations, product storage, product usage and wastewater/storm water discharges.

Florida has delegation to manage several Federal environmental programs that may effect your facility including air emissions, waste, wastewater and limited storm water programs.

Resources:

- ✓ EPA Hotline (1-800-424-9346)
- ✓ EPA Web Site (WWW.EPA.GOV)
- ✓ Region 4 Website (http://www.epa.gov/region3/reg4.html)

Environmental Protection Agency
Headquarters
401 M Street, SW
Washington, DC 20460
(202) 260-2090

EPA Region IV
100 Alabama Street, SW
Atlanta, GA 30303
Phone: (404) 562-9900
Fax: (404) 562-8174
Toll free: (800) 421-1754

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) was established to protect Florida's natural resources (air, water, wetlands, plant life, soil, etc.). FDEP has authorization to adopt regulatory programs that are more stringent than the EPA. They have oversight and compliance responsibilities for waste disposal, air quality and emissions, water quality (wastewater and storm water), hazardous material storage systems, contamination clean up and many others. The agency is based in Tallahassee, Florida and subdivided into six districts.

Resources:

- ✓ FDEP Web Site: (WWW.DEP.STATE.FL.US)

FDEP Headquarters
3900 Commonwealth Blvd.
Tallahassee, FL 32399-3000
(850) 488-1554

See Appendix B for locations and phone numbers of the six(6) FDEP District offices

LOCAL AGENCIES - FDEP has delegated specific programs and responsibilities to County and City environmental agencies.

- ✓ **Storage Tanks:**
  The registration and compliance oversight of storage tanks is completed by some County environmental agencies.

- ✓ **Wastewater Discharges:**
  Discharges to sewers are regulated by the individual local utilities (POTWs).

  Septic systems (which should receive domestic wastewater only) are regulated and permitted (for construction only) by the county health departments. It should be noted that disposal of industrial wastewater to a septic system may cause that system to require a state industrial wastewater discharge permit issued by DEP.

- ✓ **Small Quantity Generators (hazardous waste):**
  Florida statutes require local agencies (usually counties) to establish SQG Programs. These programs emphasize compliance assistance, not enforcement. **Let them help you!**

OCCUPATIONAL SAFETY & HEALTH ORGANIZATION (OSHA) is the Federal Agency whose objective is to prevent damage to the most important asset your company has, you and your employees. Federal OSHA has not delegated its responsibilities to the State of Florida. Accordingly, the Federal program is administered through regions. Region IV is responsible for overseeing compliance in the southeastern United States, including Florida. These regulations influence every process in your business from prepress to product delivery.

Resources:

- ✓ OSHA Assistance Line (1-800-376-4378)
- ✓ Local duty officers located in Tampa and Jacksonville Florida are excellent resources to help you with everyday compliance issues.
- ✓ OSHA Web Site: (WWW.OSHA.GOV)
- ✓ If there is an EMERGENCY that relates to a fatality or imminent life threat, Please contact their toll free number: 1-800-321-OSHA (6742) immediately

Jacksonville OSHA Area Office
Ribault Building, Suite 227
1851 Executive Center Drive
Jacksonville, Florida 32207
(904) 232-2895
(904) 232-1294 **FAX**

Tampa OSHA Area Office
5807 Breckenridge Parkway, Suite A
Tampa, Florida 33610
(813) 626-1177
(813) 626-7015 **FAX**

FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS (FDCA) has been delegated the Emergency Planning and Community Right-to-Know (EPCRA) program by the EPA. The Florida State Emergency Response Commission (SERC), a division of FDCA, has oversight of the EPCRA program which includes community training, compliance and data dispersion to applicable emergency personnel across the State.

The EPCRA program involves the tracking and reporting of extremely hazardous material storage, use and releases. The SERC collects annual reports from the industrial community and develops statewide emergency response plans. Your facility will be governed by this agency if you should store or use amounts of specified chemicals exceeding the defined threshold planning and/or reporting quantities.

Resources:

- ✓ Web Site (www.state.fl.us/comaff/DEM/SERC/serc.htm)
- ✓ Each District of the SERC has Local Emergency Planning Commission (LEPC) staff members that can help define the reporting rules and requirements.

State Emergency Response Commission
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100
(800) 635-7179 (Florida only)
(850) 413-9970

2.2 MATERIAL SAFETY DATA SHEETS (MSDS)

MSDS are required by OSHA to be available to employees. Material Safety Data Sheets (MSDS's) primarily provide safety and health information concerning products. MSDS's can also provide environmental data, such as the concentration of VOCs and HAP's, as well as physical properties such as flashpoints and vapor pressures. Some information such as hazardous metal constituents which may be in a compound in small quantities can only be obtained from the manufacturer. If you have difficulty obtaining an MSDS from the supplier, call the product manufacturer.

Information on a MSDS can help answer the following safety questions:

- ✓ Is the material toxic?
- ✓ Do I need protective clothing?
- ✓ Is the material flammable?
- ✓ What should I do if it gets on my skin?
- ✓ How should the material be stored?

The MSDS is often the only source of information about the chemicals available to an employee. Unfortunately, not all MSDS's are of the same quality; some contain extensive information, others have very little. Regulations require that employers ensure MSDS's are accessible to all employees. They must be located close to the work area and be readily available to all workers during their workshift. MSDS's must be easily obtainable for general information or during an emergency.

Although MSDS's may vary in length and format, they are required to contain the same basic sections explained below. Remember that "hazard" in the context of an MSDS refers to a safety rather than an environmental hazard.

SECTION I - HAZARDOUS INGREDIENTS

The chemical ingredients that make up the material will be listed by percent (e.g., 79 percent sulfuric acid and 21 percent water). The total may not always add up to 100 percent since, by law, manufacturers only have to identify the ingredients that are hazardous. As an example, phosphoric acid could be listed as: Phosphoric acid - 60 percent. The other 40 percent is not hazardous and manufacturers are not required to list it. NOTE: Chemicals that make up less than 1% of the product are not required to be listed on the MSDS.

SECTION II - PHYSICAL DATA

The physical properties of a material explain how it might behave under different conditions. The following are some of the more common data provided used in this section.

- ✓ Boiling Point
- ✓ Vapor Pressure
- ✓ Vapor Density
- ✓ Specific Gravity
- ✓ Solubility in Water
- ✓ pH
- ✓ Appearance / odor

SECTION III - FIRE AND EXPLOSION DATA

This section contains information about the potential fire and explosion hazards of the material, types of protective clothing or respiratory protection needed, and fire extinguishing agents. General recommendations on fire fighting methods and extinguishing agents are indicated in this section. In general, this section indicates the best agents to put out a fire involving that specific material.

Two values commonly found in this section are flashpoint and flammable range. The flashpoint is the lowest temperature at which a liquid gives off enough vapor to be ignited. A material with a flashpoint near or below room temperature indicates that the material is especially dangerous because explosive vapors can form without additional heating. The flammable range for a material is the range of percentages of vapors from the material in air in which ignition can occur. The flammable range has both a lower and upper limit. The lower limit is called the lower explosive limit (LEL) and the upper limit is called the upper explosive limit (UEL).

SECTION IV - HEALTH HAZARD DATA

Section IV contains information about the specific health hazards, including exposure to the material; routes of entry of the material into the body; and medical and first aid treatments. The physical effects of exposure are divided into two parts: acute and chronic. Acute effects occur shortly after exposure and involve signs and symptoms, such as dizziness, burning eyes, nausea, and headache. Chronic effects may not appear for months or years after an exposure.

SECTION V - REACTIVITY DATA

Section V describes the general reactivity of the material (how stable the material is) and conditions to avoid. This information impacts how the material is stored, describes what type of chemical reactions might occur if the material mixes with another material, and provides information on toxic gases that may be produced if the material is heated or burned.

SECTION VI - SPILL OR LEAK PROCEDURES

Section VI describes methods for safe handling of spills and leaks of the material. The information given here is very general in nature and often intended for small spills and/or leaks of the material. This information is usually very general because local and/or state environmental regulations may require specific cleanup procedures.

SECTION VII - SPECIAL PROTECTION INFORMATION

Section VII provides information on protective measures to reduce personal exposure to the material, including use of personal protective equipment (such as gloves, face shields, respirators) or the use of engineering controls (such as ventilation systems).

SECTION VIII - SPECIAL PRECAUTIONS

Section VIII describes special precautions for storage, handling, and shipping of the material. This section is a generic section for any special precautions and information that has not been covered in another section of the MSDS.

2.3 HAZARDOUS WASTE REQUIREMENTS

You are responsible for the hazardous waste (HW) you generate at your facility.

It is important to know where your waste is going and that it is properly handled and disposed of safely. Regardless of quantity, the generator of HW is ultimately responsible for the waste from "cradle to grave", and can be held liable for improper management of HW even though it may have been sent to a "proper" HW management facility using a licensed transporter.

Copies of Florida's Hazardous Waste Rule, FAC 62-730, may be obtained by calling the Small Business Assistance Program (SBAP) at (800) SBAP-HLP. A summary of these HW regulations is also available.

NOTE: Many local governments have regulations and ordinances regarding the management of hazardous materials and/or wastes. Please check with those agencies for information on local requirements.

2.3.1 Definitions

Hazardous waste is defined as any solid, liquid or contained gaseous material that is no longer used and either stored, disposed or recycled, and is either "listed" in the regulations or exhibits a hazardous "characteristic", or a combination of both.

Listed wastes are so designated because of constituents in the waste or the process generating the waste and have waste codes beginning with "F", "P", "U" or "K".

Characteristic wastes are so designated because of physical properties, and have waste codes beginning with "D":

D001 - ignitable (materials with flash point < 140°, spontaneously combusts, OR...0 or an oxidizer), easily catches fire; flash point is below 140° F. "Combustible," "flammable," and "ignitable" have different definitions under other federal and state regulatory programs.

D002 - corrosive recognize that aqueous liquids that easily corrode materials or human tissue and have a pH of less than or equal to 2 or greater than or equal to 12.5.

D003 - reactive, potentially explosive or produces toxic gases when mixed with water, air or other incompatible materials.

D004 - D0040 - TCLP toxic, constituents such as cadmium, chromium, and silver, when present in specified levels, may render a waste hazardous (see Appendix C).

Hazardous wastes found in the printing industry are most likely to be ignitable, corrosive or toxic. Some solvent-based wastes are specifically *listed* in the regulations. See Appendix A for a list of "listed" solvents. **Note:** As you proceed through the Workbook, you will see that solvent-based products may also be subject to air quality requirements.

Assume your waste is hazardous unless proven otherwise by laboratory testing or by your knowledge of the products you are using. As a rule of thumb, most waste press wash, for example, will be hazardous.

"Accumulation" of hazardous waste is different from "storage." Accumulation time is the time allowed under RCRA, to accumulate hazardous waste, before a generator is required to transport the

hazardous waste to a permitted treatment, storage, or disposal facility (TSDF). The allowable accumulation time depends on generator status.

Generator Status	Maximum Accumulation Time
Large Quantity Generator	90 Days
Small Quantity Generator	180 Days
Conditionally Exempt Small Quantity Generator	Not Regulated

Containers of hazardous waste must have a hazardous waste label and accumulation start date. The start date is the first date that waste is placed into the accumulation container. Prior to expiration of the allowable accumulation time, the hazardous waste must be transported off-site for treatment, disposal, or storage.

"Storage" refers to the maximum quantity of hazardous waste maintained on-site at any given time. The maximum allowable storage quantity is also determined by generator status.

Generator Status	Maximum Material Storage
Large Quantity Generator	N/A
Small Quantity Generator	never exceed 6,000lbs*
Conditionally Exempt Small Quantity Generator	never exceed 2,200lbs*

NOTE: Exceeding storage limits automatically elevates generator status to the next higher level with increased requirements.

2.3.2 Waste Determination:

All generators of hazardous waste must make a hazardous waste (HW) determination for any waste material generated. If the material is hazardous, then it must be recycled, treated, stored, or disposed at a proper HW facility. HW cannot be disposed on or in the ground, or in local landfills, septic tanks, or injection wells without prior treatment which will require special permits. This is important because the amount of hazardous waste you generate will determine your waste management requirements.

The first step is to identify your hazardous wastes. Each waste material which you generate must be examined to determine if it falls into one of the "listed" or "characteristic" waste groups. Worksheets in Section 3 will assist you determining which of your wastes are hazardous. For additional assistance call Small Business Assistance Program at (800) SBAP-HLP or one of the resources shown in Appendix B. A list of laboratories approved to do hazardous waste determination testing is included in the Appendix G handout.

Once you have performed a hazardous waste determination for a particular waste, you do not need to repeat the determination unless the type of waste or the way that you generate it changes. For example, a significant chemical change, or new product, in some operation.

If your waste contains used or excess chemicals, it is prudent to assume that it is hazardous unless you are certain that it is not.

Examples of printing hazardous wastes are:

1. Untreated photoprocessing fixer solutions and silver recovery canisters not properly backflushed
2. Some inks and ink cleanup wastes
3. Some waste cleaning solvents
4. Cleanup materials, which are saturated with solvent-based cleaners or hazardous inks, including rags and absorbents
5. Some adhesives containing chlorinated or petroleum solvents
6. Used oil, oily debris and oily wastewater. See Section 2.3.2.a.*
7. Waste fluorescent and high intensity discharge (HID) lamps and mercury containing devices. See Section 2.3.2.6.*

*These wastes are only subject to regulation as hazardous waste if they are not managed and disposed (recycled) in accordance with FDEP management standards:

A sample waste inventory can be found in Section 2.3.4.

2.3.3 Towels, Wipes and Other Absorbents:

Shop towels, rags and wipes are intended as cleaning aids. Good practice means putting solvent on the towels and wiping the surface to be cleaned, not pouring solvent on a surface and mopping with the towel(s).

- ✓ Saturated shop towels should be drained, wrung out, centrifuged or otherwise processed to remove free liquid before they are sent to an industrial laundry or for disposal.
- ✓ Any removed free liquid must be removed and managed as a hazardous waste if it exhibits a hazardous characteristic or meets any of the listed hazardous waste criteria.
- ✓ Air-drying is NOT permitted because it releases pollutants to the environment. It is not recommended that flammable solvents be recovered from shop towels without explosion-proof equipment.
- ✓ Do not pour excess waste cleaning solutions, including press wash or ink removal products, into container(s) of used shop towels belonging to a laundry service. This practice could be could be treated as illegal disposal of hazardous waste and puts you and any laundry accepting these towels at risk of enforcement.

Laundry Services

Using a commercial laundry service to provide reusable shop towels means you do not have to manage them in accordance with hazardous waste requirements and they are not counted in determining your HW generator status.

Disposable Shop Towels or Other Cleaning Pads?

Disposable towels or other cleaning pads contaminated with solvents are subject to HW requirements. Using disposable materials *may* increase your hazardous waste generator status (e.g., CESQG to SQG) with more requirements. PPE recommends that even printers using a minimum number of shop towels or other disposable wipes evaluate generator status using disposable wipes vs. industrial laundry service.

Spill Cleanup Absorbents

Absorbent materials used in cleanup and spill containment must be managed properly, depending on materials absorbed and stored in accordance with the following Storage Requirements. Absorbents and spill cleanup materials, such as “oil dry”, absorbent "socks," and "pigs" managed as hazardous wastes, if they are contaminated with hazardous materials. Oil-contaminated absorbents must be managed in accordance with DEP's used oil regulations. See Section 2.3.4.

Storage Requirements

1. Solvent / ink contaminated shop towels and other solvent-contaminated cleaning materials collected in containers marked as "Recyclable Towels" or other appropriate wording?
2. Disposable solvent / ink contaminated towels, rags and other solvent-contaminated cleaning materials determined to be hazardous waste must be collected in containers with 1) the words "Hazardous Waste" and 2) the date accumulation of material started.

   NOTE: Grounding requirements could apply to shop towels stored in 55-gallon drums if the solvent used with the towels has a flashpoint below 100 F.
3. All containers used for collecting solvent / ink contaminated shop towels and other solvent-contaminated cleaning materials, for either recycling or disposal must be kept closed, except when adding or removing materials?

2.3.4 Used Oil (Waste Oil):

Lubricating oils are used in presses, bindery equipment, building environment equipment (e.g., air conditioning units) and motor vehicles. From time to time, the equipment may require maintenance and oil changes. Oil leaks may occur or you may have a small oil spill that requires cleanup. Oil from these sources is regulated as waste oil (also referred to as used oil).

Waste oil is an oil product that has been used for its intended purpose and for whatever reason can no longer be used. During normal use, impurities such as dirt, metal scrapings, water, or other chemicals can get mixed in with the oil. After continual use, additives in the oil can break down or the oil loses its viscosity and lubricating properties. The oil no longer performs well and is replaced with virgin or re-refined oil to do the job.

✓ **Typical Waste Oils**

Here are some of the types of oil typically found in a print shop.

1. Press Oil
2. Compressor Oil
3. Engine Oil (vehicles or generators)
4. Transmission Fluid
5. Hydraulic Fluid
6. Machine Lubricating Oil

If you generate waste oil, there are certain good housekeeping practices that you must follow. These management standards are common sense, good business practices that ensure the safe handling of waste oil, promote recycling, and reduce the impact on the environment. The following standards apply to all generators of waste oil, regardless of the quantity handled:

1. Keep used oil in a separate container, clearly marked "USED OIL ONLY". Immediately clean up any spills and replace any leaking containers.
2. Don't add waste solvent to used oil

3. Don't pour used oil on the ground (even for dust suppression) or dispose of used oil in a storm drain, septic tank, sewer or dumpster (don't mix used oil with other solid wastes destined for a landfill.
4. Use a used oil transporter that is registered with FDEP (See Section 2.3.4.e & Appendix D). Evaluate transporters for service , compliance with environmental regulations and proof of current liability insurance.
5. Keep accurate records of used oil testing and shipment for 3 years.

✓ What About Oil Contaminated Shop Towels?

You can send oil-contaminated Shop towels to a commercial laundry, if they are not saturated with free-flowing oil. Disposable wipers are handled like oily debris. If they have free-flowing oil, they must be handled like waste oil, collected in a container and disposed by a licensed transporter.

✓ How Do I Handle Oily Debris?

Oily debris are waste materials and soil contaminated with waste oil. These wastes can be handled as nonhazardous solid wastes depending on their source. Examples of oily debris that may be handled as nonhazardous solid wastes are absorbent contaminated with .oil, but dry to the touch or, personal protective equipment slightly contaminated with oil.

Absorbent booms or pigs are manufactured to absorb more than their weight in oil. That means free-flowing oil can be squeezed from them. As a rule of thumb, you are required to handle these cleanup materials like waste oil, unless tested and otherwise found unsaturated. Any other waste materials with free-flowing oil must be handled like waste oil and collected for proper disposal.

✓ What About Oily Wastewater?

Water and wastewater contaminated with "de minimis" (minimal) quantities of oil are excluded from regulation as waste oil. The definition of de minimis quantities of oil is " ... small spills, leaks, or drippings from pumps, machinery, pipes and other similar equipment during normal operations..."

You may be allowed to discharge water contaminated with minimal quantities of oil from routine cleaning activities to the municipal sewer. Most municipalities require you to obtain approval for wastewater discharges to the sewer. See Section 2.4 for more information on wastewater requirements. Any water or wastewater contaminated with visible quantities of oil must be handled as waste oil.

✓ How Do I Ship Waste Oil and Oily Debris?

You are required to use a licensed transporter to ship waste oil to a treatment, storage or disposal facility, with one exception. A CESQG of hazardous waste can transport up to 55 gallons of waste oil to an approved waste oil collection center. The container must be in good condition and not leaking. You must also transport the waste oil in a company vehicle. You should also make sure your company has the appropriate liability insurance. PPE recommends that even CESQGs use a licensed transporter.

2.3.5 Batteries, Fluorescent Lamps, HID Lamps and Mercury Containing Devices:

Universal Wastes are wastes that are only regulated as hazardous when discarded. Some of these are high volume, low hazard wastes that, when properly recycled or reclaimed, have little impact on the environment. The regulations for universal wastes encourage the collection and recycling of these wastes to curtail their disposal as municipal wastes and also to reduce the administrative burden on generators. All hazardous waste requirements apply to these wastes if they are disposed (not recycled).

Typical Universal Wastes:

Universal waste batteries include Ni-Cad batteries and small sealed lead-acid batteries. These batteries are typically found in electronic and computer equipment, mobile phones, and emergency backup lighting. However, the large lead-acid batteries found in Uninterrupted Power Sources (UPS) equipment that provide essential power to computers are not regulated as universal waste. These batteries are not counted as hazardous waste, as long as they are sent to a reclaimer. Keep receipts!.

Pesticides and mercury-containing thermostats, though not typically found in print shops, must be handled like universal waste batteries. Florida has adopted a policy to allow management of fluorescent and HID (high intensity discharge lamps) in a manner consistent with universal waste standards.

1. Recycle your fluorescent and high intensity discharge (HID) lamps. Lamps destined for recycling will not count toward your facility's hazardous waste generator status.
2. If you do not recycle your mercury containing lamps, you must perform a hazardous waste determination and if found to be hazardous, the lamps will count toward your hazardous waste generator status.
3. Don't place used lamps from business, industry, or institutions in the regular trash until a hazardous waste determination has found them to be non-hazardous.
4. Store lamps in a manner that will prevent them from breaking and label each used lamp container as "Spent Mercury-Containing Lamps." It's a good idea to use the box the lamps came in..
5. If lamps are broken, store them in a tightly sealed container marked "Spent Broken Mercury-Containing Lamps."
6. Keep copies of any shipping papers for at least 3 years.
7. Don't intentionally break or crush lamps because mercury may be released.
8. Don't tape lamps together for storage or shipment. This may cause them to break.

2.3.6 Hazardous Waste Generator Status (Category)

Once your hazardous wastes have been identified, you need to determine, on a monthly basis, how many pounds of hazardous waste you generate. On the next page is a sample hazardous waste inventory.

The accurate determination of your generator status is extremely important because more stringent requirements apply to larger generators; LQG requirements are significantly greater than for an SQG. Similarly, regulations are more burdensome for SQGs than CESQGs**.** Most printers will find themselves in the CESQG category, with very few printers being classified as LQGs. The following table outlines requirements for each generator and factors (monthly generation rate and total accumulated) that define generator status (category).

Requirements by Category of Generator

REQUIREMENT	LQG	SQG	CESQG
Waste characterization	YES	YES	YES
Ensure delivery of HW to approved facility	YES	YES	YES
Keep records of waste determination and disposal	YES	YES	YES
*Generate no more HW than allowed per month (lbs.)	No Limit	2,200 lbs.* ± 4 drums	220 lbs.*
*Do not accumulate more HW than allowed (lbs.)	No Limit	13,200 lbs.* ± 25 drums	2,200 lbs.* ±4 drums
Obtain DEP/EPA ID Number	YES	YES	GMP**
Use manifest system to account for HW	YES	YES	GMP**
Land ban certification or notification	YES	YES	GMP**
Emergency planning & Personnel training	YES	YES	GMP**
Manage containers and tanks properly	YES	YES	GMP**

* These factors determine your generator status. Exceeding either of these values automatically elevates you to the next higher, more restrictive generator category.

** *Not required by regulations but a Good Management Practice, (just in case).*

The following table shows a sample Hazardous Waste Inventory based on activities and typical wastes generated from printing. Use this sample as a guide, along with the Worksheets in Section 3 to make your waste determinations and determine your generator status (category).

✓ *Remember; use the resources in Appendix B for questions and assistance in completing the Workbook!*

Sample Hazardous Waste Inventory

Activity	Waste	Hazardous Waste?	Why Hazardous?	Generated per month in gallons	Generated per month in lbs. (1)	Hazardous Waste Codes
Pressroom	Solvents (Cleaning)	Yes	flashpoint <140°F.	20 gal.	160 lbs.	D001 Ignitable
Pressroom	Inks- offset lithographic	No		---	---	---
Pressroom	Inks - flexo solvent based	Yes	flashpoint <140°F.	3gal.	26 lbs.	D001 Ignitable
Pressroom	Press oil	No/Yes, depending	Not HW if recycled	16 gal.	---	Not counted, if recycled
Postpress	Adhesives	Yes	flashpoint <140°F.	2gal.	16 lbs.	D001 Ignitable
Facility wide Maintenance	Fluorescent lamps, batteries	No/Yes, depending	Not HW if recycled		---	Not counted, if recycled
Total monthly amount of hazardous waste (See Note 2)				**41 gal**	**332 lbs.**	

NOTES:

1. Pounds per month were calculated by using average values for the densities (lbs./gallon) of the wastes. For example: Adhesives have a density of 8.0 lb./gallon; two gallons would weigh 16 lbs.
2. Based on this example, the facility would be classified as a SQG, generating more than 220 lbs. but less than 2,200 lbs. per month.

2.3.7 Hazardous Waste Management Requirements

Hazardous Waste management requirements are directly linked to the HW generator status. For example. LQGs are required to comply with a large number of regulations and practices while a CESQG is the least regulated generator category and has rule exceptions not available to other categories. Even though CESQGs are exempt from a number of HW management requirements, the PPE strongly encourages CESQG printers to adopt those SQG and LQG requirements that enhance and promote workshop health and safety. A complete list of SQG HW management requirements are provided in the "SQG Handbook" which will be distributed at PPE workshops or is available from DEP.

✓ **Conditionally Exempt Small Quantity Generator (CESQG)**

To maintain your CESQG status you must:

1. Perform a HW determination.
2. Ensure delivery of HW to a proper recycling facility or treatment, storage or disposal facility (TSDF).
3. Maintain written records, detailing quantities of hazardous waste generated and method and location of disposal.
4. **Never** generate more than 220 lbs. of hazardous wastes in a calendar month. This is slightly less than one half of a 55-gallon drum, or about 25 gallons.

5. **Never** accumulate more than 2200 lbs. or approximately four 55-gallon drums of hazardous waste on site at one time.

NOTE: If a CESQG exceeds 220 lbs. or accumulates more than 2,200 lbs. at any one time, then it becomes subject to requirements of the Small Quantity Generator.

A CESQG does not have to obtain an EPA/DEP ID number, can transport their own HW, and is not subject to accumulation time limits, as long as conditions 1-5 above are met: However, PPE recommends CESQGs obtain EPA/DEP IDs and use approved transporters to move hazardous waste.

✓ **Small Quantity Generator (SQG)**

If you determine you are a SQG, you must comply with the following, in addition to CESQG requirements 1, 2 and 3 above:

1. Obtain a DEP/EPA Identification number.
   Call the Small Business Assistance Program (SBAP) at (800) SBAP-HLP for information regarding EPA hazardous waste identification numbers. There is no charge associated with obtaining an EPA identification number.
2. Use this ID number on all hazardous waste manifests.
3. **Never** generate more than 2,200 lbs. of hazardous wastes in a calendar month. This is slightly less than five 55-gallon drums, or about 250 gallons.
4. **Never** accumulate more than 6,000 lbs. or approximately five 55-gallon drums of hazardous waste on site at one time.

The following is a partial list of specific hazardous waste (HW) rules, regulations and good management practices that apply to a SQG. While CESQGs are not required to observe these regulations, PPE strongly recommends that CESQG printers adopt as many as these practices as feasible, particularly those that benefit workplace health and safety.

2.3.8 HW Container Management

1. Keep containers closed, except when adding or removing waste - use funnels with valves or other closure device suitable for waste such as spring closed lids.
2. Label and date as soon as waste is added, except Satellite Containers (See Section 2.3.8 for explanation of Satellite Containers).
3. Inspect containers at least once a week and keep a written log of container inspections. Use an inspection log similar to the sample in Appendix H and include the following items:
   a) Date of Inspection
   b) Time of Inspection
   c) Name of Inspector
   d) No. of Containers Inspected
   e) Condition of Containers
   f) Notes of Observations Made
   g) Date and Nature of Any Repairs or Corrective Act ions
4. If a container is not in good condition or if it begins to leak, the generator must transfer the hazardous waste from this container to a container that is in good condition.

5. Check compatibility of waste with containers; e.g. some acids corrode metal and some solvents dissolve plastics, separate incompatible wastes, even in drum storage area, with concrete curbs, containment trays, etc.
6. Do not mix wastes without checking with your disposal facility. Disposal cost of the mixture will likely be based on the more expensive waste.
7. Do not store hazardous waste on-site for more than180 days (6 months) beginning on the date waste is first placed in the drum or container. See exception for Satellite Containers discussed below.
8. The hazardous waste storage area should be clearly labeled and secured against unauthorized entry. Outdoor accumulation of HW is not recommended.
9. If HW is stored outdoors, provisions must be made to contain possible releases, provide for collection and proper disposal of rainwater and potential vandalism.
10. The surface of the hazardous waste storage area must be impervious without cracks or gaps.
11. Containers holding incompatible hazardous wastes must be separated by means of a dike, berm, wall, or other device. The containment system must hold at least ten percent of the total quantity of all containers or 110% of the volume of the largest container, whichever is greater.
12. Ignitable/reactive waste cannot be stored within fifty feet of any property line and "NO SMOKING" signs must be visible.

NOTE: Tanks are governed by a specific set of regulations. Printers who have tanks at their facilities should contact the SBAP or the Tanks Section of their local DEP District Office to ensure their tanks are properly managed and registered, if necessary.

✓ **Satellite Containers (Work Stations)**

The use of "Satellite Containers" is intended to help generators of small waste streams and small businesses by providing a way to accumulate HW at a workstation, with no time limit. A generator may accumulate as much as 55 gallons of hazardous waste or one quart of acutely hazardous waste, without a time limit, in containers meeting the following requirements:

1. Must accumulate at or near the point of generation.
2. Must be under the control of the operator of the process generating the waste.
3. Must mark the containers, either with the words ``Hazardous Waste", or with other words that identify the contents of the containers. Do not date until full.
4. When the container is full, it must be dated and moved to the HW accumulation area within three days.

✓ **Empty containers** (of hazardous waste) are not regulated under hazardous waste rules. To meet the RCRA definition of “empty”, a container must have:

1. All wastes removed that can be removed using "commonly used practices" for that type of container, e.g., pouring, pumping, aspirating, etc.
2. No more than one inch (2.5 centimeters) of residue remain on the bottom of the container or inner liner, or

3. No more than 3 percent by weight of the total capacity remains if capacity is 110 gallons or less.
4. No more than 0.3 percent by weight of the total capacity remains if capacity is greater than 110 gallons.

✓ **Hazardous Waste Labeling**

Clearly label each container in the hazardous waste accumulation area with the following:

1. The words "HAZARDOUS WASTE". Note: Containers of hazardous waste must be labeled "Hazardous Waste". An exception applies for satellite storage containers where only the name and/or description of the waste is required; e.g. "Waste Presswash".
2. Waste Codes for type of hazard, e.g. IGNITABLE (D001) TOXIC (D004-043), CORROSIVE (D002), LISTED (F001, F002, F003, etc.).
3. Date accumulation began (date when waste first put in container)

2.3.9 Shipping Hazardous Waste

Each SQG (or LQG) that generates hazardous waste must have a unique site-specific EPA/DEP identification number. If you have not yet applied for a number and are an SQG (or LQG), you need to obtain an EPA ID number. Call the Small Business Assistance Program (SBAP) at (800) SBAP-HLP or your District DEP office (See Appendix B) to obtain your ID number.

1. You must use a licensed hazardous waste transporter for shipping hazardous waste. Printers, like all hazardous waste generators, should choose a waste transporter carefully. Guidelines to help select a waste transporter are provided in this section and there are certain exceptions, if you are a CESQG.
2. Transporters must be approved by DEP and DOT to pick up hazardous waste in Florida. See Appendix D for a list of approved hazardous waste transporters.
3. **As a generator of the waste, you must know where your waste is going.** Ask your transporter for an audit (documentation of compliance) on the treatment or disposal facility where they are taking your waste.

✓ **Selecting a Waste Transporter**

Ask the transporter the following questions:

1. Where will my waste go and how will it be processed? Remember that you are responsible for your waste "from cradle to grave," so it is important to know that it is disposed of properly.
2. Do you analyze (profile) the waste to help me make a waste determination? Remember, as the generator, you are ultimately responsible for knowing whether your waste is hazardous and, if it is hazardous, you must know its contents.
3. Does the transporter help with waste analysis (and how often) or will you be required to provide test results?
4. How much does the waste analysis cost?
5. Will you pick up small amounts of waste? In what size containers?
6. Will you help me prepare hazardous waste manifests, labels and other shipping documents and go over them with us?

7. Do you provide a regular pick-up or on-call service?
8. What are your total charges? Are there any add-on costs?
9. Can you provide me proof of indemnification (insurance)?
10. Can you provide references of other printers using your services?
11. What type of Emergency Response Procedures are used by the drivers and how much training have they had?

✓ **Hazardous Waste Manifest**

A manifest is a multiple copy shipping paper that is used to track the movement of hazardous waste from generation to disposal. A manifest must accompany every waste shipment unless you are a CESQG and are self-transporting your waste to another generator or receiving facility. In that case, you must obtain a receipt to protect yourself. You must keep your manifests and receipts together in your files for at least three years, but PPE recommends keeping them forever.

If the waste is disposed in a hazardous waste landfill, it must meet certain treatment standards and requires a Land Disposal Restriction (LDR) notification. Copies of LDR's must be kept for five years. For more information concerning LDR requirements call the Small Business Assistance Program at (800) SBAP-HLP.

For each pick-up, either you or your transporter must provide a manifest. The transporter may provide one, already filled out, except for your signature. **Check it to be sure the information is correct**, because you as the generator are responsible for all violations associated with the manifest**.** The waste descriptions must comply with US Department of Transportation (DOT) shipping requirements.

Florida requires completion of the following items on the manifest that are not required by the federal regulations: Items D, F, H, I, and K on Form 8700-22 and items O, Q, R and T on Form 8700-22A.

Retain a copy of the hazardous waste manifest when the transporter picks up the waste and match it to the copy received when the waste has reached its final destination. Staple these two copies together for your permanent files along with any Land Disposal Restriction forms received from the transporter, records of waste analyses, Material Safety Data Sheets, and any other hazardous waste information. Note: Copies of MSDS's must be readily available to your workers.

The treatment facility is required to return a signed copy of the manifest to you. If you do not receive a signed copy of the manifest from the receiving facility within 35 days of the shipment, contact the transporter or the facility to obtain a copy. **If you still do not receive a signed manifest, you must notify DEP in writing (Exception Report)** after 45 days (LQG) or 60 days (SQG). The exception report must include steps taken to find the missing copy and include a copy of the original manifest.

2.3.10 Personnel Training

At a minimum, a training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including where applicable, and must include waste management practices specific to their job. This training must be documented.

2.3.11 Emergency Preparedness

The following are required components of an Emergency Preparedness Plan:

1. Have a communication system or an alarm for instructing staff, by voice or signal, in an emergency.
2. Designate an emergency coordinator, post name and phone by phones.
3. Instruct each employee in emergency procedures.
4. Have a telephone or other device for contacting the police, fire or emergency response team.
5. Post emergency phone numbers at each phone and along evacuation routes.
6. Maintain adequate aisle space between chemical containers
7. Post "No Smoking" signs as needed
8. Have portable fire extinguishers (Type ABC) and/or fire control equipment.
9. Ground containers of flammable materials or wastes (defined as having a flashpoint less than 140° F) where they are in active use to be sure that all sources of ignition have been eliminated. If you have any questions on the proper methods of grounding containers, contact your local fire department.
10. Ensure adequate water supply and pressure; maintain automatic sprinkler, water spray, or foam producing equipment in proper working order
11. Instruct employees on the proper waste handling and emergency procedures
12. Make emergency arrangements with appropriate local responders (hospital, fire department and police). At a minimum these responders should know the type, quantity and location of hazardous materials. PPE recommends sending to these responders this information in a "receipt required" letter, so as to have a record of your notification.
13. Clearly mark all evacuation routes and exits (Note: this action is only required for LQGs, but PPE highly recommends all generators do this.)

2.3.12 Large Quantity Generator (LQG) Hazardous Waste Management Requirements

In some areas, LQG HW requirements exceed those of a SQG. LQGs are required to develop more extensive personnel training, written contingency plan procedures, waste minimization plans and may only store hazardous waste on-site for up to 90 days without a permit. LQG printers should contact the Small Business Assistance Program (800) SBAP-HLP for further information about LQG requirements.

2.3.13 Change of Generator Status

If your generator status (LQG, SQG or CESQG) changes (either increases or decreases), call the DEP Hazardous Waste Program at 10850-488-0300 (See Appendix B) to request a change of status notification form.

2.4 WASTEWATER

Normally, the primary wastewater issues printers face concern discharges of industrial wastewater contaminated with silver, some water based inks, or fountain solutions. The wastewater discharge requirements your facility must meet specific limits for silver and other constituents identified by your local utility. Untreated spent fixer from tray development or automated photoprocessors can contain 1,500 to 5,000 parts per million of silver. Though silver is by far the most common metal found in printers' wastewater, other metals could potentially be introduced to the facility's wastewater process (e.g., from certain types of inks or used oils). Other frequent contaminants for printers include chromium, copper, zinc, formaldehyde, and toxic organic chemicals.

Allowable silver concentrations (and other heavy metals, e.g., chrome, lead, cadmium, etc.) will be established by your local utility. Check with your local utility on these limits.

If your company is not on sewer, then no industrial process waste (including any photochemicals, cleaning solutions, waste inks, fountain solutions, or water contaminated with any of these) may be discharged to a septic tank or other onsite sewage disposal system.

If your company discharges wastewater to surface waters (for example, rivers, lakes, and streams), you are required to have a National Pollutant Discharge Elimination System (NPDES) permit. If you do not have this permit, then contact the Small Business Assistance Program at (800) SBAP-HLP for more information.

2.4.1 Good Management Practices (GMP's)

1. No wastewater should be disposed of through the outside drains around the building or in the parking lot.
2. No chemicals should be dumped from containers or buckets into sinks or floor drains. Containers of used solutions, including waste inks, solvents, lubricants, cleaners, or oils should be disposed of properly via an appropriately designated container as specified under the facility's solid waste handling procedures.
3. Facility sinks are to be used primarily for hand washing only.
4. Any parts required to be washed in the sinks should be allowed to drip dry from any cleaners, solvents, or other chemicals before they are rinsed in the sink.
5. In the event of a spill of any kind of chemical material, efforts should be made to prevent the chemical from reaching the floor drains by using absorbent spill containment booms ("pigs") and drying agents.
6. In the event a spill reaches the septic system, the facility should call the Small Business Assistance Program at (800) SBAP-HLP.
7. In the event a spill reaches drains connected to the sewer system, call your local utility.

2.4.2 Silver Recovery Systems

If photoprocessing wastewater is to be discharged to the sewer, all silver-bearing wastes, including fixer, bleach-fix, stabilizers from washless systems and low flow wash water, but not including developer, and bleach, must pass through and be treated by a properly designed and operated silver recovery unit (SRU). Rinse waters may not have to by treated with an SRU dependent on the silver

concentration, and whether it passes the silver discharge limits. SRU's must be operated and maintained according to manufacturer's specifications. Records must be kept to show the SRU's are properly operated and maintained.

There are several types of SRU's. The most common are electrolytic, metallic replacement cartridges (steel wool canisters), and ion exchange units. They may be used separately or in combination, but an electrolytic unit alone may be insufficient. If you use an electrolytic unit, it may need to be used in conjunction with a second stage, or second and third stage, system. Equipment maintenance is the key to properly operating SRU's.

To meet silver discharge limits you should:

1. Perform weekly inspections and regular maintenance of SRU's;
2. Hazardous Waste Good Management Practices Sample and test the SRU effluent periodically to ensure that the effluent meets discharge limits;
3. Mark the date on your cartridges/canisters when you install them;
4. Replace cartridges when they no longer remove silver efficiently; and
5. Keep a log of your cartridge installation and replacement dates.
6. Backflush all metallic replacement units at least three times into an another unit to remove silver-laden solution and allow the unit to be shipped as non-hazardous waste

2.4.3 Sampling Requirements

Your local sewer utility, often referred to as a POTW or Publicly Owned Treatment Works , may require that you conduct periodic sampling for various chemical constituents. Contact your local utility to find out your specific requirements. In addition, if you are using a Silver Recovery Unit (SRU), you must test the effluent from the SRU to ensure that it is working effectively. The appropriate sampling frequency will be specified by your local utility.

If the analysis shows that your treatment equipment is not effectively removing silver, you must take steps immediately to prevent inadvertent discharge of silver contaminated effluent, repair or replace the equipment.

The essential step in satisfying silver (and other heavy metals) environmental requirements is to know your local utility's restrictions and monitor your discharge to ensure you are in compliance with these requirements.

2.4.4 Wastewater Storage

If wastewater is to be sent off-site for treatment, drums containing nonhazardous wastewater should be closed to avoid spills, labeled with the wastewater contents and source, maintained in good condition, placed away from drains and on an impervious surface and inspected weekly for leakage, corrosion, or deterioration.

NOTE: Silver-bearing photoprocessing wastewater is usually considered hazardous waste.

2.4.5 Wastewater Handling Tips for Septic Systems

Facilities must not allow any process chemicals to be discharged into the septic system. This means that no one may put anything into the drains that lead to the septic system that could potentially interfere

with the operation of the septic system or allow a process chemical to be introduced to the ground water via the septic system's leach field. The facility wide prohibition forbids the dumping of chemicals and also of solid objects or materials that may harden or solidify in the septic system. If the septic system is cleaned or removed in the future, copies of all sampling and test results must be maintained at the facility.

2.4.6 Stormwater

Stormwater is divided into two categories for regulatory purposes, contaminated and non-contaminated. Most printing facilities will not be required to have any kind of stormwater permit as long as they do not allow any of their stormwater to become contaminated. Contaminated stormwater discharged to a waterway requires a special permit. Stormwater discharges to a POTW, require notification to the POTW.

The simplest way to avoid stormwater contamination is to keep all chemical and waste storage and dispensing indoors and contained within the building or construction of a protected shelter. Caution must be exercised around loading docks and parking lots where materials are moved between vehicles and the facility. Whenever possible, such areas should be covered. Shelters can be built for dumpsters, or they can be brought inside. All material transfer should take place over an impervious (paved) surface. Basic precautions such as placing chocks under the wheel of trucks which are being loaded and unloaded are fundamental to reducing the risk of spills. Spill control and clean up supplies (such as "pigs" or Speed-Dri) should be kept available near these areas in case of any spill.

In the event of a spill, every effort should be made to keep the spill from reaching storm drains and other conduits to bodies of water such as streams or retention ponds. If a spill occurs which may reach such a water body, call SBAP immediately. Depending on the quantity and the material spilled, regulations may require reporting of the spill to regulatory agencies within 24 hours after its occurrence.

If your facility stores chemicals or wastes outside, (even under an over hang or roofed area with open sides), the containers should be placed on an impervious surface and provided with containment (typically a concrete curb) which will contain at least the volume of the largest container plus an allowance for rainfall (in Florida, a minimum of 8 inches is recommended). The containment should be allowed to drain only through a pipe equipped with a valve which is kept closed except when collected stormwater is being discharged. Prior to opening the valve, the water should be inspected for any sheen, discoloration, or other evidence of contamination. If the water may be contaminated, contact the Small Business Assistance Program at (800) SBAP-HLP for advice concerning disposal.

2.6 AIR QUALITY

While many printers are small facilities, they all emit air pollution and may need to comply with Florida's Department of Environmental Protection (DEP) air pollution control and permitting regulations. The owner or operator of any print shop that emits or can be expected to emit any air pollutant **shall** obtain an appropriate permit from DEP prior to beginning construction, modification, or initial or continued operation of the print shop unless exempt from air permitting. This section summarizes the regulations that could apply to your shop. This information applies to lithographic, flexographic, rotogravure and the screen printing industry.

However, it is important to note that certain counties, which were previously designated non-attainment for ozone, are now designated air quality maintenance areas by Florida Administrative Code rules. Areas designated as an air quality maintenance area for the pollutant ozone are Orange County, Duval County, the area consisting of Broward, Dade, and Palm Beach Counties, and the area consisting of Hillsborough and Pinellas Counties. Printing facilities in air quality maintenance area may be subject to more stringent air emission limits specified in RACT (Reasonably Available Control Technology) rules. Also, certain counties (Broward, Dade, Palm Beach, Pinellas, Hillsborough, Duval, and Orange) have their own air pollution control agencies and regulations. All of the information in this section is applicable with the exception that in these counties the regulations may be stricter and may have lower emissions limits.

IMPORTANT DEFINITIONS:

Actual Emissions means the amount of a pollutant emitted from each Facility or piece of equipment, such as a press.

Facility means all sources of air pollution on contiguous property that is owned or operated by the same entity.

Hazardous Air Pollutant (HAP) is a compound, when emitted, is considered hazardous to the environment and public health. There is a list of 188 HAPs. See page Appendix F.

Nitrogen Oxides (NO_X) and Sulfur Oxides (SO_X) are compounds generated from the combustion of fuel oil, liquid propane gas, natural gas, etc. and contribute to smog.

Potential Emissions (Potential to Emit or PTE) means Actual Emissions per hour multiplied by 24 hours per day and 365 days per year or Actual Emissions per hour multiplied by 8760 hours per year. This will result in a mass rate on a yearly basis (pounds or tons per year).

Unit is an individual piece of equipment that emits or has potential to emit air pollution, such as a press or stand alone bindery line.

PM_{10} particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by an EPA and state approved reference method

Volatile Organic Compound (VOC) is any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions (contributes to ozone). There are certain organic compounds, which have been determined to have negligible photochemical reactivity, which are not regulated as VOCs but may be regulated as a HAP, such as Methylene Chloride.

2.6.1 Air Pollution Emissions from Printers

All DEP requirements are based on the amount of actual and potential air pollution emissions generated by your shop.

Print shops emit several types of air pollutants:

- Volatile Organic Compounds (VOCs),
- Hazardous Air Pollutants (HAPs),
- Particulate Matter (PM),
- Nitrogen Oxides (NO_X) and
- Sulfur Oxides (SO_X)[see important definitions].

Most VOCs and HAPs generally come from printing inks, press cleaning solutions, fountain solution additives, coatings, and adhesives. PM generally is paper dust from cutting, folding and binding operations. NO_X and SO_X are generated from fuel burning boilers, generators and press dryers.

To determine if any requirements apply, you must compile an inventory of the types and amounts of air pollution emissions from all activities including: inks, coatings, adhesives, press cleaning solutions, boilers, storage tanks, and any fuel combustion equipment. You do not have to include products for incidental use, such as janitorial products. A portion of the film and plate chemistry may have to be counted depending on the quantities used. Small printers will not likely need to count the film and plate chemistry.

2.6.2 Air Construction Permits and Air Operating Permits

You may be required to obtain a DEP permit to install and operate equipment that causes VOC, HAP or NO_X emissions. For many small printers, the emissions are considered insignificant and no permits are required. Depending on the amount of actual or potential emissions, a DEP permit may be needed for a single press or for the entire shop.

You must have DEP authorization before you install or operate equipment, if you exceed VOC, HAP, or NO_X thresholds requiring a construction or operating permit.

More Important Definitions

Construction Permit is a written DEP authorization to begin installing or modifying equipment that emits air pollutants.
Operating Permit is a written DEP authorization to begin operating new/modified/existing equipment or an entire facility.
Modified means equipment or operation changes that increase the amount of air pollution emitted, such as adding a press or coating unit.
Attainment Area is an area that meets the Ambient Air Quality Standards for the air pollutant ozone, PM_{10}, SO_X, CO, NO_X, and Lead
Non-attainment Area is an area that does not meet specific ambient air quality standards.
Maintenance Area is a previous non-attainment area that now meets ambient air quality standards.

NOTE: Federal and state rules and regulations are continually changing and may change the permitting requirements for your shop. It is important that you stay informed by contacting your local permitting authority or trade organization listed in Appendix A.

2.6.3 How Do I know if I am Exempt from Permitting?

A print shop is exempt from air permitting and does not need an air construction permit or an air operating permit if all of the emissions units (presses, boilers, and all equipment) and activities within

the print shop, including and any proposed new/modified emissions units and activities, meet all of the following criteria:

1. No emissions unit or pollutant-emitting activity within the shop would be subject to any unit-specific regulatory requirement, such as a MACT (Maximum Available Control Requirement).
2. The entire shop would not emit or have the potential to emit:
   - ✓ 1,000 pounds per year or more of lead and lead compounds expressed as lead;
   - ✓ 1.0 ton (2,000 pounds) per year or more of any hazardous air pollutant;
   - ✓ 2.5 tons (5,000 pounds) per year or more of total hazardous air pollutants;
   - ✓ 25 tons (50,000 pounds) per year or more of carbon monoxide, nitrogen oxides, and sulfur dioxide; and
   - ✓ 10 tons (20,000 pounds) per year or more of any regulated pollutant, which includes VOCs.
3. The print shop would not emit or have the potential to emit any pollutant in such amount as to make the facility a Title V source, nor would the shop be a Title V source for any other reason.

If your print shop is located in an air quality maintenance area for ozone, the print shop may be subject to RACT (Reasonably Available Control Technology) requirements for VOCs. A print shop in a maintenance area is not subject to RACT requirements if:

- ✓ the print shop emits VOC at a rate of 15 pounds or less in any one day,
- ✓ **and** emits VOC at a rate of 3 pounds or less in any one hour.

Areas designated as an air quality maintenance area for the pollutant ozone are Orange County, Duval County, the area consisting of Broward, Dade, and Palm Beach Counties, and the area consisting of Hillsborough and Pinellas Counties.

2.6.4 How Do I know if I Need a Construction Permit?

Any proposed print shop, bindery equipment, or press addition/modification with potential to emit air pollutants which is not exempt from permitting or is in a maintenance area and does not meet the exceptions for RACT requirements, is required to obtain a construction permit prior to constructing or installing equipment. If a proposed modification will increase the actual emissions from the shop to exceed the limits for exemption from permitting or exceed the limits for RACT requirements, the shop will need to get an air construction permit. You should start by performing an inventory of emission sources in your shop to make the determination of the shops potential to emit air pollutants.

For new print shops, start by listing all products (inks, coatings, adhesives, fountain solution additives and press cleaning solutions, etc.) you plan to use in your shop. The manufacturer of the equipment you are purchasing can assist you in these determinations.

For existing shops, estimate the quantity of each product used for the past 12 months from MSDS sheets in your purchasing records. If you intend to modify or install equipment, estimate product usage based on a similar operation in your shop or use a worse case scenario according to projected production utilization provided by the new equipment manufacturer. VOCs and HAPs are the pollutants of primary concern when determining major source applicability at a printing facility. These two pollutants are two separate categories but, some VOCs are HAPs and vice versa.

VOCs that are not photochemically reactive (do not contribute to ozone) are not considered for VOCs emission calculations but may be included in the HAP determination. For example, methylene chloride (dichloromethane) is not used for the VOC emissions determination but is used for the HAP determination. Use the VOC and HAP calculation worksheets in section 3 to calculate emissions from the entire shop. With this inventory, you can now compare your emissions data with the following emission limits.

NOTE: Limits are different based on:

1. the HAP emissions from an individual press and the total HAPs from your shop; and
2. Where your shop is located.

You Need to Get a Construction Permit if:

		The potential shop emissions exceed the following:
For Print Shops in an Attainment Area		1.0 ton (2,000 pounds) per year or more of any hazardous air pollutant 2.5 tons (5,000 pounds) per year or more of total hazardous air pollutants 10 tons (20,000 pounds) per year of VOC and PM
For Print Shops in a Nonattainment or Air Quality Maintenance Area (Orange, Duval, Broward, Dade, and Palm Beach, Hillsborough and Pinellas Counties).		1.0 ton (2,000 pounds) per year or more of any hazardous air pollutant 2.5 tons (5,000 pounds) per year or more of total hazardous air pollutants 10 tons (20,000 pounds) per year of PM VOCs at a rate greater than 15 pounds in any day VOCs at a rate greater than 3 pounds in any hour

If a DEP construction permit is required for a new facility or a modification of an existing facility, you must also:

Notify the public through a Public Notice in a newspaper of general circulation in the area where you are installing new or modifying existing equipment.

Submit a DEP Form 62-210.900(1), Application for Air Permit, summarizing the proposed equipment installation/modification or operational changes.

If it is determined that an existing shop, which has never had a permit and is not a Title V source, needs an air permit the Department may require the owner or operator to apply for both an air construction permit and an air operation permit. The owner or operator may be required to provide a summary of past and present compliance with air pollution requirements.

Important Note

Florida rules **do not provide** for the use of emission factors for the determination of emissions, either potential or actual. There are rules that specifically state that emission factors may not be used in the determination of actuals. An emission factor may be approved by the engineer who will sign and seal the permit if that engineer has determined the emission factor is adequately supported by test data that demonstrates using the emissions factor will result in a correct determination of emissions.

2.6.5 What if I'm Not Sure My New or Modified Equipment Needs a Construction Permit?

You can request a pre-application meeting with the Department of Environmental Protection or local air pollution control agency to which the Department has delegated permitting authority. You may also contact the Small Business Assistance Program (SBAP) by calling 1-800-SBAP-HLP (1-800-722-7457). The SBAP has responsibility to assist small business in determining the applicable permitting requirements, in disseminating information concerning compliance methods and technologies, and providing information regarding pollution prevention (P^2) and accidental release detection and prevention.

2.6.6 What if I Don't Need a Construction Permit?

If you do not need a construction permit because the emissions from your shop are below the thresholds listed above, you might consider:

- ✓ Give a written notice to DEP 30 days prior to constructing.
- ✓ State in the notice that you will remain exempt from permitting by limiting the potential emissions from your shop to less than the thresholds which would require a construction permit.

2.6.7 Do I Need an Operating Permit?

You must obtain a permit before operating newly installed or modified equipment, such as a press. A permit includes conditions and limits on press or equipment operations to restrict VOC, HAP, and other pollutant emissions. There are thresholds for determining whether you need an operating permit. It is possible to add or modify a new press or other equipment without obtaining a permit, if the emissions are below the thresholds discussed below.

Even if you operate what is called a "grandfathered" press (one installed before September 1971), you must now obtain an operating permit, if you have not obtained one already and are not exempt from permitting.

IMPORTANT

You must get a construction permit, if applicable, before you install a new or modify existing equipment, like a press. An operating permit may be required before you operate the same equipment. You must review the operating permit emission limits carefully. These may be based on Actual Emissions and Potential Emissions (see previous important definitions), whereas the construction permit emission limits may only be based on Potential Emissions. If you need guidance, check DEP's website (www.dep.state.fl.us/) or DEP's Division of Air Resource Management website (www2.dep.state.fl.us/air/enhanced/) or call SBAP at 1-800-722-7457.

You Need To Get an Air Operating Permit if:

		The potential shop emissions exceed the following:
For Print Shops in an Attainment Area		1.0 ton (2,000 pounds) per year or more of any hazardous air pollutant 2.5 tons (5,000 pounds) per year or more of total hazardous air pollutants 10 tons (20,000 pounds) per year of VOC and PM

You Need To Get An Air Operating Permit if:

		The potential shop emissions exceed the following:
For Print Shops in a Nonattainment or Air Quality Maintenance Area (Orange, Duval, Broward, Dade, Palm Beach , Hillsborough and Pinellas Counties).		1.0 ton (2,000 pounds) per year or more of any hazardous air pollutant 2.5 tons (5,000 pounds) per year or more of total hazardous air pollutants 10 tons (20,000 pounds) per year of PM VOCs at a rate greater than 15 pounds in any day VOCs at a rate greater than 3 pounds in any hour

More on Air Operating Permits

There are two other types of air operating permits based on your Potential/Actual Emissions.

1. Synthetic Minor Operating Permit
2. Title V Operating Permit

If you have a small print shop with one or two small presses, you will not likely have to obtain an operating permit, if the emissions are below the thresholds to be exempted from permitting. Midsize and large printers generally need an operating permit. As a general rule of thumb, if you, as a sheetfed or nonheatset web offset lithographic printer, can potentially use more than 250 gallons of press cleaning solvents and fountain solution per year, you need to calculate your VOC emissions to determine the need for an operating permit.

2.6.8 What is a Synthetic Minor Operating Permit?

Synthetic minor operating permits are for air pollution sources that could be a major source of air pollutants because its potential emissions exceed the Title V thresholds, but its actual emissions are below the thresholds. These printers choose to accept a permit with federally enforceable conditions that will restrict their emissions to keep them from being subject to the Title V Permit Program.

Important

One type of permit that has not been discussed is a "General Air Permit". DEP is currently drafting rules to address a "General Air Permit" for printers.

2.6.9 Title V Permits

Large sources of air emissions, called "major sources", must obtain a federally enforceable Title V operating permit. A Title V permit includes all emissions sources in your shop, such as presses, coating and binding operations, boilers, emergency generators and storage tanks. Only the largest printers generally need to obtain a Title V permit.

If the Potential Emissions from your entire shop are equal to or exceed any of the Potential to Emit levels in Table 1 and 2, you must apply for a Title V Permit.

If there are pollution prevention opportunities that you can implement in your shop to reduce emissions and obtain a synthetic minor operating permit, you should make every effort to do so.

The Title V application and approval process is more involved than other air operating permits. If you are a member of the Printing Association of Florida (PAF), you may want to seek their advice at 1-407-240-8009 or contact the SBAP at 1-800-722-7457.

Major Source VOC & HAP Thresholds for Title V Permits (Table 1)

		Statewide (including Air Quality Maintenance Areas)	
Type of Printing	**Pollutant**	**Potential to Emit**	**Material Usage**
All	VOC	100 tons per year or more	
All	Single HAP	10 tons per year or more	
All	Total HAPs	25 tons per year or more	

Other Major Source Regulated Pollutant Thresholds for Title V Permits (Table 2)

	Statewide (including Air Quality Maintenance Areas)
Pollutant	**Potential to Emit**
Carbon Monoxide (CO)	100 tons per year or more
Nitrogen Oxides (NO_X)	100 tons per year or more
Sulfur Dioxide (SO_X)	100 tons per year or more
Particulate Matter (PM)	100 tons per year or more

2.6.10 Print Shop Emission Statements

Some printers are required to submit their previous year's total air emissions in an Annual Operating Report (AOR) by March 1 of each year. The AOR is submitted through a reporting system called the Air Resources Management System (ARMS). The annual reports serve the following purpose:

1. Allow DEP to track emissions and maintain an accurate state inventory of emissions.
2. Demonstrate that a printer is in compliance with its permit.
3. Document emission reductions that can be used to offset future growth.

2.6.11 Do I have to Submit an AOR?

You must submit an AOR if your shop:

1. Has a Title V Operating Permit.
2. Has a Synthetic Minor Operating Permit.
3. Has the potential to emit ten (10) tons per year or more of volatile organic compounds (VOC) or twenty-five (25) tons per year or more of nitrogen oxides (NO_X) and located in an ozone non-attainment area or ozone air quality maintenance area.
4. is required by state rule or permit to submit an AOR.

Do I Need a Construction Permit for my Boiler?

You may have to obtain a permit for combustion units, such as boilers and hot water heaters subject to the following:

(A) If all of the boilers and hot water heaters in a single print shop, collectively have a total rated heat input equaling 10 million BTU per hour or less, and are fired exclusively by natural gas or propane, you do not need a permit (construction or operating) if during periods of natural gas curtailment, only propane or fuel oil containing no more than 1.0 percent by weight of sulfur is fired.

(B) If all of the boilers and hot water heaters in a single shop; collectively having a total heat input equaling 100 million BTU per hour or less; and collectively burning annually no more than 145,000 gallons of fuel oil containing no more than 1.0 percent by weight of sulfur, or no more than 290,000 gallons of fuel oil containing no more than 0.5 percent by weight of sulfur, or an equivalent prorated amount if multiple fuels are used, you do not need a permit if:

1. Construction on the boilers and hot water heaters was started on or before June 9, 1989; and
2. The boilers and hot water heaters have not been modified or reconstructed since June 9, 1989

(C) If any individual boiler and hot water heater with a rated heat input equaling 100 million BTU per hour or less and burning annually no more than 150 million standard cubic feet of natural gas or propane or no more than one million gallons of fuel oil containing no more than 0.05 percent by weight of sulfur, or an equivalent prorated amount if multiple fuels are used, no permits are necessary if:

1. The total annual fuel consumption for all the boilers and hot water heaters that don't need permits, because they are described by this part C and part A above, at your shop does not exceed 375 million standard cubic feet of natural gas or propane or 2.5 million gallons of fuel oil containing no more than 0.05 percent by weight of sulfur, or an equivalent prorated amount if multiple fuels are fired;
2. Construction was started on the unit on or before June 9, 1989; and
3. The boiler or hot water heater has not been modified or reconstructed since June 9, 1989.

2.6.13 Do I Need a Construction Permit for my Emergency Generator?

A permit (construction and operating) is not required for one or more emergency generators located within a single shop if the total fuel consumption by all the emergency generators at the shop is limited to 32,000 gallons per year of diesel fuel, 4,000 gallons per year of gasoline, 4.4 million standard cubic feet per year of natural gas or propane, or and equivalent prorated amount if multiple fuels are used.

Contact your local permitting authority to obtain a construction or operation permit, if necessary, for large generators. You may also call the Small Business Assistance Program at 1-800-722-7457 for information.

2.6.14 Do I Need a Risk Management Plan?

Section 112(r) of the Clean Air Act requires some large printers to prepare a Risk Management Plan to prevent the accidental release of toxic chemicals. It should be noted that all printers, regardless of size, are subject to the general duty clause under CAA 112(r). The CAA general duty clause directs owners

and operators of stationary sources to identify hazards that may result from accidental releases, to design and maintain a safe facility, and to minimize the consequences of releases when they occur.

Important

Some local Air Permitting Authorities may have more stringent permitting requirements. When these exist they will be made available to the printers that will be subject to those rules. If you have questions, call your local permitting authority or SBAP.

2.6 SPILLS AND REPORTING

2.6.1 What do I do if I have a spill?

If you have a spill at your facility, the following actions are recommended:

1. Evacuate the immediate area of personnel
2. Shut down or disconnect equipment that may cause a spark or fire
3. Secure the area with tape or barricades
4. Identify the hazardous materials without being exposed to the material
5. Utilize trained personnel with appropriate personnel protective equipment (respirator, gloves, chemical suit, etc.) to contain and clean up the spill
6. Try to segregate reusable and waste materials. Place waste into approved DOT containers. Label the containers with contents.
7. Document cleanup effort
8. If soil or water contamination is noted, determine the quantity of material lost and contact the FDEP and EPA as required above.
9. If the spill response exceeds in-house capabilities, contact the City/County emergency agency (fire department) or a private emergency response contractor.
10. Ensure proper federal, state and local government agencies are notified in accordance with the following paragraphs.

2.6.2 Hazardous Materials (OSHA)

Requires that a spill of hazardous materials be controlled and cleaned up promptly. Employees responding to hazardous material spills must receive specific training in the emergency procedures and equipment that apply to the response tasks. ",. *Hazardous materials are defined as any material that is required to have an MSDS by OSHA.* Examples of hazardous materials: gasoline, oil, diesel fuel, mineral spirits, etc.

2.6.3 Hazardous Substances (SERC - State Emergency Response Center)

Emergency release notification is required by any facility where there is a release of a reportable quantity (RQ) of any Extremely Hazardous Substance (EHS) or a reportable quantity (RQ) of a Comprehensive Environmental Response Compensation and Liability Act (CERCLA) hazardous substance that results in exposure to persons or property outside the boundaries of the facility. The release notification must be submitted to the Florida State Warning Point (1-800-320-0519 or 1-850-413-9911), LEPC, SERC and the National Response Center (NRC) (1-800-424-8802) within 24 hours of the release.

✓ **Examples of CERCLA Reportable Quantities:**

CERCLA Hazardous Substance	Reportable Quantity
Anti-freeze (Ethylene Glycol)	5,000 lbs.
Ignitable Hazardous Waste (D001)	100 lbs.
Corrosive Hazardous Waste (D002)	100 lbs.

2.6.4 Reporting Emergency Releases or Spills ONLY:

National Response Center
(800) 424-8802

Florida State Warning Point
(850) 413-9911
(800) 320-0519

Additional Information on Reporting Spills and Releases

The following table provides additional guidance for reporting hazardous material releases. This is only a guide and does not cover all Federal-reporting requirements. Facility operators are reminded to review this table and regulations before a release occurs.

INCIDENT	REPORT TO/BY	REPORTING	STATUTE	REGULATIONS
Hazardous substance release (Equal to or greater than RQ)	National Response Center (NRC) 800-424-8802 by person in charge of vessel or facility	Within fifteen minutes Follow-up not required	Comprehensive Environmental, Response, Compensation, and Liability Act (CERCLA)	40 CFR 302.6(a)
Release of EPCRA/ SARA extremely hazardous substance (EHS) or CERCLA hazardous substance equal to or greater than RQ	LEPC, SERC, or local emergency response personnel (911 in case of transportation related release) by owner/operator	Within fifteen minutes Follow-up required within seven calendar days	Emergency Planning and Community Right-to-Know Act (EPCRA)	40 CFR 355.40
Release, fire, or facility explosion that threatens health outside the facility	NRC 800-424-8802 / state/ local /EPA Regional Administrator by emergency coordinator or owner/operator	Within 24 hours Follow-up: varies from 5 to 30 days report to NRC 800-424-8802 /EPA Regional Administrator	Hazardous Waste (RCRA)	40 CFR 262.34, 263.30, 264.56 264.196, 265.56, 265.196, 270.14, 270.30, 273.17, 273.37, 273.54, 279.43 279.53, 280.50, 280.52, 279.53, 280.60, 280.61

2.6.5 Release of Oil to Water (Lakes, Streams, etc.)

The National Response Center (NRC) must be notified of discharges of oil affecting U.S. waters in accordance with the regulations issued under the Federal Water Pollution Control Act or Clean Water Act. These regulations require NRC notification of a discharge of oil which:

1. Causes a sheen to appear on the surface of the water;
2. Violates applicable water quality standards; or
3. Causes a sludge or an emulsion to be deposited beneath the surface of the water or upon the adjoining shoreline.

✓ **When in doubt, call the NRC @ 1-800-424-8802**

2.6.6 Release of Petroleum Products to Paved or Unpaved Areas

If petroleum or petroleum related products are released to the environment in excess of 25 gallons on pervious surfaces (grass/soil), you must notify the FDEP using the Discharge Report Form (62-761.900(1)). The discharge must be reported within one week of discovery. Call the Tanks Program in your local DEP District office (Appendix D) to get the form and/or more information.

NOTES:

1. County and City Ordinance may require additional reporting notifications. You should contact your City/County Environmental Department to identify the reporting requirements prior to the potential of a spill to occur.
2. If hazardous materials are discharged to a City/County storm water or sanitary sewer, you should contact the applicable City/County environmental department and the FDEP immediately.

Other Notifications

2.6.7 Workplace Accidents OSHA

You must report any work site incident involving one or more fatalities or three (3) or more hospitalizations.. The report must be conveyed within eight (8) hours of the occurrence to the nearest US Department of labor, OSHA Area Director 1-800-321-OSHA (6742).

2.6.8 Hazardous Chemical Inventory Reporting (Section 312)

Facilities subject to the MSDS requirements under section 311 of EPCRA are also required to submit hazardous chemical inventory forms (Tier I and Tier II forms) to the LEPC, SERC, and the local fire department by March 1st following the reporting year.

2.6.9 Material Safety Data Sheet (MSDS) Reporting Requirements

The owner or operator of any facility that is required to have a MSDS for a hazardous chemical (Extremely Hazardous Substance or EHS) under OSHA 29 CFR 1910.1200, must submit the MSDS to the appropriate LEPC, SERC and the local fire department if the chemical is present at the facility in quantities greater than either:

1. 500 pounds or the Threshold Planning Quantity (TPQ)
2. 10,000 pounds of a "Hazardous Material",. Hazardous materials are defined as any material that is required to have an MSDS by OSHA. Examples of hazardous materials: gasoline, oil, diesel fuel, mineral spirits, etc. You should review your facility for hazardous material storage containers or tanks that can hold greater than 1,000 gallons.

2.7 HEALTH & SAFETY (OSHA)

2.7.1 Hazard Communications Training

1. Provide training for employees potentially exposed to hazards. Training program must be written, describe the hazard communication standard, communicate hazard characteristics or constituents; availability of Material Safety Data Sheets (MSDS's), define routes of entry/exposure for each hazard, discuss signs of exposure, procedures for preventing and controlling exposures, describe use of protective equipment, use/availability of engineering controls, and procedures for responding to each exposure.
2. Assure that all containers are labeled with the chemical's trade name, it's hazard (flammable, irritant, etc.), and target organ effected.

2.7.2 Fire Prevention and Egress

Document and provide employee training on the availability and use of fire extinguishers, alarm systems, automatic fire suppression system, and describe safety procedures, responsibilities, and means of egress during fire emergencies. Fire extinguishers should be inspected monthly.

2.7.3 Medical Services and First Aid

In the absence of an infirmary, clinic, or hospital in near proximity to the workplace, a person or persons shall be trained in First Aid. If First Aid trained employees are required, then Blood Born Pathogen training is needed.

NOTE: You must report any work site incident involving one or more fatalities or three (3) or more hospitalizations.. The report must be conveyed within eight (8) hours of the occurrence to the nearest US Department of labor, OSHA Area Director 1-800-321-OSHA (6742).

2.7.4 Respiratory Protection Program (where respirators are used or required)

1. Provide respirators in areas where engineering controls do not protect the health of employees, maintain a respiratory protection program, and require employees use respirators where appropriate. A respiratory protection program must include training for respirator users on selection, use, maintenance and limitations of respirators. The program must be regularly evaluated to determine its effectiveness.
2. All respirators must be inspected, repaired and cleaned at least monthly, or after each use.
3. Consult a local physician to determine which employees are physically able to use the equipment.

2.7.5 Protective Equipment

1. Require and train personnel on eye protection where appropriate (check MSDS for detail).
2. Require and train personnel on face shield protection for operations involving welding, cutting, grinding or use of abrasive wheels, hand-tools, etc.
3. Require and train personnel on approved protective clothing (aprons, suits, etc.), gloves, and shields where an employee may be exposed to cuts, bums, skin irritants, caustics or skin absorbed toxins. Make available and require the use of approved respirators in cases of emergency or regular use (check MSDS for detail).
4. Train personnel to maintain protective equipment in sanitary condition which includes inspect and cleaning at regular intervals.

5. Make dual eye flush, and in some cases body showers, available in areas where injurious or corrosive compounds are used (check MSDS for detail). Train personnel on emergency eye wash/shower use and location.

2.7.6 Miscellaneous

1. Designate eating and drinking areas separate from areas of potential exposure.
2. Train and provide noise protection or engineering controls where 85 db/8hr (time weight average) is surpassed.
3. Provide and train personnel on approved protective equipment and require its use for small/minor (less than one gallon or normal use) cleaning spills and leaks of toxic and hazardous chemicals, materials, and liquids: If personnel will be cleaning large spills, they must be trained in an extensive course for hazard assessment, spill equipment limitation, containment techniques, decontamination, etc.

2.7.7 Hand Tools and Equipment

1. Use only hand tools that are UL approved and in good condition. Train personnel of proper use, cleaning and storage of tools as to maintain proper working condition.
2. Protective equipment such as safety glasses, shields, etc. must be worn if tool may produce flying materials or be subject to breakage. Inform employees of the hazards of faulty or improper use of tools.

2.7.8 Abrasive Wheel Equipment - Grinders

1. Inform employees of proper use of abrasive wheels or grinders. Note: they must be permanently mounted, grounded with metallic conduit wiring, have adequate adjusted work rests and tongue, individual on and off switches, have ample side guards, and splash guards, as well as dust collection, if necessary.
2. Use of protective goggles or face shield is required.

2.7.9 Machine Guarding

1. Training in the safe operation of each machine is required (see manufacturer manual).
2. All machinery must be inspected regularly for safe operation.
3. Operator must be able to reach all controls from point of operation and be protected from hazards in that position.
4. Machines should not be able to start-up automatically in power-outage situations and low-level current surges should not be able to start-up machine.

2.7.10 Lock-out/Tag-out Procedures

Employees undertaking lock-out/tag-out procedures of equipment must be trained in lock-out/tag-out procedures and be identifiable by lock, key or tag tracking mechanisms while undertaking a procedure.

2.7.11 Spraying Operations

All operators must be trained in the proper use of respirators and should wear respirators and protective clothing whenever exposure standards could be surpassed. Use of respirators requires the development of a respiratory protection program.

2.7.12 Environmental Controls

1. All employees must be aware of environmental hazards, trained to identify signs of exposure and over-exposure, understand how to choose and use protective equipment, and what to do in emergency or first aid situations. All must be provided in written form as well.
2. Employers should assess employee exposure to any environmental hazard, including: welding fumes, abrasive or other respirable dust, asbestos, carbon monoxide, paints, especially epoxies, other solvents, caustics and noise to determine appropriate training, proper protective equipment and necessary engineering controls to limit exposure.

2.7.13 Product Storage (OSHA)

1. Flammable liquids such as gasoline, thinners, paints, mineral spirits shall be stored in covered approved containers with appropriate labels.
2. It is recommended that all flammable materials be stored away from incompatible materials such as oxidizers, acids and caustics.
3. No more than 25 gallons of class IA liquids, flash point less than 73F, such as gasoline, thinners, etc., can be stored outside a storage cabinet or fire area (work area)
4. When dispensing low flash point materials such as solvents and gasoline, bonding straps shall be utilized between the two containers. Additionally, one of the containers should be grounded.
5. The quantity of flammable or combustible liquids kept near spraying operations shall be the minimum required for operations and should ordinarily not exceed a supply for 1 day or one shift.
6. All containers that contain hazardous materials shall be labeled with its contents and potential hazards. The label should clearly identify the product name, potential hazards and target organs of exposure.

2.7.14 Inspections

You should periodically inspect all facility operations to see that OSHA requirements are being met. The following table is a partial list of equipment has inspection requirements:

Program	Inspection Component	OSHA Reference
Abrasive Wheel	Wheel spindle speed before mounting new wheel	1910.215
Electrical	GFI, Extension Cords, Reenergizing equipment before use	1910. 304, .333, .334, .335
Fire Alarm Signaling Systems	All systems periodic	1910.37, .165
Fire Extinguishers	Visual monthly, maintenance annually	1910.157
Forklifts	Brakes, alarms, battery before Use	1910.178
Ladders	Wooden ladder frequently, metal ladders exposed to oil and grease-immediately, all fixed ladders regularly	1910.25, .26, 27
Lockout/Tagout	Energy control procedures annually, Verification that energy is isolated and deenergized prior to start of work	1910.147
Personal Protective Equipment	Equipment before use	1910.132, .133, .135, .136 and .138
Respirators	Before use and monthly	1910.134

2.7.15 Preventing OSHA Fines

OSHA, the Occupational Health and Safety Administration, is the federal agency charged with enforcing violation of worker safety issues. The four primary reasons an OSHA inspector will come to your plant are:

1. A current or former employee reports a safety concern (OSHA keeps all reports confidential and will not divulge the name of the person who made the report).
2. A neighbor has called OSHA to report a suspected violation;
3. A competitor reports a suspected violation at your plant;
4. OSHA makes a random inspection of your company.

Printers are most commonly being cited for the following violations.

1. No Hazard Communication Plan or training.
2. Machine guards are missing.
3. No lockout/tagout plan or training.
4. Food and drinks in hazardous chemical areas.
5. No emergency evacuation plan.
6. No fire extinguisher training.
7. Exit lights are out or non-existent.
8. Exit doors are blocked
9. Electrical panels and/or fire extinguishers are inaccessible
10. Untrained employees driving forklifts.
11. Unlabeled bottles by equipment.
12. Poor/No record keeping.

In addition, printers are being cited for lack of OSHA forms 200 and 101, no written Safety Equipment Plan and training, and failing to enforce mandatory safety equipment, including ear, eye and glove protection, as well as a respirator when required. The Printing Association of Florida provides plant evaluations designed to evaluate compliance with OSHA regulations.

For information OSHA regulations, call your Regional PAF Office:

Central/Northeast Region: Orlando/Jacksonville/Tampa
(407) 290-5801/(800) 331-0461

Southern Region: Dade/Broward/Palm Beach
(305) 558-4855 • (305) 764-8808 (Broward) • (800) 749-4855 (Elsewhere)

Northern Region: Tallahassee
(904) 681-9237

AIR / HAZARDOUS WASTE / EPRCA REPORTING DETERMINATIONS (1/15/99)

The following worksheets are provided to assist you in determining your VOC and HAP air pollution emissions, hazardous waste identification and Emergency Planning and Community Right-To-Know Act (EPCRA) reporting requirements. The Worksheets are organized to make the assembly of the necessary information and data from purchasing/use records and Material Safety Data Sheets (MSDSs) as easy as possible. They are designed to enable you to collect data simultaneously for all three critical regulatory compliance requirements, instead of having to gather and process the data separately.

Step 1: Assemble list of products currently used, along with purchase records and Material Safety Data Sheets (MSDSs).

Be sure and include

- Blanket wash/roller wash/press wash/type wash
- Parts cleaner (solvent)
- Inks
- Varnishes
- Coatings
- Cleaning solvents, including screen reclamation chemicals
- Adhesives
- Alcohol or alcohol substitutes (including fountain solution concentrate)
- Proofing system solutions (if alcohol or solvent based)
- Any other VOC/HAP -containing products you use (in excess of 25 gal/product/year), such as film cleaner

Step 2: Complete Worksheet No. 1

The data required for Columns A, B, and C is general information that can be obtained from either purchase/use records or your supplier. It may be necessary to contact the supplier for additional information. The data required for columns D and E is for reporting requirements associated with the Emergency Planning and Community Right-To-Know Act. Columns F and G are used to determine if an air pollution permit is required. Columns H, I and J are used to identify hazardous wastes and monthly generation amounts which will govern generator classification.

From purchase records or Material Safety Data Sheets (MSDSs), enter the following data:

Col. A: Enter product name.

Col. B: Date MSDS was issued (usually near either beginning or at end of MSDS). If more than 2 years old, you should request current copy.

Col. C: Enter total gallons purchased or used in a 12-month period. For inks, coatings, adhesives and other materials purchased by weight, enter pounds (lbs.) used. To make the calculations easier, the annual purchase amount can be used. However, if the calculations indicate that you exceed a threshold, then it is advised to “sharpen your pencil” by adding the beginning inventory to the yearly purchase amount and subtracting the ending inventory and any waste shipped off-site.

Col. D: If Section II (Hazardous Ingredients) has a note indicating the product is subject to EPCRA Title III or Section 313, reporting, enter "yes". Otherwise, enter "no". *NOTE: Some vendors provide this information in a separate letter instead of the MSDS. To be certain, compare ingredients with list of Chemicals subject to Form R or Section 313 Reporting on EPA’s “List of Lists”, a consolidated list of chemicals subject to reporting under the Emergency Planning and Community Right-To Know Act (EPCRA).*

Col. E: If Section II (Hazardous Ingredients) has a note indicating the product contains an Extremely Hazardous Substance, enter "yes". Otherwise, enter "no". *NOTE: Some vendors provide this information in a separate letter instead of the MSDS. To be certain, compare ingredients with EPA's "List of Lists".*

Col. F: From Section III (Physical and Chemical Properties), enter value for "VOC content" in lbs. per gal. Ideally, the results should be based on a "Method 24" test. Do not include exempt VOCs such as Methylene Chloride, 1,1,1 Trichloroethane, Methyl Acetate or Acetone. For ink VOC content, you can determine the VOC emissions for each ink or use the highest VOC containing ink in each category (e.g., sheetfed, heatset, web, and nonheatset web).

If weight percent (%) of ingredients is given, these can be totaled and multiplied by the density of the material. The density can be determined by multiplying the specific gravity (found in Section III of the MSDS) by 8.33 lbs./gal.

If no value is given and/or can not be determined, contact your supplier and request the information.

Col. G: If Section II (Hazardous Ingredients) includes any of the following EPA designated Hazardous Air Pollutants (HAPS), enter "yes". If not, enter "no".

Cumene
Diethanolomine
**Ethylbenzene*
**Ethylene glycol*
Formaldehyde
n-Hexane
Hydrochloric acid
Isophorone
**Methanol*
Methyl Chloroform (1,1,1-trichloroethane)
**Methyl ethyl ketone (MEK)*
**Methyl isobutyl ketone (MIBK)*
**Methylene chloride*
Napthalene
Tetrachloroethene or Perchloroethylene
**Toluene*
1,1,2-Trichloroethane
Trichloroethylene (TCE)
**Xylene (all isomers & mixtures)*

HAP Compounds:
Chromium compounds
Glycol ethers
** Includes mono & di-ethers of ethylene glycol*

Col. H: From Section III (Physical and Chemical Properties), enter value given for "pH". If other note such as "nd" or "nc" is given, enter that value. If no value is given, enter "n/a". This information will be used in STEP 3 - Determining Hazardous Waste Codes.

Col. I: From Section IV (Fire and Explosion), enter the value given for "Flashpoint". If other note such as "nd" or "nc" is given, enter that value. If no value is given, enter "n/a". This information will be used in STEP 3 - Determining Hazardous Waste Codes.

Col. J: If Section II (Hazardous Ingredients) includes any of the following ingredients, enter name and % of composition for each. If not, enter "no"). This information will be used in STEP 3 - Determining Hazardous Waste Codes. *For a complete list of F-Listed Solvents, see APPENDIX A.*

F001
1,1,1 Trichloroethane

F002
Tetrachloroethylene
Trichloroethylene
Methylene chloride

F003
Xylene
Acetone
Ethyl benzene
Methyl isobutyl ketone (MIBK)
Cyclohexanone
Methanol

F004
None

F005
Toluene

WORKSHEET NO. 1 - DATA SUMMARY

Col. A	Col. B	Col. C	Col. D	Col. E	Col. F	Col. G	Col. H	Col. I	Col. J
Product Name Company (optional) Phone no. (optional)	MSDS Date Mo. / Yr.	Yearly Total Purchased (Gal. Or lbs.)	EPCRA 313 40 CFR 372 yes or no If yes, identify	Extremely Hazardous Substance yes or no If yes, identify	VOCs Lbs./gal. Or lbs./lb.	HAPs Yes or no If yes, identify	pH	Flashpoint (^{o}F)	F-listed Solvents Yes or no If yes, identify

Step 3 AIR: Complete the following Worksheet to determine if you need an Air Permit For VOC Emissions:

FOR VOCs:

a. From operating records, fill in annual hours of operation. Include those makeready hours where chemicals were used.

b. From Worksheet 1, fill In Columns A, D and E.

c. Multiply Column D X Column E to obtain value for VOCs per year and write the answer in Column F.

d. Divide Column F by 2000 (lbs./ton) to convert to tons per year and write answer in Column F3.

e. Total Column F3.

f. **If the total of F3 exceeds 10 tons per year, you need a state construction and operating permit**. Contact the Small Business Assistance Program at 1/800-722-7457 for additional information and assistance. If this value is less than 10, proceed to (i).

g. To determine your "Total Potential Emissions Per Year", divide the Total Hourly VOC Emissions All Products (Column F3) by your total hours of operation per year and multiply the result by 8,700 (total possible operating hours, based on operating 365 days and 24 hours per day).

_____	÷	_____	**X 8,700 =**	_____
Total VOC Emissions All Products – Col. F3		Total Annual Operating Hours		Total Potential Emissions Per Year

h. **If the value of Step i is greater than 10, you need a construction and/or operating permit.**

i. **If the value of Step i is greater than 100, you need a Title V permit.**

IMPORTANT NOTE:

Florida rules do not provide for the use of emission factors for the determination of emissions, either potential or actual. There are rules that specifically state that emission factors may not be used in the determination of actuals. An emission factor may be approved by the engineer who will sign and seal the permit if that engineer has determined the emission factor is adequately supported by test data that demonstrates using the emissions factor will result in a correct determination

of emissions.

VOC WORKSHEET NO. 2 - AIR PERMIT DETERMINATION

Actual Annual Hours of Operation _____

Col. A	Col. D		Col. E		Col. F				Col. F3
Product Name Company (optional) Phone no. (optional)	Yearly Usage (Gal. Or Lbs.)	X	VOC Content Lbs./Gal. Or Lbs./Lb.	=	VOCs Per year (Lbs.)	÷	2000 lbs. Per Ton	=	Total VOC Emissions (Tons Per Year)
		X		=		÷	2000	=	
		X		=		÷	2000	=	
		X		=		÷	2000	=	
		X		=		÷	2000	=	
		X		=		÷	2000	=	
		X		=		÷	2000	=	
		X		=		÷	2000	=	
		X		=		÷	2000	=	
		X		=		÷		=	
		X		=		÷		=	
TOTAL FOR ALL PRODUCTS					**----------**				**----------**

Step 4 AIR: Complete the following Worksheet to determine if you need an Air Permit For HAP Emissions:

FOR HAPs:

a. From operating records, fill in annual hours of operation. Include those makeready hours where chemicals were used.

b. From Worksheet 1, Fill In Columns A, B, and D.

Note: Since permit thresholds are based on both individual HAPs and all HAPs combined, it would be best to group by each individual HAP.

c. For Column E - From Section III (Physical and Chemical Properties), enter composition value for the chemical in lbs. per gal.

If only a composition percent is provided, then the lbs/gal value can be determined by multiplying the percent x the product's density. The density can be determined by multiplying the specific gravity (found in Section III of the MSDS) by 8.33 lbs./gal.

If weight percent (%) of ingredients is given, these can be totaled and multiplied by the density of the material. The density can be determined by multiplying the specific gravity (found in Section III of the MSDS) by 8.33 lbs./gal.

If no value is given and/or can not be determined, contact your supplier and request the information.

d. Multiply Column D X Column E to obtain value for HAPs consumed per year and write answer in Column F.

e. Divide Column F by 2000 (lbs./ton) to convert to tons per year and write answer in Column F3.

f. Total Column F3 for each individual HAP found in various products:

If the total value for each individual HAP is greater than 1, you need a state construction and/or operating permit. Contact the Small Business Assistance Program at 1/800-722-7457 for additional information and assistance.

If the value for each individual HAP is less than 1, proceed to (h).

If the total value for each individual HAP is greater than 10, you need a Title V permit. Contact the Small Business Assistance Program at 1/800-722-7457 for additional information and assistance.

If the value for each individual HAP is less than 10, proceed to (i).

g. Total Column F3 for all HAPs in all products:

If the value of Step h is greater than 2.5, you need a state construction and/or operating permit. Contact the Small Business Assistance Program at 1/800-722-7457 for additional information and assistance.

If the value for each individual HAP is less than 2.5, proceed to (h).

If the value of Step h is greater than 25, you need a Title V permit. Contact the Small Business Assistance Program at 1/800-722-7457 for additional information and assistance.

If the value of Step j is less than 25, proceed to (i).

h. To determine "Total Potential Emissions" per year for an individual HAP, divide the result of (f) by your total hours of operation per year and multiply the result by 8,700 (total possible operating hours, based on 365 days and 24 hours per day).

_____	÷	_____	**X 8,700**	=	_____
Total HAP Emissions For Each HAP		Total annual operating hours			Total Potential Emissions Per Year

If the total value for each individual HAP is greater than 1, you need a state construction and/or operating permit. Contact the Small Business Assistance Program at 1/800-722-7457 for additional information and assistance.

If the total value for each individual HAP is greater than 10, you need a Title V permit. Contact the Small Business Assistance Program at 1/800-722-7457 for additional information and assistance.

i. To determine your "Total Potential HAP Emissions" per year for all Haps combined, divide the Total for All Products (j) by your total hours of operation per year and multiply the result by 8,700 (total possible operating hours, based on 365 days and 24 hours per day).

_____	÷	_____	**X 8,700**	=	_____
Total HAP Emissions For All HAPs Combined		Total Annual Operating Hours			Total Potential Emissions Per Year

If the value of Step h is greater than 2.5, you need a state construction and/or operating permit. Contact the Small Business Assistance Program at 1/800-722-7457 for additional information and assistance.

If the value of Step h is greater than 25, you need a Title V permit. Contact the Small Business Assistance Program at 1/800-722-7457 for additional

information and assistance.

HAP WORKSHEET NO. 3 - AIR PERMIT DETERMINATION

Actual Annual Hours of Operation _____

Col. A	Col. B	Col. D		Col. E		Col. F				Col. F3
Product Name Company (optional) Phone no. (optional)	Name Of HAP	Yearly Usage (Gal. or Lbs.)	X	HAP Content Lbs./Gal. Or Lbs./Lb.	=	HAPs Per year (Lbs.)	÷	2000 lbs. Per Ton	=	**Total HAP Emissions (Tons Per Year)**
			X		=		÷	**2000**	=	
			X		=		÷	**2000**	=	
			X		=		÷	**2000**	=	
			X		=		÷	**2000**	=	
			X		=		÷	**2000**	=	
			X		=		÷	**2000**	=	
			X		=		÷	**2000**	=	
			X		=		÷	**2000**	=	
			X		=		÷	**2000**	=	
TOTAL FOR ALL PRODUCTS						**----------**				**----------**

Emission Factors - Use The Following Emission Factors For Column F1:

Emission Factors For Sheetfed and Nonheatset Web Offset Lithographic Printing Operations

Ink	0.05	Adhesives	1
Fountain Solution Concentrate	1	Coatings:	
Fountain Solution Additive	1	UV	1
Cleaning Solution	0.5**	Water-based	1
Automatic Blanket Wash	1	Conventional	0.05***

**** Conventional Offset Lithographic Inks Have A 95% VOC Retention Factor.***

***** Only If VOC Composite Vapor Pressure Of Cleaning Solution Is 10 mm Hg Or Less At 20 °C. (68 °F.) and Used Shop Towels Kept In Closed Containers.***

****** Conventional Varnish Is Virtually Identical To Conventional Offset Lithographic Inks.***

Emission Factors For Heatset Web Offset Lithographic Printing Operations Without Controls

Ink	0.8*		
Fountain Solution Concentrate	1	Coatings:	
Fountain Solution Additive	1	UV	1
Cleaning Solution	0.5**	Water-based	1
Automatic Blanket Wash	1	Conventional Before Dryer	0.8*
Adhesives	1	Conventional After Dryer	0.5***

**** 100% Capture efficiency Is Assumed If Airflow Into Dryer Is Demonstrated To Be Negative.***

***** Only If VOC Composite Vapor Pressure Of Cleaning Solution Is 10 mm Hg Or Less At 20 °C. (68 °F.) and Used Shop Towels Kept In Closed Containers.***

****** Conventional Varnish Is Virtually Identical To Conventional Offset Lithographic Inks.***

Emission Factors For Heatset Web Offset Lithographic Printing Operations With Controls

Destruction Efficiency (DE) _____ (Decimal Format – To Convert Divide Percent By 100)

Ink	1-(0.8 x DE)*	Coatings:	
Fountain Solution Conc	1-(0.7 x DE)**	UV	1
Fountain Solution Additive	1-(0.7 x DE)**	Water-based Before Dryer	1-(CE x DE)*****
Cleaning Solution	0.5***	Water-based After Dryer	1
Automatic Blanket Wash	1-(0.4 x DE)****	Conventional Before Dryer	1-(0.8 x DE)*
Adhesives Before Dryer	1-(CE xDE)*****	Conventional After Dryer	0.5******
Adhesives After Dryer	1		

**** 100% Capture Efficiency Is Assumed If Airflow Into Dryer Is Demonstrated To Be Negative.***

***** 70% Capture Efficiency For Alcohol Substitutes Is Assumed If Airflow Into Dryer Is Demonstrated To Be Negative.***
50% Capture Efficiency For Isopropyl Alcohol Is Assumed If Airflow Into Dryer Is Demonstrated To Be Negative.

****** Only If VOC Composite Vapor Pressure Of Cleaning Solution Is 10 mm Hg Or Less At 20 °C. (68 °F.) and Used Shop Towels Kept In Closed Containers.***

******* 40% Capture Efficiency For Automatic Blanket Wash Is Assumed If Airflow Into Dryer Is Demonstrated To Be Negative.***

***** *CE – Capture Efficiency Will Have Tp Be Measured, Otherwise Use 1.*

****** *Conventional Varnish Is Virtually Identical To Conventional Offset Lithographic Inks.*

Emission Factors For Screen Printing Operations

Ink	1	Coatings:	
Cleaning Solution	0.5*	UV	1
Adhesives	1	Water-based	1
		Solvent-based	1

* *Only If VOC Composite Vapor Pressure Of Cleaning Solution Is 10 mm Hg Or Less At 20 °C. (68 °F.) and Used Shop Towels Kept In Closed Containers.*

Emission Factors For Flexographic and Rotogravure Printing Operations Without Controls

Ink	1	Coatings:	
Diluents	1*	UV	1
Cleaning Solution	0.5**	Water-based	1
Adhesives	1	Solvent-based	1

* Diluents Includes Ink, Coating, and Adhesive Dilution Solvents.

** *Only If VOC Composite Vapor Pressure Of Cleaning Solution Is 10 mm Hg Or Less At 20 °C. (68 °F.) and Used Shop Towels Kept In Closed Containers.*

Emission Factors For Flexographic and Rotogravure Printing Operations With Controls

Destruction Efficiency (DE) _____ (Decimal Format – To Convert Divide Percent By 100)

Ink	1-(CE x DE)*	Coatings:	
Diluents	1-(CE x DE) **	UV	1
Cleaning Solution	0.5***	Water-based Before Dryer	1-(CE x DE)*****
Adhesives Before Dryer	1-(CE x DE)****	Water-based After Dryer	1
Adhesives After Dryer	1	Solvent Before Dryer	1-(CE x DE)*****
		Solvent After Dryer	1

* *CE – Capture Efficiency Will Have Tp Be Measured, Otherwise Use 1.*

** Diluents Includes Ink, Coating, and Adhesive Dilution Solvents.
CE – Capture Efficiency Will Have Tp Be Measured, Otherwise Use 1.

*** *Only If VOC Composite Vapor Pressure Of Cleaning Solution Is 10 mm Hg Or Less At 20 °C. (68 °F.) and Used Shop Towels Kept In Closed Containers.*

**** *CE – Capture Efficiency Will Have Tp Be Measured, Otherwise Use 1.*

***** *CE – Capture Efficiency Will Have To Be Measured, Otherwise Use 1*

CONGRATULATIONS!!! **- The Worst Is Over. The Hazardous Waste Worksheet Should Be A Breeze After This.**

Step 5: Hazardous Waste - Determine **CHARACTERISTIC** and **LISTED** Hazardous Wastes

a. If the value for "flashpoint" (Ignitability Characteristic) of any product (Col. I) is less than 140° F., enter "**D001**" (Ignitable) in Col. K (Haz Waste Codes). The wastes listed below are those that could be classified as ignitable:

1. Chemical products such as cleanup solvents including blanket and roller washes.
2. Isopropyl alcohol.
3. Solvent-based inks, coatings, and adhesives.
4. Shop towels being thrown away for disposal.

b. If the value for "pH" (Corrosive Characteristic) of any product (Col. H) is equal to or less than 2.0, ***OR*** is equal to or greater than 12.5, enter "**D002**" (Corrosive) in Col. K (Haz Waste Codes). The wastes listed below are those that could be classified as corrosive:

1. Plate and film processing chemicals, particularly etching chemicals.
2. Acids - Waste battery acid and alkaline cleaners, depending on their pH.

c. If the product reacts with water, air, heat or another chemical (not normally occurring in the printing industry), enter "**D003**" (Reactive) in Col. K.

d. If the product contain any of the following toxic constituents (Toxicity Characteristic), above the regulatory level, list the constituent and enter the appropriate waste code in Col. I. Toxicity is determined by laboratory test, Toxicity Characteristic Leaching Procedure (TCLP). Usually the vendor who takes your waste performs this test. The constituents below could be found in printing wastes (For a complete list of TC wastes, see Appendix C):

Possible EPA Toxicity Characteristic Contaminants Found In Printing Waste

Contaminant	Waste Code	Regulatory Threshold	Contaminant	Waste Code	Regulatory Threshold
Barium	D005	100.0 ppm	Methyl ethyl ketone	D035	200.0 ppm
Benzene	D018	0.5 ppm	Silver	D011	5.0 ppm
Chromium	D007	5.0 ppm	Trichloroethylene	D039	0.5 ppm
Carbon tetrachloride	D019	0.5 ppm	Vinyl chloride	D043	0.2 ppm

e. F-Listed Waste Codes: The F-listed wastes apply to those wastes that are considered used or spent. Understanding the F-listed category can be somewhat challenging as it can be confusing. If you entered "yes" in Col. I, indicating the product contains F-Listed Solvents, then recheck the MSDSs for the solvents listed below and enter the solvent name in Column J and its hazardous waste classification in Column K.

For categories F001, F002, F004 or F005: In order for a waste to be classified as F001, F002, F004, F005, it must contain a total of 10% or more by volume, of one or more of the chemicals in the category. For example, a waste solvent blend containing 10% methylene chloride and 90% water, would be classified as a F002 waste.

For the F003 category: In order for a waste to be classified as F003, it must either be 100% of any of the chemicals in the F003 category or contain

one of the chemicals in the category and 10% or more of any chemicals in F001, F002, F004, or F005 categories. Any waste chemical in the category originally used as a "technical grade" is also considered 100%. For example, a waste solvent blend containing 5% xylene, 15% methylene chloride, and 80% water would be classified as an F003 and F002 hazardous waste. Likewise, a waste solvent blend containing 15% xylene, 15% methylene chloride, and 70% water would also be classified as F002 and F003. However, a waste solvent blend containing 25% xylene, 5% methylene chloride, and 70% water would not be classified as an F-listed waste.

Below is the abbreviated list of F-Listed waste codes:

F001: The following spent halogenated solvents used in degreasing: tetracholorethylene, tricholorethylene, methylene chloride, 1,1,1-trichloroethane, and chlorinated fluorocarbons.

F002: The following spent halogenated solvents: tetracholorethylene, tricholorethylene, methylene chloride, 1, 1, 1-trichloroethane, chlorobenzene, 1, 1, 2-trichloro-1, 2, 2-triflouroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1, 1, 2-trichloroethane.

F003: T*he product must contain either 100% of the following (F003)* ignitable non-toxic solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol *or contain one of the following (F003) solvents plus 10% or more of any of the solvents in categories* F001, F002, F004 or F005.

F004: The following toxic non-halogenated solvents: aerosols, cresylic acid and nitrobenzene - not expected in printing products.

F005: The following spent non-halogenated solvents; toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane.

f. The U and P listed wastes are for those discarded, unused commercial chemical products that are either 100% pure, technical grade, or any formulation where the chemical is the active ingredient. K-listed wastes are those from specific industrial manufacturing processes such as lead chrome pigment manufacturing. Of the U, P, or K listed wastes, the only wastes that could be generated by printers are those on the U list. The following chart contains several chemicals that could be generated by a printer.

Possible U-Listed Wastes Found In Printing Waste

Name/Description	Waste Code	Name/Description	Waste Code
Acetone	U002	Methyl chloroform	U226
Benzene	U019	Methylene chloride	U080
Carbon tetrachloride	U211	Methyl ethyl ketone	U159
Chromium	D007	(MEK)	U161
Cumene	U055	Methyl isobutyl ketone	U210
Cyclohexane	U056	Tetrachloroethylene	
Dibutyl phthalate	U069	(perchloroethylene)	U220
Ethyl acetate	U112	Toluene	U223
Ethanol, 2-ethoxy	U359	Toluene diisocyanate	U228
Ethylene glycol monoethyl	U359	Trichloroethylene	U043
ether	U122	Vinyl chloride	U239
Formaldehyde	U154	Xylene	

Methanol			

WORKSHEET NO. 4 - CHARACTERISTIC & LISTED HAZARDOUS WASTE CODES

Col. A	Col. G	Col. H	Col. I	Col. J	Col. K
Product Name or Waste Company (optional) Phone no. (optional)	pH	Flashpoint (^{o}F)	F-list Solvents yes or no	Identify All F-listed Solvents In Product and Percent Composition	Identify All Appropriate Hazardous Waste Codes For All Wastes Listed In Column I

Step 6: Emergency Planning and Community Right-to-Know Reporting Requirements

There are three principal reporting requirements associated with the Emergency Planning Community Right-to-Know Act (EPCRA). There are two inventory reporting and one release reports that need to be submitted. The first inventory report involves submitting either a list of chemicals or a copy of the product's MSDS with the chemicals in them to the Local Emergency Planning Commission and fire department. The chemicals subject to this reporting are those classified as Extremely Hazardous Substances stored in quantities greater than the threshold planning quantity. This reporting requirement is a one-time event and only needs to be updated if the quantities stored at the facility change. The following are the most common Extremely Hazardous Substances that could be found in a printing operation (For a complete list, see the EPA's List of Lists*):

Extremely Hazardous Materials

Chemical	Where Found	CAS #	TPQ	RQ
Ammonia	Water-Based Inks and Coatings	7664-41-7	500 lbs	100 lbs
Formaldehyde	Some Film Developing Chemistry	50-00-0	500 lbs	100 lbs
Hydroquinone	Film Developing Chemistry	123-31-9	500 lbs	100 lbs
Nitric Acid	Component In Some Cleaners	7697-37-2	1000 lbs	1000 lbs
Phenol	Some Film & Plate Developing Chemistry	108-95-2	500 lbs	1000 lbs
Sulfuric Acid	Battery Acid	7664-93-9	1000 lbs	1000 lbs

The second inventory reporting requirement must be fulfilled annually by submitting an inventory reporting form every March 1 for those chemicals stored above the reporting threshold during the previous year. The form is commonly referred to as the Tier II form. The thresholds for reporting are 10,000 pounds for any chemical that requires a MSDS and 500 pounds or the threshold planning quantity (whichever is less) for Extremely Hazardous Substances.

The third reporting requirement, like the Tier II one, must also be fulfilled annually by submitting a release reporting form every July 1 for those chemicals on a special list used above the reporting threshold during the previous year. The form is commonly referred to as Section 313 or Form R. The thresholds for reporting are 25,000 pounds for any chemical that becomes part of the final product such as a pigment and 10,000 pounds for any chemical that does not become part of the final product such as cleaning solvents, ink solvents, or alcohol substitutes used in fountain solutions.

> **Shortcut to Compliance** – In order to avoid detailed calculations; there is one quick method that can be used to determine if any release reports under EPCRA need to be submitted. You simply need to examine the total purchase amount for the most common product(s) purchased during the course of the year. If no products were purchased totaling more than 10,000 pounds or a combination of products with the same ingredient or about 23 55-gallon drums (assuming 7.8 lbs./gal), then an inventory or release report is not required. Information on SARA Title III chemicals included in your products can be readily found on either the product's Material Safety Data Sheet or from an annual report issued by the manufacturer.

Inventory and Release Reporting

However, it may be necessary to actually calculate the actual amount of material either stored or released. In determining the actual amount, you are encouraged to not just use the amount of product purchased, inventoried, and used, but to break out each chemical's actual stored and use amount. To accomplish this, the following worksheets and instructions are provided.

a. From Worksheet 1, fill In Columns A, C, and E. Since this reporting requirement is based on the amount of material stored at any one time, then it is advised to examine the time period where the standing inventory would be increased by a purchased amount. This should result in the most accurate representation of the total amount of material stored at any one time through the course of the year.

b. For Col. L - From Section III (Physical and Chemical Properties), enter composition value for the chemical in lbs. per gal or weight percent.

If only a composition percent is provided, then the lbs/gal value can be determined by multiplying the percent x the product's density. The density can be determined by multiplying the specific gravity (found in Section III of the MSDS) by 8.33 lbs./gal.

If weight percent (%) of ingredients is given, these can be totaled and multiplied by the density of the material. The density can be determined by multiplying the specific gravity (found in Section III of the MSDS) by 8.33 lbs./gal.

If no value is given and/or can not be determined, contact your supplier and request the information.

c. If products are purchased in gallons, multiply Column C by Column L and write answer in Column N. The density can be determined by multiplying the specific gravity (found in Section III of the MSDS) by 8.33 lbs./gal.

If total quantity of each Product in Column C or Column N exceeds 10,000 Lbs., then a Tier II Report must be submitted March 1.

d. Multiply Column C X Column M to obtain use value for each Extremely Hazardous Substance used per year and write answer in Column O.
If total quantity of each Extremely Hazardous Substance ("YES" in Col. E) exceeds 500 Lbs, then a Tier II Report must be submitted March 1.

e. For Column P – Since EPCRA also requires the reporting of any spills or accidental releases traveling off the premises, it is advised to list the reportable quantity for each chemical. The reportable quantity can be found on the following list of common Section 313 chemicals found in printing. A more comprehensive list can be found in EPA's "List of Lists*", a consolidated list of chemicals subject to reporting under EPCRA.

WORKSHEET NO. 5 – EPCRA INVENTORY REPORTING REQUIREMENTS

Col. A	Col. C	Col. L	Col. E	Col. M	Col. N	Col. O	Col. P
Product Name Company (optional) Phone no. (optional)	Largest Yearly Total Purchased or Stored (Gal. Or Lbs.)	Density of Material (Lbs/Gal)	Extremely Hazardous Substance yes or no If yes, identify	Amount of Extremely Hazardous Substance (Lbs/Gal. Or Wt. Percent)	Total Quantity (Lbs)	Total EHS Quantity (Lbs)	Reportable Quantity (Lbs)

Release Reporting

a. From Worksheet 1, Fill In Columns A, C, and D. Since reporting thresholds are based on individual chemicals appearing on the EPCRA Section 313 list of reportable chemicals, it would be best to group by each chemical.

b. For Col. L - From Section III (Physical and Chemical Properties), enter composition value for the chemical in lbs. per gal.

If only a composition percent is provided, then the lbs/gal value can be determined by multiplying the percent x the product's density. The density can be determined by multiplying the specific gravity (found in Section III of the MSDS) by 8.33 lbs./gal.

If weight percent (%) of ingredients is given, these can be totaled and multiplied by the density of the material. The density can be determined by multiplying the specific gravity (found in Section III of the MSDS) by 8.33 lbs./gal.

If no value is given and/or can not be determined, contact your supplier and request the information.

c. Multiply Column C X Column Q to obtain use value for each chemical used per year and write answer in Column R.

If the total quantity of each chemical ("YES" in Column D) are subject to EPCRA Section 313 reporting if used in quantities exceeding:

1. 10,000 lbs. for any chemical not becoming part of the final product.
2. 25,000 lbs. for any chemical becoming part of the final product.

d. For Col. P – Since EPCRA also requires the reporting of any spills or accidental releases traveling off the premises, it is advised to list the reportable quantity for each chemical. The reportable quantity can be found on the following list of common Section 313 chemicals found in printing. A more comprehensive list can be found in EPA's "List of Lists*", a consolidated list of chemicals subject to reporting under EPCRA.

* EPA's "List of Lists" for EPCRA (EPA 550-B-96-015) can be obtained by phone or Internet – 800/490-9198, a dBASE version can be downloaded at http://www.epa.gov/swercepp/tools.html, or a .PDF version can be downloaded at http://www.epa.gov/swercepp/pubs.html.

WORKSHEET NO. 6 – EPCRA SECTION 313 RELEASE REPORTING REQUIREMENTS

Col. A	Col. C	Col. D	Col. Q	Col. R	Col. P
Product Name Company (optional) Phone no. (optional)	Yearly Total Purchased (Gal. Or Lbs.)	EPCRA 313 or 40 CFR 372 yes or no If yes, identify	Amount of EPCRA 313 Chemical (Lbs/Gal. Or Lbs.)	Total Quantity (Lbs)	Reportable Quantity (Lbs)

Chemical	Where Found	CAS #	RQ
Ammonia	Water-Based Inks and Coatings	7664-41-7	100 lbs
Barium*	Some Red Pigments	7440-39-3	N/A
Benzene (Including Benzene In Gasoline)	Trace Contaminant In Some Cleaning Solvents Namely, Aromatic Hydrocarbon Blends	71-43-2	10 lbs
n-Butyl alcohol	Flexo/Gravure Ink Solvent	71-36-3	5000 lbs
Cadmium & Compounds	Some Orange, Red, and Yellow Pigments	7440-43-9	10 lbs
Chromium (hexavalent) & Compounds	Film Cleaners, Some Fountain Solutions, Gravure Cylinder Preparation and Some Brown, Orange, and Red Pigments	7440-47-3	5000 lbs
Cobalt & Compounds	Sheetfed Offset Ink Catalyst For Drying	7440-48-4	N/A
Copper & Compounds	Some Blue and Green Pigments and Component In Some Water-Based Coatings	7440-50-8	5000 lbs
Cumene	Component In Some Cleaning Solvents Containing Aromatic Hydrocarbon Blends	98-82-8	5000 lbs
Cyclohexane	Component In Some Cleaning Solvents Component In Spray Adhesive	110-82-7	1000 lbs
Dibutyl Phthalate	Plastcizer In Some Inks and Coatings	84-74-2	10 lbs
Diethanolamine	Film Developer	111-42-2	100 lbs
Diethylene glycol dimethyl ether	Component In Some Cleaning Solvents Fountain Solution Additive – IPA Substitute	111-96-6	N/A
Diethylene glycol butyl ether	Component In Some Cleaning Solvents Fountain Solution Additive – IPA Substitute	112-34-5	N/A
Diethylene glycol ethyl ether	Component In Some Cleaning Solvents Fountain Solution Additive – IPA Substitute	111-90-0	N/A
Diethylene gycol methyl ether	Component In Some Cleaning Solvents Fountain Solution Additive – IPA Substitute	111-77-3	N/A
Ethyl benzene	Component In Some Cleaning Solvents Containing Aromatic Hydrocarbon Blends Flexo/Gravure Water & Solvent-Based Inks	100-41-4	1000 lbs
Ethylene glycol dimethyl ether	Component In Some Cleaning Solvents Fountain Solution Additive – IPA Substitute	110-71-4	N/A
Ethylene glycol butyl ether	Component In Some Cleaning Solvents Fountain Solution Additive – IPA Substitute	111-76-2	N/A
Ethylene glycol ethyl ether acetate	Component In Some Cleaning Solvents Fountain Solution Additive – IPA Substitute	110-80-5	N/A
Ethylene glycol methyl ether	Component In Some Cleaning Solvents Fountain Solution Additive – IPA Substitute	109-86-4	N/A
Ethylene glycol propyl ether	Component In Some Cleaning Solvents Fountain Solution Additive – IPA Substitute Some Water-Based Coatings	2807-30-9	N/A
Ethylene glycol	Fountain Solution Additive - IPA Substitute Component In Copper Plating Solution Flexo/Gravure Water & Solvent-Based Inks	107-21-1	5000 lbs
Formaldehyde	Some Film Developing Chemistry	50-00-0	100 lbs

Chemical	Where Found	CAS #	RQ
Glycol Ethers & Their Acetates	Component In Some Cleaning Solvents Fountain Solution Additive - IPA Substitute Flexo/Gravure Water & Solvent-Based Inks Litho Plate Developers Component In Glass Cleaner	xx-xx-x	
Hexane	Component In Some Cleaning Solvents Component In Film Cleaner Component In Spray Adhesive Flexo/Gravure Solvent-Based Inks	110-54-3	5000 lbs
Hydrochloric acid	Muratic Acid –Maintenance Area Component In Copper Plating Solution	7647-01-0	5000 lbs
Hydroquinone	Film Developing Chemistry	123-31-9	100 lbs
Isophrone	Screen Printing Ink Solvent	78-59-1	5000 lbs
Lead Chromate	Some Yellow Pigments	7758-97-6	N/A
Manganese & Compounds	Sheetfed Offset Ink Catalyst For Drying Some Red and White Pigments	7439-96-5	N/A
Methanol	Component In Some Cleaning Solvents Ink Jet Ink Solvent Component In Stay Open-Ink Drying Retardant Component In Compressed Propane Solvent In Some Adhesives Flexo/Gravure Solvent-Based Inks	67-56-1	5000 lbs
Methyl Chloroform - 1,1,1-Trichloroethane	Component In Stay Open-Ink Drying Retardant Solvent In Some Adhesives Component In Some Cleaning Solvents Component In Various Maintenance Products	71-55-6	1000 lbs
Methyl ethyl ketone	Component In Some Cleaning Solvents Ink Jet Ink Solvent Flexo/Gravure Solvent-Based Inks	78-93-3	5000 lbs
Methyl isobutyl ketone	Component In Some Cleaning Solvents	108-10-1	5000 lbs
Methylene chloride	Component In Some Cleaning Solvents Copper Plating Solution Component In Blanket Fix Component In Film Cleaner	75-09-2	1000 lbs
Naphthalene	Component In Some Cleaning Solvents Containing Aromatic Hydrocarbon Blends	91-20-3	100 lbs
Nitric Acid	Component In Some Cleaners	7697-37-2	1000 lbs
Phosphoric Acid	Component In Fountain Solution Concentrate Component In Some Cleaning Solutions	7664-38-2	5000 lbs
Perchloroethylene	Component In Film Cleaner Component In Some Lubricants Some Flexo Plate Developers	127-18-4	100 lbs
Propylene Oxide	Component In Some Inks	75-56-9	100 lbs
Phenol	Some Film & Plate Developing Chemistry	108-95-2	1000 lbs

Chemical	Where Found	CAS #	RQ
Sulfuric Acid	Battery Acid	7664-93-9	1000 lbs
Toluene	Component In Some Cleaning Solvents Publication Rotogravure Ink Solvent	108-88-3	1000 lbs
Toluene diisocyanates	Flexo/Gravure Water & Solvent-Based Inks	26471-62-5	100 lbs
Vinyl Acetate	Component In Some Adhesives	108-05-4	5000 lbs
Xylenes (isomers & mixture)	Component In Some Cleaning Solvents Component In Stay Open-Ink Drying Retardant Flexo/Gravure Ink Solvent	1330-20-7	100 lbs
Zinc & Compounds	Component In Water-Based Coatings Component In Some Lubricants Some White Pigments	7646-85-7	1000 lbs

APPENDICES INDEX

Please Note: Items listed in the Appendices are mostly Florida specific. Thus, we opted not to include herein. Copies can, however, be obtained by contacting the Florida Small Business Assistance Program. (800) 722-7457