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CHAPTER 1

INTRODUCTION

Mining for aggregate materials falls under the jurisdiction of numerous federal, state and local authorities. The primary purpose of this manual is twofold: 1) to inform those currently mining about their environmental responsibilities, and 2) to promote good stewardship of the land. The manual explains many of the regulations, provides an analysis of regulations, and provides key forms applicable to the aggregates industry. The appendices to the manual contain agency contact information, a glossary of key terms and commonly used acronyms, and a summary of permit information.

This manual is also intended to provide guidance for those starting a mining operation, or for someone considering a new site.

There are a number of steps the mine operator must take before mining starts. Once it has been determined that it is economically feasible to develop a mineral deposit, the first consideration is to see that the property is properly zoned. Rural zoning is normally under the jurisdiction of County or Township government, and the first contact should be with the County or Township Trustee's office. Mining is usually a conditional use under an industrial zoning classification. It is becoming more common for some zoning authorities to include a mining classification in their zoning ordinance.

Once the correct zoning has been established, there may be additional permits that must be obtained prior to any mining activities taking place. The Indiana Department of Natural Resources (DNR) administered a surface mining rule at one time. This rule was repealed in 1989. There is currently no comprehensive surface mining rule in Indiana. Specific types of construction and operation permits are required by different state and federal programs, such as air permits, water discharge permits, and Corps of Engineer permits, among others. Some counties require reclamation of mining sites (addressed in Chapter 2.) A summary table of required permits appears in Appendix C.

There are a number of permits that may be required for mining under the jurisdiction of the Corps of Engineers and the Department of Natural Resources (DNR). These would include stream relocation, stream crossing, and stream dredging, all of which are discussed in Chapter 3 and Chapter 5.

The Corps of Engineers is also the lead agency where wetlands are involved. Wetlands determination, and compliance with wetlands regulation, is covered separately in Chapter 4.

The Indiana Department of Environmental Management (IDEM) is the issuing agency for stormwater discharge and NPDES permits, which cover point source discharges of water. These permits are covered in more detail in Chapter 6.

Facilities wishing to withdraw water from the ground or surface water sources must register with the Indiana DNR. Temporary or permanent abandonment of wells is also regulated. These issues, and compliance issues under the Safe Drinking Water Act, are discussed in Chapter 7.

IDEM is the issuing agency for air permits. Chapter 8 contains air permitting information.

IDEM, along with the State Fire Marshal's office, regulates the operation and removal of underground storage tanks. Financial responsibility is also required for underground storage tanks. Depending on their contents, aboveground storage tanks may be regulated by the Indiana Fire Prevention Code and IDEM. These issues are covered in Chapter 9.

Chapter 10 includes a review of OSHA's Employee Right-To-Know standard, with a brief mention of the Mine Safety and Health Administration's standard.

Regulatory requirements for accidental release reporting and spill control are summarized in Chapter 11, and Chapter 12 provides an overview of the solid and hazardous waste laws that apply to the aggregate industry.

Chapter 13 contains a discussion of environmental auditing as a tool to assess and achieve compliance with environmental regulations.

Chapter 14 addresses the pollution prevention regulations and programs in place in Indiana.

Attachments at the end of each chapter contain forms and applications that may be required for compliance with regulations discussed in the chapter.

CHAPTER 2

COUNTY ORDINANCES GOVERNING MINERAL EXTRACTION AND RECLAMATION

INTRODUCTION

Reclamation in the mining industry is the process of creating a useful piece of land from a depleted surface mine. Reclamation involves filling excavated areas with clean fill material and revegetating the area to improve its appearance and drainage. Reclamation may also include the planned re-use of an excavated area for commercial, residential, industrial, public, semi-public, or other land uses.

All members of the Indiana Mineral Aggregates Association are strongly urged to voluntarily reclaim mined sites to a socially beneficial land use. Good husbandry of the land used for mining is critical to the development of new mines. There are positive benefits for a company to be a good community citizen and to show a community its commitment to the environment. Potential land uses after reclamation include recreation areas, wildlife habitat, pasture land, or residential use.

STATE ISSUES

There are currently no state regulations pertaining to reclamation of sites that have been mined for aggregate materials.

There are however, a few Indiana State laws and rules you should be aware of, although they are **not** discussed in detail in this Chapter.

- Indiana Code 14-29-3 (Sand and Gravel Permits) is a law requiring permits for mineral extractions from beds of navigable waters (see [Attachment 1](#)).
- Indiana Administrative Code (IAC) includes 312 IAC 6-5-3, which is a rule that imposes permitting and operational requirements on extraction of minerals from beneath navigable waterways (see [Attachment 2](#)).

STATE AND COUNTY ORDINANCES GOVERNING MINERAL EXTRACTION

Some counties in Indiana have mineral extraction ordinances. Most of the ordinances require application to the local or county zoning board before beginning operations. Some of these applications require information on existing conditions of the proposed extraction area and the surrounding area, a plan of operating areas, a plan of excavation, and a plan for reclamation or rehabilitation of the site. A bond for the land may be required. Other uses, such as asphalt or concrete plants, may be permitted if they are determined to be functionally beneficial to the extraction activity. Most ordinances will outline operations requirements that must be implemented during mining activities. These include requirements for sloping, hours of

operation, safety measures, parking provisions, drainage, access roads, reducing unsightly appearances, aggregate transportation vehicles, and minimizing noise and dust. Some of the ordinances simply list mining as a special use that must be approved by the zoning board. Contact your local county zoning board to obtain information regarding its mining ordinances requirements. [Attachment 3](#) lists some of the counties known to either have mineral extraction ordinances, or to have language in their zoning ordinances that somehow relates to mineral extraction activities.

If you have finished extracting minerals from an area, you must comply with the rules and guidelines of the Guiding Principals, of the Environmental Stewardship Council ESC.

For an interactive map of Indiana that provides contact information for all 92 counties, go to www.in.gov/mylocal/map.html.

RECLAMATION

There are currently no state regulations pertaining to reclamation of sites that have been mined for aggregate materials.

The Indiana Mineral Aggregates Association (IMAA) is committed to the principals of responsible stewardship of the non-coal mineral resources of the State of Indiana. IMAA believes that site reclamation and beautification are essential activities to properly manage the impact of extracting these basic construction materials, which are necessary for the economic well-being of the state.

In an effort to establish a meaningful reclamation and beautification program that benefits the greatest number of industrial minerals producers in Indiana, the IMAA has formed the Environmental Stewardship Council (ESC) to define recommended practices and guidelines for reclamation and beautification of non-coal mineral extraction sites. Full details regarding ESC can be found in the Guiding Principles of the Environmental Stewardship Council binder.

The non-coal mineral resource industry strongly believes that reclamation and beautification goals can be achieved through good stewardship of the land and mineral resources utilizing self-regulation and self-discipline. Industry also recognizes that significant differences due to the local geologic, geographic, and physical constraints of each extraction site must be taken into account.

The ESC has laid the groundwork for cooperation with clay and shale producers, gypsum producers, and cement producers located throughout the state.

The coal industry and the dimension limestone industry are not treated as part of the ESC because they have their own reclamation and beautification efforts that are suited to their specific industries.

ESC was created by IMAA to enable aggregate and industrial minerals producers to avoid the adverse effects of additional regulation and bureaucracy on their day-to-day businesses and profitability. All participants in the ESC will be asked to submit an application for each mineral extraction site and annual progress reports. Annual fees and plant fees will be determined by the ESC Board of Directors and will be assessed to individual member plants.

MAINTAINING NON-ACTIVE AREAS

If you have finished extracting minerals from an area and you do not want the area to be classified as abandoned, simply keep all signs in place and continue maintenance of the grounds. Maintain all permits and continue monitoring requirements. Also, review any local requirements such as zoning (i.e. some form of activity may be required to keep zoning and permits active.)

CHAPTER 2 - ATTACHMENT 1

**Indiana Code 14-29-3: Permit to Take Sand, Gravel, Stone, or
Other Mineral from Bed of Navigable Water**

The following Indiana Codes are listed in IC 14-29-3. Please note: as the Indiana Code is revised the Indiana General Assembly website is updated within a reasonable time period. For the most current version of the rule visit the following website <http://www.in.gov/legislative/ic/code/title14/ar29/ch3.html>

**Information Maintained by the Office of Code Revision Indiana Legislative Services
Agency**

05/25/2005 02:00:03 PM EST

IC 14-29-3

Chapter 3. Sand and Gravel Permits

IC 14-29-3-1

Permit issuance

Sec. 1. The department may issue a permit to a person to take sand, gravel, stone, or other mineral or substance from or under the bed of the navigable water of Indiana.

As added by P.L.1-1995, SEC.22.

IC 14-29-3-2

Area, substance, and fees for permit

Sec. 2. In issuing a permit under this chapter, the department shall do the following:

(1) Fix by the permit the area within which it is lawful and in the best interests of the state to permit the taking by the permittee of the mineral or substance.

(2) Fix by the permit and collect from the permittee when due the amount of the reasonable value of the mineral or substance to be taken, measured by weight, cubic dimensions, or other common and usual measurement.

(3) Collect a fee of fifty dollars (\$50) for each permit issued.

As added by P.L.1-1995, SEC.22.

IC 14-29-3-3

Conditions of permit

Sec. 3. (a) A permit issued under this chapter must include the following conditions:

(1) The permittee shall give bond in the amount and with surety approved by the department for full and prompt compliance with the terms and conditions of the permit.

(2) The permittee shall, monthly or quarterly as the department stipulates, make to the department a verified report and full account and payment for all mineral or substance taken during the preceding month or quarter.

(3) The department may, at any time in reasonable hours, inspect the following:

(A) All books, papers, and records of the permittee relating to the account.

(B) The works and workings of the permittee.

(4) The department may revoke or suspend the permit for the failure of the permittee to comply with this chapter or with the terms and conditions of the permit.

(5) Subject to suspension or revocation, the permit will remain in force for the period that the department determines, not to exceed five (5) years from the date of issuance. However, the permit may be renewed by the permittee by written application

filed with the department six (6) months before expiration of the permit.

(6) The works, workings, and operations under the permit must

not do any of the following:

(A) Impede the navigation of the water.

(B) Damage or endanger a bridge, highway, railroad, public work, utility, or the property of a riparian owner or adjoining proprietor or adjacent permittee.

(C) Endanger the lives of individuals.

(7) The permittee shall take the measures, to be determined by the department and stipulated in the permit, that are reasonable to avoid the damage and danger.

(b) The department may also prescribe other reasonable conditions in the permit that are in the best interests of the state.

As added by P.L.1-1995, SEC.22.

IC 14-29-3-4

Taking without permit

Sec. 4. (a) A person who knowingly takes sand, gravel, stone, or other mineral or substance from or under the bed of the navigable water of Indiana without a permit commits a Class B infraction.

(b) Each day a violation continues constitutes a separate infraction.

As added by P.L.1-1995, SEC.22. Amended by P.L.71-2004, SEC.24.

CHAPTER 2 - ATTACHMENT 2
312 IAC 6-5-3: License to Extract Minerals

The following Indiana Administrative Code is listed in 312 IAC 6-5-3. Please note: as the Indiana Administrative Code is revised the Indiana General Assembly website is updated within a reasonable time period. For the most current version of the rule visit the following website <http://www.in.gov/legislative/iac/T03120/A00060.PDF>

312 IAC 6-5-3 License to extract minerals

Authority: IC 14-10-2-4; IC 14-28-1-5; IC 14-29-1-8

Affected: IC 14-28-1; IC 14-29-1; IC 14-29-3; IC 14-34; IC 14-37

Sec. 3. (a) Except as provided in subsections (b) through (d), a written license is required under this rule before a person can lawfully extract sand, gravel, stone, coal, oil, gas, or another mineral from or under the bed of a navigable waterway.

(b) A separate license is not required under this rule for the extraction of coal from or under the bed of a navigable waterway if a license is issued under IC 14-34 and 310 IAC 12 that also applies the requirements of this rule.

(c) A separate license is not required under this rule for the extraction of oil or gas from or under the bed of a navigable waterway if a license is issued under IC 14-37 and 312 IAC 16-3 that also applies the requirements of this rule.

(d) A license is not required under this rule for the extraction of sand, gravel, or stone from the bed of a navigable waterway that is within a floodway if the extraction activity is exempted or excluded from the licensing requirements of IC 14-28-1.

(e) A license under this section shall conform to IC 14-29-1 and IC 14-29-3.

(f) The standards and requirements of this rule govern a license issued under this rule and any activity for which a license is required under this rule. (*Natural Resources Commission; 312 IAC 6-5-3; filed Sep 11, 1997, 8:50 a.m.: 21 IR 370; filed Feb 7, 2000, 3:31 p.m.: 23 IR 1365; readopted filed Jul 28, 2003, 12:00 p.m.: 27 IR 286*)

CHAPTER 2 - ATTACHMENT 3
Partial List of Counties That Have Mineral Extraction Zoning Ordinances

Partial List of Counties That Have Mineral Extraction Zoning Ordinances

Allen	Hamilton	St. Joseph
Cass	Hancock	Stueben
Elkhart	Noble	Tippecanoe
Grant	Putnam	

Note: Some cities or towns may have ordinances governing mineral extraction. You should check with the city government to verify the existence of such an ordinance.

There are several websites that might aid in identifying local government websites or locating existing municipal codes or ordinances. Two such websites are listed below.

Municipal code search

http://www.municode.com/resources/code_list.asp?stateID=14

This site provides information for all Indiana counties. Often government office websites are linked to the county page. There are also links to city and town websites.

<http://www.in.gov/mylocal/map.html>

CHAPTER 3

CORPS OF ENGINEERS PERMITS

INTRODUCTION

The U.S. Army Corps of Engineers (Corps) has regulated activities in U.S. Waters since 1890. Until the 1960's, the purpose of the regulatory activities was to protect navigation. Since then, considerations also include the protection and utilization of water resources.

The Corps derives its regulatory authority from three Federal laws. The legislative origins of the program are the Rivers and Harbors Acts of 1890 (superseded) and 1899 (33 U.S. Code [U.S.C.] 401). Various sections of this Act establish permit requirements to prevent unauthorized obstruction or alteration of any navigable water of the United States. The most frequently exercised authority is contained in Section 10 (33 U.S.C. 403) which covers construction, excavation, or deposition of materials in, over, or under such waters, or any work which would affect the course, location, condition, or capacity of those waters. Other permit authorities in the Act are Section 9 for dams and dikes, Section 13 for refuse disposal, and Section 14 for temporary occupation of work built by the United States.

In 1972, amendments to the Federal Water Pollution Control Act added what is commonly called Section 404 authority (33 U.S.C. 1344) to the program. Under Section 404 and the related Section 402, the Corps is authorized to issue permits for the discharge of dredged or fill material into waters of the United States (Section 402 superseded the Section 13 permitting authority mentioned above). The Federal Water Pollution Control Act was further amended in 1977 and given the common name of "Clean Water Act" and was again amended in 1987 to modify criminal and civil penalty provisions and to add an administrative penalty provision.

Also in 1972, with enactment of the Marine Protection, Research, and Sanctuaries Act, the Corps was authorized to issue permits for the transportation of dredged material to be dumped in the ocean at specific disposal sites.

The Corps permits most commonly applicable for the mineral aggregate industry are the Section 10 and Section 404 permits. Other federal laws may also affect the processing of Corps permits because of overlapping agency jurisdiction. These include:

- The National Environmental Policy Act
- The Coastal Zone Management Act
- The Fish and Wildlife Coordination Act
- The Endangered Species Act
- The National Historic Preservation Act
- The Deepwater Port Act
- The Federal Power Act
- The Marine Mammal Protection Act
- The Wild and Scenic Rivers Act

- The National Fishing Enhancement Act of 1984

CORPS DISTRICTS

Three Corps districts have jurisdiction in Indiana, divided by watershed boundaries. The northern approximately $\frac{1}{4}$ of the State of Indiana is in the Detroit District, with the exception of the counties of Lake, Porter, and the northern portion of LaPorte County, which are in the Chicago District. The southern approximately $\frac{3}{4}$ of the State of Indiana is in the Louisville District. A map of the Corps district boundaries in the State of Indiana can be accessed at the following IDEM web page:

<http://www.in.gov/idem/water/planbr/401/corpsdistricts.html>

Addresses and phone numbers for these three districts are as follows:

Detroit District
477 Michigan Avenue
Detroit, MI 48226
(313) 226-6413

Louisville District
P.O. Box 59
Louisville, KY 40201-0059
(502) 315-6106 or 6107

Chicago District
111 N. Canal Street, Suite 600
Chicago, IL 60606-7206
(312) 353-6400

If you intend to file an application for a Corps permit, it is highly recommended that you involve the Corps in the early planning stages for your activities. You can do so by contacting the appropriate Corps district office at the telephone numbers listed above and requesting a pre-permitting meeting. The following Corps web page also contains information on the regulatory authority and requirements of the Corps:

<http://www.usace.army.mil/inet/functions/cw/cecwo/reg/>

SECTION 10 AND SECTION 404 PERMITS

CORPS SECTION 10 PERMITS

The geographic jurisdiction of the Rivers and Harbors Act of 1899 includes all navigable waters of the United States which are defined (33 CFR Part 329) as, **"those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce."** Section 10 permits are required for all work (other than construction of bridges, causeways, dams, or dikes) performed on, over, or under "navigable waters of the United States". Examples of projects which may require a Section 10 permit include, but are not limited to, installation of:

- intake structures
- outfalls
- mooring cells
- pile clusters
- commercial loading or unloading docks
- aerial cable crossings
- submarine crossings
- retaining walls
- riprap

Each Corps district has a list of those portions of specific rivers which are considered navigable, and where Section 10 permits are required.

Dredging and disposal of dredged material in navigable waters of the U.S. also requires a Corps permit. The “discharge of dredged or fill material” means the addition of fill material into waters of the United States. The term generally includes, without limitation, (1) placement of fill that is necessary for the construction of any structure in the waters of the United States; (2) the building of any structure or impoundment requiring rock, sand, soil, or other materials for its construction; (3) site development fills for commercial uses; (4) causeways or road fills; (5) property protection and/or reclamation devices such as riprap, seawalls, and breakwaters; and (6) levees.

CORPS SECTION 404 PERMITS

Activities requiring Section 404 permits are limited to discharges of dredged or fill materials into the waters of the United States. These discharges include return water from dredged material disposed of on the upland, incidental discharges associated with excavation activities, and generally any fill material (e.g., rock, sand, dirt) used to construct land for site development, roadways, erosion protection, etc.

“Waters of the United States” covered by Section 404 of the CWA are:

- All waters that are, may be, or have been used in interstate or foreign commerce.
- Their tributaries.
- Wetlands adjacent to or hydrologically connected to waters of the U.S. and their tributaries.

Section 404 jurisdiction is defined as encompassing Section 10 waters plus their tributaries and adjacent wetlands and isolated waters where the use, degradation, or destruction of such waters could affect interstate or foreign commerce.

On January 9, 2001, the U.S. Supreme Court ruled against the Corps and its authority to regulate isolated water bodies and wetlands which are not adjacent to or hydrologically connected to waters of the U.S. This ruling has become known as “SWANCC”, referring to the Solid Waste Agency of Northern Cook County, which was the plaintiff in the case. Many states, including

Indiana, subsequently developed permitting programs for isolated wetlands that are not under the regulatory authority of the Corps.

The Indiana wetlands permitting program is discussed in more detail in Chapter 4. In summary, IDEM defers to the Corps for a determination of which projects fall under the jurisdictional authority of Section 404 of the CWA. If the Corps claims jurisdiction for a site, then it will also require a CWA Section 401 Water Quality Certification (WQC) from IDEM. Types of projects requiring a 404 permit and a 401 WQC may include, but are not limited to, the following:

- construction fills
- disposal of excavated or dredged material
- dredging of streams, rivers or lakes
- landfill operations
- bank stabilization and protection
- highway fills
- low-water bridges
- any other deposit or placement of fill for any reason

In some instances, a joint Section 10/ Section 404 permit is required.

IDEM SECTION 401 WATER QUALITY CERTIFICATION

Section 401 of the CWA requires any applicant for a federal permit to conduct any activity that may result in a discharge of pollutants to water to first obtain a water quality certification (WQC) from the state in which the proposed activity is located. This means that anyone wishing to discharge pollutants to wetlands or other water bodies through activities such as construction, filling, excavating, or mechanical clearing must first receive authorization from the state.

Most of the applications for federal permits that trigger the need for a Section 401 WQC are Corps permit applications. If the Corps decides that a federal permit is needed (i.e., Section 10, Section 404, or other), then the applicant must obtain a Section 401 WQC from IDEM. If the Corps determines that a federal permit is not needed, then another form of authorization from IDEM will probably be needed. This is likely to be the case for "isolated wetlands" where the Corps has determined that it has no basis for federal jurisdiction.

In order for any water-impacting permit from the Corps to be issued, IDEM must issue a Section 401 WQC for the project. A Section 401 WQC is a statement by IDEM that the project will not violate the water pollution control laws and regulations of the State of Indiana. Information on the IDEM 401 Water Quality Certification can be obtained at the following IDEM web page:

<http://www.in.gov/idem/water/planbr/401/appinfo.html>

The application and approval of the Section 401 WQC will affect the timing of the issuance of the Corps permit, because the Corps cannot completely process their permit until the Section 401 WQC is received from, or waived by, the State. If IDEM grants the 401 WQC, then the Corps can grant their permit.

If 401 WQC is denied by IDEM, the Corps cannot issue their permit. You have the option, at that point, to revise the project to lessen the impact to water quality and re-apply for the Section 401 Water Quality Certification. In addition, the denial can be reviewed through the formal adjudication process. However, that can be a lengthy and costly process. Therefore, it is wise to submit the Section 401 WQC application to IDEM at the same time the Corps permit application is filed.

Make sure the applications for all permits are complete when submitted. Missing information in either the Corps or IDEM permit applications will greatly delay the permitting process because the review period will not begin until all information is received by the agencies and a public notice, if necessary, is issued. IDEM can take up to 60 calendar days to review the project and contact the applicant with a decision. The normal time frame for a decision is 30-60 days. If no response is received within 60 days, the Section 401 WQC is waived, and the project can proceed once the Corps issues their permit. However, it is recommended that the Corps be contacted to ask whether it is acceptable to proceed with the project under a waived 401 WQC.

CORPS – IDEM NATIONWIDE PERMITS

The Corps has developed Nationwide Permits (NWP) for commonly conducted activities that are considered to have limited impacts on waters of the U.S. and wetlands. NWPs are designed to expedite processing of projects which, individually and cumulatively, have little or no adverse effect on the environment. As of 2002, the Corps has 43 NWPs (#1 through 25, and #27 through 44). Some examples of the NWPs are:

- NWP 5 – Scientific Measurement Devices
- NWP 6 – Survey Activities
- NWP 12 – Utility Line Activities
- NWP 36 – Boat Ramps
- NWP 44 – Mining activities

Some of the NWPs have limits (volume, area, etc.) and other requirements that must be met for a project to be eligible for an NWP, and some require that a Pre-Construction Notification (PCN) be submitted to the Corps before beginning a project. However, the process of obtaining an NWP authorization for a project is much easier and timely than obtaining an individual Section 404 permit.

IDEM has approved some of the NWPs “as is” and has granted pre-approval for Section 401 WQC. For other NWPs, IDEM has attached additional conditions that must be met to receive 401 WQC. Applications for these “conditional NWPs” must receive individual Section 401 WQC review from IDEM. The list of NWPs approved by IDEM, either “as is” or “conditionally” can be found at the following IDEM web page:

<http://www.in.gov/idem/water/planbr/401/nwp02.html>

It is advisable to get a determination from the Corps and IDEM that the proposed project qualifies for coverage under an NWP, and for 401 WQC requirements. The request for determination of coverage should be submitted in writing to the appropriate Corps district office and the IDEM Office of Water Quality.

THE CORPS – IDEM REGIONAL GENERAL PERMIT

The Corps and IDEM have developed a Regional General Permit (RGP) to authorize activities that impact less than 1 acre of waters of the U.S., including wetlands. The RGP is intended to streamline the current permitting process for projects with minimal impacts.

The activities that can be authorized by the Indiana RGP include the following:

- New construction activities, including filling and grading, dredging, channelization, road crossings, culverts, bank stabilization.
- Agricultural activities, including clearing, tiling, ditching, fills for buildings or access roads.
- Mining activities (excluding surface coal mining), including staging, access, extraction, berms, temporary storage.

The following limitations apply to projects authorized under the RGP:

- Discharges of dredged or fill material are limited to one acre or less of "waters of the United States," including wetlands.
- Dredging in "navigable waters" is limited to 10,000 cubic yards.
- Structures and fills for docking and mooring are limited to similar permitted structures and fills in the vicinity.
- Discharges of dredged or fill material into Lake Michigan are limited to one-tenth acre, except for bank stabilization.
- Impacts resulting from filling greater than one-tenth acre of special aquatic sites, or work causing more than minimal effects will require mitigation to compensate for impacts to the stream, special aquatic sites or wetlands affected. Other work or structures in navigable waters will be evaluated and must include mitigation to reduce impacts to minimum levels.

The RGP can be used by the Corps to authorize most projects that comply with the terms, conditions, and limitations of the RGP. IDEM has issued Section 401 WQC for the RGP, subject to specific restrictions as listed on the following IDEM web page:

<http://www.in.gov/idem/water/planbr/401/rgp02.html>

Proposed projects that meet the terms and conditions of the RGP require only the submittal of a Notification Form to IDEM. These projects are pre-authorized by the Corps and IDEM and no response is required prior to initiation of construction. Projects that exceed the one-acre limit of the RGP or do not meet the terms and conditions of the RGP require the issuance of an individual Section 401 WQC by IDEM through submittal of a full Section 401 application.

APPLICATION PROCESS

Applications for Individual Section 10 or 404 permits, or coverage under an NWP, require completion of the form “Application for Department of the Army Permit.” The Indiana RGP requires completion of a notification form, and the IDEM 401 Water Quality Certification has its own application.

The Corps is required to make all individual applications available for public inspection for 20 to 30 days. If a request is made by a member of the public, and the Corps determines that the request has merit, a public hearing will be held by the Corps in conjunction with any other agencies involved in reviewing the application. The purpose of the hearing is strictly to gather information with which to evaluate applications. The Corps must notify the public of the public hearing 30 days in advance depending upon the size of the project. This will delay the process further.

It is highly recommended that a company official or an agent of the company be present at the public hearing for each individual permit. USEPA, IDEM, and other state, federal, and local agencies, as well as the general public can also comment on a permit application. Unlike a 404 permit, a request for coverage under an NWP or RGP is not put on public notice, and comments are not solicited from the public or from any regulatory agency.

PENALTIES

Failure to obtain a permit where applicable would be a violation of federal law, possibly resulting in civil penalties and fines. If a permit is not obtained in a situation where it should have been, the Corps may require that the operator stop all activity associated with the project, reclaim the area to its original condition, and/or obtain a permit. In the latter situation, the review is conducted without regard to existing disturbance or past expenditure by the applicant. If the permit is denied, the operator must reclaim the area. In blatant cases, such as those where a permit was denied and the operator proceeded anyway, fines of \$10,000 per violation and \$25,000 maximum can be levied, and criminal charges can be filed. Failure to meet the conditions or limitations contained in a permit can result in fines and civil penalties.

CHAPTER 4
WETLANDS REGULATIONS
(THE CLEAN WATER ACT, SECTIONS 401 AND 404)
(INDIANA ADMINISTRATIVE CODE, TITLE 327 CHAPTER 17)

INTRODUCTION

Section 404 of the Clean Water Act (CWA) authorizes the U.S. Army Corps of Engineers (Corps) to issue permits for the discharge of dredged or fill material into Waters of the United States which includes wetlands. Section 401 of the CWA places water quality certification authority with the State for those activities requiring a Section 404 permit.

Until 2001, the Corps exercised jurisdiction over all wetlands. However, on January 9, 2001, the U.S. Supreme Court ruled against the Corps and its authority to regulate isolated water bodies and wetlands which are not adjacent to navigable waters of the U.S. In response to this ruling, many states, including Indiana, undertook to develop or revise their wetland rules to include authority over isolated wetlands no longer under Corps jurisdiction. In 2004 Indiana began implementation of a State isolated wetlands program. **The Indiana Department of Environmental Management (IDEM) administers the State program for those wetlands that are isolated and do not fall under the jurisdiction of the Corps' Section 404 permitting requirements.**

The U.S. Federal Register (33 CFR 328.3(b)) defines wetlands as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas” (33 CFR 328.3(b)). Wetlands are areas that serve as transition areas between land and water and provide the following important functions:

1. Improved water quality through filtration and assimilation of chemicals, eroded soils, and nutrients.
2. Provision of food, habitat, and nesting grounds for fish and other wildlife.
3. Erosion protection.
4. Recreation, education, and research.
5. Minimization of flood damage by holding water.

Wetlands are characterized by the presence of wetland hydrology, hydric soils, and a prevalence of hydrophytic vegetation. **All three of these characteristics must be present for an area to be a jurisdictional wetland under Corps or State authority. It is important to note that an area does not need to contain standing water at any, or all, times to meet the criteria for a jurisdictional wetland. Conversely, the presence of standing water does not always indicate that an area is a jurisdictional wetland.** The key is whether or not the soils are saturated long enough to induce the formation of hydric soils, which in turn excludes the presence of plant species that cannot tolerate hydric soils and encourages the growth of plants that can tolerate, or

even require, hydric soils to survive. A person trained in wetland soil and vegetation criteria should be consulted to determine if an area is a jurisdictional wetland.

REGULATED WETLAND ACTIVITIES

Because wetlands are considered Waters of the U.S. and/or the State in which they are located, no activities that cause an impact to wetlands may be made without authorization from the Corps and/or the State. Impact to a wetland or other water of the U.S. or State will occur when the discharge of dredged material physically alters a water or wetland, or results in a change in the hydrology or functional value of a water or wetland. **This applies to naturally occurring wetlands already in existence as well as to those created, either intentionally or incidentally, by human activity.**

Be aware of activities at your site that have the potential to create wetlands, such as creation of a pond or a shallow depressional area that retains enough water to saturate the soils either intermittently or continually. For example, if you mine a site and it becomes inactive for a period of time, the mined area may fill with water and become a deepwater aquatic habitat, a wetland, or a combination of both (a deepwater aquatic habitat is an area that is permanently inundated at a mean annual water depth of greater than 6.6 feet, or less than 6.6 feet but does not support rooted emergent or woody plant species). Once a wetland establishes itself at a site, the wetland regulations described herein must be evaluated and applied as applicable.

COMPLIANCE WITH REGULATIONS

Both the Corps and the State expect the property owner to first attempt to modify the planned activities at a site so that wetlands impacts can be avoided. If impact to wetlands cannot be avoided at a specific site, then Corps and/or State permits must be obtained prior to impacting the wetlands, the impacts must be minimized, and mitigation wetlands will be required to compensate for the impacted wetlands. The type of permit required will depend on the type and size of wetland that will be impacted at the site.

WETLAND DETERMINATION

In order to ensure compliance with the Corps and/or State wetlands regulations, it is first necessary to determine if any areas of a currently owned property or any property considered for purchase contain jurisdictional wetlands. A trained wetlands inspector should conduct a desktop data review and a site reconnaissance to determine if any areas at a site contain the three criteria for jurisdictional wetlands (wetland hydrology, hydric soils, and hydrophytic vegetation). A desktop data review entails a review of published information sources pertaining to the Site. Relevant sources of information would include U.S. Department of Agriculture (USDA) soil surveys, U.S. Geological Survey (USGS) topographic maps, and U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory maps. **It should be noted that while these information sources provide valuable information to help direct the site inspection, not all features included on them have been ground-truthed and, therefore, cannot be used to definitively determine the presence, absence, location, size, or type of wetlands present at a site.**

Following the desktop information review, a site inspection should be conducted to look for potential wetland areas. The site inspection should include examination of the hydrology, soils, and vegetation at locations of interest at the site to check for the presence or absence of one or more of these wetland criteria. If it is determined that the property does not contain any jurisdictional wetlands, then the data used to make such a determination should be documented and maintained on-file for future reference, if needed.

If jurisdictional wetlands are identified at the site, then the boundaries, size, type(s), and isolated/non-isolated status of the wetlands should be delineated for future land use planning and permitting purposes.

WETLAND DELINEATION

A wetland delineation determines the boundaries, size, type(s), and isolated/non-isolated status of a wetland. This information can then be used to avoid impacting the wetlands, to apply for a wetlands permit, and/or to develop a wetlands mitigation plan. **A wetland delineation must be completed prior to submittal of a permit application to the Corps and/or the State.** The delineation must be completed according to the procedures set forth in the 1987 Corps document entitled “Corps of Engineers Wetlands Delineation Manual”. The manual presents the methodology for assessing the presence or absence of wetlands at a site and their boundaries, and is the primary guidance document used for wetlands delineation. It is recommended that to properly manage wetlands at a site, the wetland boundaries be surveyed and plotted on a property map. This will help to show their exact location and size for future reference.

COMPREHENSIVE WETLANDS MANAGEMENT PLAN

A comprehensive wetlands management plan, although not required by the Corps or the State, may be helpful to record and track the locations of all wetlands determinations and delineations. The management plan can be used for future activities planning at properties containing wetlands, to assess the potential impacts to wetlands, and determine any permitting needs. **Unauthorized impacts to wetlands can result in the issuance of a cease and desist order by the Corps and/or the State, which halts all work in the wetlands until the matter of unauthorized activity is settled. The issuance of a cease and desist order can be extremely costly if it results in down-time for the extraction operation, or includes penalties and fines for the unauthorized activity.** A comprehensive wetlands management plan will alert the property owner that, at a minimum, consultation with the Corps or the State regarding potential permitting needs may be advisable, or that the permitting process should be completed prior to conducting any activities that will impact the wetlands.

AVOIDANCE AND MINIMIZATION

As discussed previously in this chapter, the Corps and the State will require that the property owner consider and demonstrate that impacts on wetlands can not be avoided. If this can be demonstrated to the satisfaction of the Corps and/or the State, then the property owner must minimize the amount of impact necessary for the project to be viable, and the unavoidable impacts must be compensated for by the creation of mitigation wetlands.

CORPS AND STATE PERMITTING

If wetlands impacts cannot be avoided, then the appropriate permit(s) for the site are determined using the delineation information in consultation with the Corps. The wetlands delineation report, including maps of the area, site, and delineated wetlands boundaries, should be sent to the appropriate Corps district office for concurrence on whether the wetlands are hydrologically connected to a water of the U.S. and under Corps authority (non-isolated), or are isolated and under State authority.

After the Corps responds with their isolated/non-isolated determination, a pre-application meeting with the Corps and/or State is recommended to provide insight and suggestions from the regulatory personnel regarding the permit application and mitigation plan. An on-site meeting is recommended to familiarize the agencies with the site and address as many issues as possible before the permit application is completed and submitted.

If the Corps concurs that the wetlands are non-isolated and under their authority, then the Corps 404 permit application should be completed and submitted along with the wetlands delineation report and a compensatory mitigation plan. Concurrently, the State 404 water quality certification application should be completed and submitted to IDEM along with the wetlands delineation report and a compensatory mitigation plan.

If the Corps determines that the wetland is isolated and not under their authority, then the State wetland activity permit application should be completed and submitted to IDEM along with the wetlands delineation report, a compensatory mitigation plan, and the Corps determination letter.

The Corps and/or IDEM will review the application and supporting materials, will solicit review comments from other agencies including the USFWS and the Indiana Department of Natural Resources (IDNR), and will make the application available for public review and comment. After receipt of all required information from the applicant, comments from other regulatory agencies, and public comments, changes to the plan may be required in order to make the proposal acceptable, or the plan may not be approved depending on the comments of the regulatory agencies. If a permit application is denied, the appropriate actions should be discussed with the regulatory agencies at that time. You may be able to modify the project and resubmit the application.

WETLAND MITIGATION PLANS

When a planned activity at a property will impact a jurisdictional wetland, and avoidance has been evaluated and proven unrealistic, a compensatory mitigation plan should be prepared that will provide for the replacement wetlands impacted either directly (i.e., by discharge of material to the wetland) or through indirect action (i.e., alteration of water flow to an existing wetland through mining activities). Compensatory mitigation can be accomplished through a variety of strategies including:

1. Restoration of the impacted wetland upon project completion.
2. Creation of a new wetland somewhere else on the property.
3. Creation of wetlands at an off-site location.
4. The purchase of mitigation credits from an existing wetland mitigation bank.

On-site mitigation is preferred to off-site mitigation by both the Corps and IDEM. If off-site mitigation is proposed, it should be within the same 8-unit hydrologic unit code and/or county as the impacted wetlands. The mitigation plan has a greater chance of approval if the proposed mitigation wetlands are of the same type and quality, or higher quality, as the impacted wetlands. The plan is subject to the comments of the regulatory authorities and must be accepted before any permits are granted. Again it is recommended that a pre-application meeting with the regulatory agencies be scheduled in advance of the proposed project start date.

For every acre of wetland lost, at least one acre must be restored or created. In general, the more complex and higher quality the impacted wetland, the higher the ratio of impacted to mitigation wetlands required. Under some circumstances a ratio as high as 4:1 may be required by the agencies. The actual ratio proposed in the mitigation plan will depend on site-specific conditions, and should be discussed in the pre-permitting meeting with the agencies.

After construction of the mitigation wetlands, they must be monitored as outlined in the approved mitigation plan and are subject to any special conditions stated in the permit. The purpose of the monitoring program is to ensure that the mitigation wetland is progressing towards the goals stated in the mitigation plan. Reports of the monitoring are submitted to the agencies for review and tracking of the success of the mitigation and fulfillment of the permit requirements. A mitigation wetland must be managed over the life of the wetland either by the property owner or by another entity interested in the success of the wetland. It is the responsibility of the permittee to ensure the success of the wetland as outlined in the mitigation plan and permit, including taking any necessary remedial actions if the wetland is not progressing towards the stated goals.

Where and how mitigation will occur depends on the project. It is important to consider mitigation wetlands construction, which can be expensive, versus the economic loss that may be associated with avoidance and/or minimization of wetland impacts at a project site. In other words, if the project can be completed without impacting wetlands, this could be a less costly option. If the impacts cannot be avoided, minimizing the impacts will reduce the costs associated with compensating for the lost wetlands.

CONCLUSION

The Corps has been evaluating permit applications for discharges into wetlands under the Clean Water Act since the mid-1970's. If historic wetland impacts have occurred since that time, mitigation for that acreage may be required. The method in which this will be handled can be determined only by the regulatory agencies on a case-by-case basis.

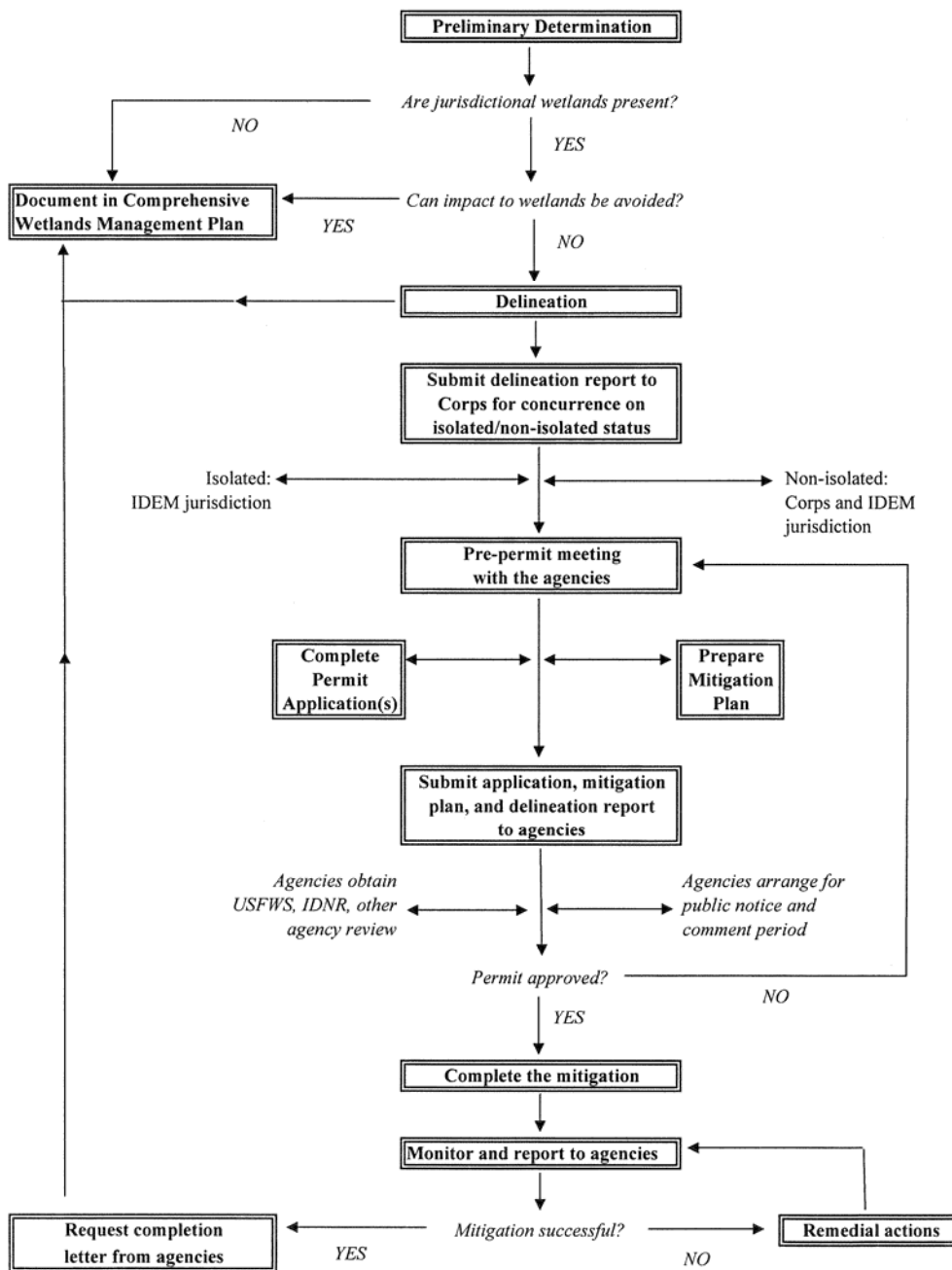
In considering property for purchase, it is recommended that a preliminary determination for the presence of jurisdictional wetlands be performed with the property owner's permission prior to purchase. This determination will give the buyer information on the presence/absence of wetlands at the property, their locations, and their size. Conducting a determination before acquisition can help the buyer evaluate whether the presence and location of any identified wetlands will affect future plans for the property.

The protection of wetlands remains at the fore-front of environmental concerns and is reflected in current regulations. Consultants are available to help you determine whether wetlands are present on your site and to help you to remain in compliance with the regulations. A jurisdictional wetland can encompass many different habitat types and may not be recognized as a wetland to the untrained eye. A properly trained consultant or wetlands expert who is familiar with wetland types as well as applicable regulations is essential to ensuring compliance.

The bottom line is, when in doubt, seek help from an expert. Taking a risk with wetland compliance is not worth the expense or the out-come that might result, such as the issuance of a cease and desist order, the imposition of a fine, or other legal action. The aggregates industry, more than ever, must be aware of its obligations under the existing federal and state laws.

The following flow chart is provided to help guide you through the wetland assessment and permitting process. This flow chart is intended to provide general guidance on the primary steps involved in managing wetlands at your properties. As stated above, a wetlands expert should be consulted regarding the details of the steps presented in the flow chart.

WETLANDS ASSESSMENT AND PERMITTING PROCESS



CHAPTER 5

CONSTRUCTION IN A FLOODWAY

INTRODUCTION

The Indiana Department of Natural Resources (IDNR), uses Indiana Code (IC) 14-28-1 to manage development along or within waterways (see [Attachment 1](#) for a summary of the requirement for construction in a floodway and construction in navigable waterways). The purpose of this law and its accompanying rules are to provide minimum standards for the delineation and regulation of all flood hazard areas for all rivers or streams in the State of Indiana for the purpose of decreasing existing flood damages, mitigating future flood damages, and protecting the health, safety, and general welfare of the people of Indiana. Some local governments have ordinances that specify further regulations for management or development along or within water ways. Check with your county and city offices.

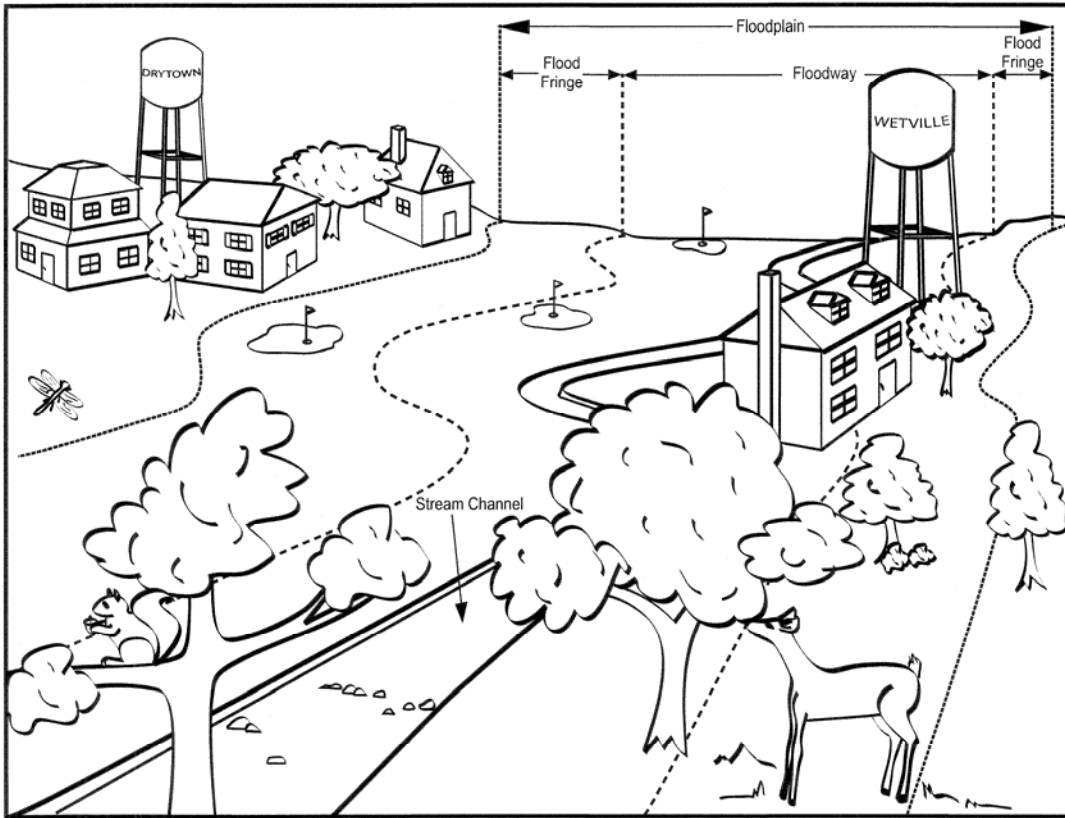
DEFINITIONS

A Regulatory Flood means a flood having peak discharge which can be expected to be equaled or exceeded on the average of once in a one-hundred year period, as calculated by a method and procedure which is acceptable to and approved by the Natural Resources Commission. This flood is equivalent to a flood having a probability of occurrence of one percent in any given year. The term is also sometimes referred to as the one hundred (100) year frequency flood.

A Floodway means the channel of a river or stream and those portions of the flood plains adjoining the channel which are reasonably required to efficiently carry and discharge the peak flow of the regulatory flood of any river or stream. The Floodway Fringe is defined as that portion of the flood plain lying outside the floodway.

To determine if land is within a floodway, consult IDNR. This agency has maps that delineate floodway boundaries on major drainages within the state. Also, floodway maps are generally available for public inspection in the local plan commission's office or building commissioner's office.

The schematic below delineates the “floodway”, “floodway fringe”, and “flood plain”. Note that IDNR’s jurisdiction is in the floodway, but several local governmental agencies have jurisdiction in the floodway fringe.



WHAT PROJECTS REQUIRE A PERMIT?

With few exceptions, IC 14-28-1 applies to ALL projects resulting in development, deposition or excavation on land located within the floodway of the State’s rivers and streams. However, if the river or stream drains an area less than one (1) square mile and the proposed development is not a dam, dike, or a levee, then these state regulations do not apply to this development. Local officials, including local planning, zoning, or building/permitting authorities regulate areas less than one (1) square mile. Also, a permit for construction in a floodway shall not be required for the production of crops, pasture, forests, and park and recreational use provided they do not involve any structure, obstruction, deposits, or excavations. There are several other specific project-types listed within IC 14-28 that are exempted from the DNR permitting process but these project-types are not generally relative to the aggregate industry.

PERMIT APPLICATION PROCESS

Under IC 14-28, IDNR issues permits to erect, make, use, or allow a structure, obstruction, deposit or excavation in or on a floodway and prohibits the construction or placement of abodes or residences in or on a floodway.

The IDNR Permit Application for Construction in a Floodway is State Form 42946 (R5/6-03). Blank copies of the necessary forms are included in [Attachment 2a](#) and [Attachment 2b](#). To successfully complete this application and receive a permit, the following information and attachments must be provided:

- * Documentation of the location, nature, and purpose of the proposed construction, as well as notification of all adjacent landowners.
- * Documentation that the project will not adversely affect the efficiency or unduly restrict the capacity of the floodway which means the project will not result in an increase in flood stages of more than 0.14 feet above the base 100-year regulatory flood elevation.
- * Information demonstrating that the project will not constitute an unreasonable hazard to the safety or life or property, which means the project will not result in the loss of human life, or damage to public or private property to which the applicant has neither ownership nor a flood easement.
- * Information demonstrating that the project will not result in unreasonable detrimental affects upon fish, wildlife, or botanical resources.
- * Information showing that the project will not unreasonably impair the navigability of a navigable waterway.
- * Inclusion of a processing/permit fee of \$200.

To demonstrate the above items, computer modeling and extensive data collection and manipulation is often required. Once completed, the application form is sent to Division of Water, IDNR, 402 West Washington Street, Room W264, Indianapolis, Indiana, 46204-2641. Typically, the permit approval process requires up to 90 days from the time of submission of the application, including a 30-day public comment period. Neighbors may request public hearings regarding the project.

Applications can also be filed electronically. IDNR states that this may save up to four weeks in the time required for approval. In order to file permits electronically, contact Access Indiana at (317) 233-2010 or (800)236-5446 for details.

CHAPTER 5 - ATTACHMENT 1
Summary of Requirements for Construction in a Floodway and/or
Construction in Navigable Waterways

Construction In A Floodway:

The Flood Control Act requires that any person proposing to construct a structure, place fill, or excavate material at site located within the floodway of any river or stream must obtain the written approval of the Department of Natural Resources prior to initiating the activity.

In assessing the approvability of a proposed project, the Department is required to evaluate the singular and cumulative affects of the proposed activity upon:

- The efficiency and capacity of the floodway;
- The safety of life and property; and
- Fish, wildlife, and/or botanical resources

Any person proposing to undertake such an activity is required to submit the following information to the Department:

1. a completed application form;
2. \$200.00 processing fee;
3. proof of public notice as required by law;
4. plans and specifications describing the activity; and
5. other information as required by the Department

Processing time is dependent upon the magnitude of the project and the completeness of the submittal. Typically, 90 to 180 days is required to complete a project review.

Navigable Waterways:

The Navigable Waterways Act states that any person proposing to construct a structure, place fill, excavate material, or withdraw water at site below the ordinary high-water mark of a navigable waterway must obtain the written approval of the Department of Natural Resources prior to initiating the activity. However, this approval is not required if authorization has been obtained under the Flood Control Act, the Clean Water Act, or certain other statutes.

In assessing the approvability of a proposed project, the Department is required to evaluate the singular and cumulative affects of the proposed activity upon:

- the navigability of the waterway;
- the safety of life and property; and
- the environment and cultural resources.

Any person proposing to undertake such an activity is required to submit the following information to the Department

1. a completed application form;
2. proof of public notice as required by the Department
3. plans and specifications describing the activity; and
4. other information as required by the Department

Processing time is dependent upon the magnitude of the project and the completeness of the submittal. Typically, 90 to 180 days is required to complete a project review.

For additional information regarding the permitting program, the application processes, or the public notice requirements visit the website or contact:

Division of Water-Permits Home page

<http://www.in.gov/dnr/water/permits/index.html>

Permit Assistance Manual

http://www.in.gov/dnr/water/permits/application_manual/toc.html

CONTACT THE DIVISION OF WATER

- **E-Mail your questions or comments to us:**
water_inquiry@dnr.IN.gov
- **Mailing address for the Division of Water:**
Indiana Department of Natural Resources
Division of Water
402 West Washington Street, Room W264
Indianapolis, IN 46204
- **Main Office location map**
- **Field office locations:**
 - [Michigan City field office map](#)
- **Phone numbers for the Division of Water:**
Main office - (317)232-4160 or toll free 1-877-928-3755
Fax number - (317)233-4579

CHAPTER 5 - ATTACHMENT 2
Permit Application for Construction in a Floodway

CHAPTER 5 - ATTACHMENT 2a
Application

The following forms are available on the IDNR website. Please note: IDNR may periodically revise State forms. The IDNR website should provide the most up to date forms available. For the most current versions of the forms visit the following websites.

Permit Application Form

<http://www.in.gov/icpr/webfile/formsdiv/42946.pdf>

PERMIT APPLICATION

State Form 42946 (R5/6-03)
Approved by the State Board of Accounts, 2003

Mail To: Division of Water
Department of Natural Resources
402 West Washington Street, Room W264
Indianapolis, Indiana 46204-2641
Telephone Number: (317) 232-4160
Fax Number: (317) 233-4579
Toll Free: 1-877-928-3755

AGENCY USE ONLY

Application # _____	Fee Submitted \$ _____	Check # _____	Receipt # _____
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Based on the "INSTRUCTIONS", I am submitting this application to perform work under:

- ☐ IC 14-26-2 Lake Preservation Act (\$100)
- ☐ IC 14-26-5 Lowering of the Ten Acre Lake Act (\$25)
- ☐ IC 14-29-1 Navigable Waterways Act (\$0)
- ☐ IC 14-29-3 Sand and Gravel Permits Act (\$50)
- ☐ IC 14-29-4 Construction of Channels Act (\$100)
- IC 14-28-1 Flood Control Act Projects – select one
 - ☐ All non-residential construction (\$200)
 - ☐ Residential reconstruction in a floodway, other than the Ohio River floodway (\$50)
 - ☐ Residential construction, or reconstruction, in the Ohio River floodway (\$10)

PLEASE TYPE OR PRINT

1. APPLICANT INFORMATION

Name of Applicant _____ Name of Contact Person _____

Mailing Address _____
(Street, P.O. Box or Rural Route)

City _____ State _____ Zip Code _____

Daytime Telephone Number (____) _____ Fax Number (____) _____

2. AGENT INFORMATION

Name of Authorized Agent _____ Name of Contact Person _____

Mailing Address _____
(Street, P.O. Box or Rural Route)

City _____ State _____ Zip Code _____

Daytime Telephone Number (____) _____ Fax Number (____) _____

3. PROPERTY OWNER INFORMATION

Name of Property Owner _____ Name of Contact Person _____

Mailing Address _____
(Street, P.O. Box or Rural Route)

City _____ State _____ Zip Code _____

Daytime Telephone Number (____) _____ Fax Number (____) _____

Relationship of applicant to property: ☐ Owner ☐ Purchaser ☐ Lessee Other _____

4. AFFIRMATION OF PERSONAL SERVICE, 1ST CLASS MAIL SERVICE, OR CERTIFIED MAIL SERVICE

I have provided public notice to the listed property owners in conformance with the provisions of IC 14-11-4 and 312 IAC 2-3-3 through the method indicated below.

(Check the appropriate Box - Please make copies of this blank page if additional pages are required)

<p>_____ Property Owner (if not applicant or adjacent landowner)</p> <p>_____ Address</p> <p>_____ City State Zip Code</p>	<p><input type="checkbox"/> Personal Service was provided on : _____ (date)</p> <p><input type="checkbox"/> 1st Class Mail Service was provided on: _____(date) I affirm that 21 days have passed without the mailing returned as undelivered or undeliverable. PS Form 3817 is attached as proof of mailing.</p> <p><input type="checkbox"/> Certified Mail service was provided on: _____(date) PS Form 3811 (green card) is attached as proof of mailing.</p>
<p>_____ Adjacent Landowner:</p> <p>_____ Address</p> <p>_____ City State Zip Code</p>	<p><input type="checkbox"/> Personal Service was provided on : _____ (date)</p> <p><input type="checkbox"/> 1st Class Mail Service was provided on: _____(date) I affirm that 21 days have passed without the mailing returned as undelivered or undeliverable. PS Form 3817 is attached as proof of mailing.</p> <p><input type="checkbox"/> Certified Mail service was provided on: _____(date) PS Form 3811 (green card) is attached as proof of mailing.</p>
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<p>_____ Adjacent Landowner:</p> <p>_____ Address</p> <p>_____ City State Zip Code</p>	<p><input type="checkbox"/> Personal Service was provided on : _____ (date)</p> <p><input type="checkbox"/> 1st Class Mail Service was provided on: _____(date) I affirm that 21 days have passed without the mailing returned as undelivered or undeliverable. PS Form 3817 is attached as proof of mailing.</p> <p><input type="checkbox"/> Certified Mail service was provided on: _____(date) PS Form 3811 (green card) is attached as proof of mailing.</p>

5.	<u>PROJECT DESCRIPTION</u>
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5.	<u>PROJECT DESCRIPTION</u>
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[illegible]

6.	<u>PROJECT LOCATION</u>
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6.	<u>PROJECT LOCATION</u>
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6-1 Location Narrative: (See Application Information Packet)
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Stream/Lake Name:

6-2 Driving Directions: (See Application Information Packet)

6-3 Special Information: (See Application Information Packet)

6-4 Project Location Map: (See Application Information Packet)

6-5 Project Site Map: (See Application Information Packet)

7.	<u>DISTURBED AREA DRAWING</u>
7.1 Drawing Requirements: (See Application Information Packet)	

8.	<u>PROJECT PHOTOGRAPHS</u>
8-1 Images: (See Application Information Packet)	
8-2 Photo Orientation Map: (See Application Information Packet)	
8-3 Photo Documentation: (See Application Information Packet)	

9.	<u>RELATED PROJECT INFORMATION</u>
Department of Natural Resources	
Administrative Cause #	Related Application(s) #
Early Coordination #	Utility Exemption #
Recommendation #	Violation #
Department of Environmental Management	
Section 401 #	
Corps of Engineers	
Public Notice #	Section 10 Application #
Section 404 Application #	

10.	<u>STATEMENT OF AFFIRMATION</u>
<p>I hereby swear or affirm, under the penalties for perjury, that the information submitted herewith is to the best of my knowledge and belief, true, accurate and complete, and that the property owner (s), and adjoining landowners have been notified of the activity in conformance with the provisions of 312 IAC 2-3-3. I further certify that I possess the authority to undertake the proposed or completed activities. I hereby grant to the Department of Natural Resources, the right to enter the above-described location to inspect the proposed or completed work.</p>	
<p>_____ Signature of Applicant or Authorized Agent (REQUIRED)</p>	
<p>_____ Date</p>	

11.	<u>REGULATORY FEES</u>
11-1 Regulatory Fees Submitted: (See Application Information Packet)	
11-3 Payment Method: (See Application Information Packet)	

<u>REQUIREMENT FOR ADDITIONAL INFORMATION AND PERMITS</u>
<p>Application made to and approval granted by the Department of Natural Resources does not in any way relieve the applicant of the necessity of securing easements or other property rights, permits and approvals from affected property owners and other local, state, and federal agencies.</p>

CHAPTER 5 - ATTACHMENT 2b
Public Notice

The following forms are available on the IDNR website. Please note: IDNR may periodically revise State forms. The IDNR website should provide the most up to date forms available. For the most current versions of the forms visit the following websites.

Public Notice

<http://www.in.gov/icpr/webfile/formsdiv/50354.pdf>

Public Notice

Adjacent Property Owner's Name
Address
City, State, Zip Code

Date_____

Indiana Code 14-11-4 was enacted to ensure that adjacent property owners are notified of permit applications and provided with an opportunity to present their views to the Department of Natural Resources prior to action.

Under the legislation, the applicant or agent is responsible for providing notice to the owner of the real property owned by a person, other than the applicant, which is both of the following: 1.) located within one-fourth (1/4) mile of the site where the licensed activity would take place, and 2.) has a border or point in common with the exterior boundary of the property where the licensed activity would take place. Included is property which would share a common border if not for the separation caused by a roadway, stream, channel, right-of-way, easement, or railroad.

Due to your proximity to the project site, you are considered to be an adjacent property owner; therefore, notice is being provided in conformance with the provisions of IC 14-11-4 and 312 IAC 2-3.

Applicant's Name, Address, and Telephone

Agent's Name, Address, and Telephone

Stream or Lake Name_____

Project Description and Location_____

Check relevant Statute or Rule:

- ☐ Flood Control Act, IC 14-28-1
☐ Lake Preservation Act, IC 14-26-2
☐ "Ditch Act", IC 14-26-5
☐ Channels Act, IC 14-29-4
☐ Removal of Sands or Gravel, IC 14-29-3

Questions relating to the project should be directed to:

Applicant (or Agent) Name
Mailing Address
City, State, Zip Code
Telephone Number

You may request an informal public hearing, pre-AOPA (Administrative Orders and Procedures Act) hearing, on this application by filing a petition with the Division of Water. The petition must conform to administrative rule 312 IAC 2-3-4 as follows:

- (a) This section establishes the requirements for a petition to request a public hearing under IC 14-11-4-8(a)(2).
 (b) The petition shall include the signatures of at least twenty-five (25) individuals who are at least eighteen (18) years of age and who reside in the county where the licensed activity would take place or who own real property within one (1) mile of the site of the proposed or existing licensed activity.
 (c) The complete mailing addresses of the petitioners shall be typed or printed legibly on the petition.

- (d) Each individual who signs the petition shall affirm that the individual qualifies under subsection (b).
- (e) The petition shall identify the application for which a public hearing is sought, either by division docket number (application number) or by the name of the applicant and the location of the project.

A pre-AOPA public hearing on the application will be limited to the Department's authority under the permitting statutes. Only the issues relevant to the Department's jurisdiction directly related to this application for construction will be addressed. Under permitting statutes, the Department has no authority in zoning, local drainage, burning, traffic safety, etc.; therefore, topics beyond the Department's jurisdiction will not be discussed during the public hearing.

The Department's jurisdiction under the Flood Control Act is confined to the floodway of the stream and its review limited to the following criteria.

To be approvable a project must demonstrate that it will:

- (a) not adversely affect the efficiency or unduly restrict the capacity of the floodway; defined as, the project will not result in an increase in flood stages of more than 0.14 feet above the base 100-year regulatory flood elevation.
- (b) not constitute an unreasonable hazard to the safety of life or property; defined as, the project will not result in either of the following during the regulatory flood: (1) the loss of human life, (2) damage to public or private property to which the applicant has neither ownership nor a flood easement;
- (c) not result in unreasonably detrimental effects upon fish, wildlife or botanical resources.

Additionally, the Department must consider the cumulative effects of the above items.

The Department's jurisdiction under the Lakes Preservation Act is confined to the area at or lakeward of the shoreline of the lake and any impact which the project may have on:

- (a) the natural resources and/or scenic beauty of the lake;
- (b) the water level or contour of the lake below the waterline;
- (c) fish, wildlife or botanical resources.

Additionally, the department must consider the cumulative effects of the above items.

A request for a pre-AOPA public hearing or notice of initial determination pursuant to 312 IAC 2-3 should be addresses to:

Technical Services Section
Division of Water
Department of Natural Resources
402 West Washington Street, Room W264
Indianapolis, Indiana 46204-2641
Telephone: (877) 928-3755 or (317) 232-4160

You may also request that the Department notify you in writing after an initial determination is made to issue or deny the permit. Following the receipt of the approval or denial notice, you may request administrative review of the determination by the Natural Resources Commission under IC 4-21.5 and 312 IAC 3-1. This request should be addressed to :

Division of Hearings
Natural Resources Commission
402 West Washington Street, Room W272
Indianapolis, Indiana 46204
Telephone: (317) 232-4699

CHAPTER 6

INDIANA SURFACE WATER AND STORMWATER DISCHARGE REQUIREMENTS

INTRODUCTION

Facilities that discharge process water, non-process water and stormwater to surface water through pipes or conveyances must have a permit under the National Pollution Discharge Elimination System (NDPES). The Indiana Department of Environmental Management (IDEM) has been given authority to administer this program from the U.S. EPA. The office of Water Quality issues these permits. See Appendix A for contact information.

DISCHARGE OF PROCESS AND NON-PROCESS WATER TO SURFACE WATERS

COVERAGE UNDER A GENERAL PERMIT RULE

Indiana regulations at 327 IAC 15-12 allow sand, gravel, dimension stone or crushed stone operators to obtain a general permit for discharge of process and non-process water. A general permit (or “permit-by-rule”) is one that allows you to simply notify the IDEM of your discharge by a letter; then you only need to comply with the requirements set forth in the rule. A summary of this rule is included as [Attachment 1](#) to this chapter.

The purpose of the rule (327 IAC 15-12) is to regulate wastewater discharges from sand, gravel, dimension stone, and crushed stone operations which utilize a sedimentation basin treatment for:

- Pit dewatering;
- Channel machines;
- Broaching;
- Jet piercing;
- Scrubber water from wet scrubbers use for air pollution control;
- Dust suppression spray water;
- Wash water from spray bars for final screening operations; and
- Non-contact cooling water;

so that the public health, existing water uses, and aquatic biota are protected.

The rule applies to all facilities having designated categories of point sources for which a general permit rule exists. In this instance, the rule applies to wastewater discharges from sand, gravel, dimension stone, and crushed stone operations which utilize sedimentation basin treatment. Facilities with individual permits for such discharges may convert or modify the individual permit to have such discharges covered by a general permit. Also, such discharges can become covered by the general permit upon expiration of the individual permit.

Facilities not authorized to discharge by this NPDES general permit rule and that are required to obtain an individual NPDES permit are as follows:

1. Crushed stone operations utilizing flotation agents to remove impurities from marble or other carbonaceous rock.
2. Industrial sand operations utilizing acid flotation, alkaline flotation, or hydrofluoric acid flotation.
3. Industrial sand operations utilizing the acid leaching process.

In order to be covered under this rule, a facility must send a letter to the IDEM OWM called a Notice of Intent (NOI). IDEM has made available a NOI form for General Permits which can be found in [Attachment 2](#). The NOI letter must be sent to:

Indiana Department of Environmental Management
Office of Water Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206
Attn: Permits Section, General Permit Desk

The NOI letter shall include the following:

1. Name, mailing address, and location of the facility for which the notification is submitted.
2. Standard Industrial Classification (SIC) codes, as defined in 327 IAC 5, up to four digits, that best represent the principal products or activities provided by the facility.
3. The person's name, address, telephone number ownership status, and status as federal, state, private, public, or other entity.
4. The latitude and longitude of the approximate center of the facility to the nearest fifteen (15) seconds, or the nearest quarter section (if the section, township, and range are provided) in which the facility is located.
5. The name of receiving water, or, if the discharge is to a municipal separate storm sewer, the name of the municipal operator of the storm sewer and the ultimate receiving water.
6. A description of how the facility complies with the applicable requirements of the general permit rule.

7. Any additional NOI letter information required by the applicable general permit rule.
8. The NOI letter must be signed by a person meeting the signatory requirements in 327 IAC 15-4-3(g).

In reference to item 7 above, Rule 12 requires the following additional information be submitted with the NOI

- (1) Identification of each point source discharge. The identification shall include
 - The discharge location of each outfall and its associated receiving stream
 - The type of wastewater discharged through each outfall
 - An identifying outfall number. The numbering shall start at 001 for the first outfall, 002 for the second outfall, and continue in that manner until all outfalls are numbered.
 - A topographical map identifying the location of the operation, the receiving stream(s), and the location of each numbered outfall
- (2) The NOI letter must also include proof of publication of a notification statement in the newspaper of largest circulation in the area of the discharge. IDEM provides example wording for the notification statement at 327 IAC 15-12-5 (b).

For new discharges that meet the description of the general permit rule at 327 IAC 15-12, the NOI letter must be sent at least 15 days before the discharge begins. If you are already operating under an individual NPDES permit, the Notice of Intent letter must be sent at least 180 days prior to the expiration of the individual NPDES. The application fee is \$50.00, and it should be included with the NOI letter.

See [Attachment 2](#) for a copy of the NOI submittal form, instructions and requirements. Review these requirements thoroughly before proceeding with the Notice of Intent. [Attachment 2](#) also includes the specific language that must be published in the local paper.

Following the submittal of a NOI letter to IDEM and publication in the newspaper by the person requesting coverage, IDEM shall:

1. Review the NOI for applicability and for compliance; and
2. List this facility, the NPDES general permit tracking number, and the information contained in this notice in a monthly publication to be distributed by IDEM to all persons who have asked to receive NPDES general permit rule notification.

Under this rule, your discharge must be monitored and is limited as in the following table:

Parameter	Daily Minimum	Daily Maximum	Weekly Average	Units	Measurement Frequency	Sample Type
Flow	--	Report	--	MGD	4xYearly	Instantaneous
TSS (Total Suspended Solids)	--	--	30	Mg/l	4xYearly	Grab
pH	6.0	9.0	--	s.u.	4xYearly	Grab

You must comply with the following additional discharge requirements:

1. The discharge shall not cause excessive foam in the receiving waters.
2. The discharge shall be essentially free of floating and settleable solids.
3. The discharge shall not contain oil or other substances in amounts sufficient to create a visible film or sheen on the receiving waters.
4. The discharge shall be free of substances that are in amounts sufficient to be unsightly or deleterious or which produce color, odor, or other conditions in such a degree as to create a nuisance.

You must also follow the following sampling requirements:

1. Samples taken in compliance with the monitoring requirements in this section shall be taken at a point representative of the discharge but prior to entry into waters of Indiana.
2. The analytical and sampling methods used shall conform to the current version of 40 CFR 136 as referenced in 327 IAC 5-2-13(d)(1).
3. Samples and measurements taken as required in this rule shall be representative of the volume and nature of the monitored discharge.

In addition, you must comply with the following reporting requirements:

1. Monthly discharge monitoring reports.
2. For each measurement or sample taken, record the following information:
 - a. The exact place, date, and time of sampling.
 - b. The person(s) who performed the sampling or measurements.
 - c. The dates these analyses were performed.
 - d. The person(s) who performed the analyses.
 - e. The analytical techniques or methods used.
 - f. The results of all required analyses and measurements.

3. If you monitor any pollutant at the location(s) identified in the NOI letter more frequently than required under this rule, using approved analytical methods, the results of such monitoring shall be included in the calculation and reporting of the values required in the monthly discharge monitoring report. Such increased frequency shall also be indicated in this report.
4. All records shall be retained for a minimum of three (3) years. The 3-year period shall be extended in the case of ongoing litigation and/or as requested by the regional administrator or IDEM.

The permits are good for 5 years, at which time you may renew coverage under the general permit rule no later than 90 days from the expiration of your coverage.

COVERAGE UNDER AN INDIVIDUAL NPDES PERMIT

If your facility does not qualify for coverage under a general NPDES permit, you must apply for an individual NPDES permit.

You must apply for a permit 180 days before a new discharge begins or 180 days before your existing permit expires. The permit application process includes notification of parties that may be affected by your discharge. There are different application forms for different types of discharges. You can obtain these forms from the IDEM, Office of Water Quality see Appendix A for contact and address information.

The permit, once issued, will contain conditions which must be followed. These will include discharge limits, monitoring the discharge, recordkeeping and monthly reporting requirements. It is likely the individual permit will contain pollutant limits similar to those specified in the general permit (i.e., flow, total suspended solids, and pH).

It is very important that you read the permit and conditions and understand them. Whether or not you have an NPDES permit, if your process water, non-process water, or stormwater goes to a Publicly Owned Treatment Works (POTW), then the municipality must be notified. Depending on the nature and volume of the discharge, the POTW may issue a permit and impose discharge monitoring conditions and limits.

STORMWATER DISCHARGES

You are subject to stormwater regulations if any of the following conditions apply: 1) if your facility discharges stormwater, as described above; 2) if your facility is already covered by an NPDES permit for stormwater; 3) if your facility is determined to have stormwater discharges that contribute to a violation of water quality standards; or 4) if your facility is considered to be a significant contributor of pollutants to waters of the United States.

Stormwater runoff, snow melt runoff and surface runoff and drainage, if conveyed through a pipe, ditch or other conveyance, is regulated by the NPDES program, administered by IDEM. Discharges are regulated under “general” permits and individual permits. You do not need an

NPDES permit if your stormwater discharge goes to a combined sewer. However, if the stormwater is discharged to a storm sewer or to surface water, a permit is required.

Facilities have the option to apply for a general stormwater permit, or an individual stormwater permit. The concepts are similar to those mentioned earlier in this chapter for permitting the discharge of process and non-process water. It is simpler for the facility and the agency to use the general permit process. The general permit rules are found at 327 IAC 15.

STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY 327 IAC 15-5 (RULE 5)

Construction activity which involves land disturbance such as clearing, grubbing, excavation or deposition of soils can greatly accelerate the erosive effects of wind and water. Soil erosion not only affects the construction site but affects the water quality of downstream areas. The IMAA recommends that all its members practice soil erosion control activities during initial construction and continuing operations.

The State Water Pollution Control Board adopted the General Permit for Construction Activity Stormwater Runoff Control (Rule 5) in 1992. Rule 5 was updated in 2003. Although IDEM administers Rule 5, IDNR, Division of Soil Conservation or local agencies have been appointed to conduct inspections, cite violations and review permits. The purpose of this rule is to reduce pollutants, principally sediment, as a result of soil erosion, in Indiana water bodies. Soil erosion and sedimentation increase dramatically when land is disturbed at a construction site.

WHO DOES THIS APPLY TO?

This regulation applies to construction sites in the State which disturb one (1) acres or more. If you are mining in an active site with saleable stockpiles of product on the ground, **stripping is not considered to be a construction activity**. However, if you are starting a “Greenfield” site with no stockpiles of saleable product on the ground, the stripping activity (if more than 1 acre) is subject to Rule 5. Once product is piled on the ground, your facility may be subject to Rule 6 (see page 6-9 under the heading “Stormwater Discharge Permit for Industrial Activity”) or Rule 12 discussed previously in this Chapter.

COMPLIANCE PROCESS

To comply with Rule 5, you must:

- Ensure that a sufficient construction plan is completed and submitted to the Soil and Water Conservation District office in the county that the construction activity is taking place. Also submit the construction plan to any appropriate State or local soil erosion control authority.
- Following receipt of approval of the construction plan or expiration of the review period time limit, complete a sufficient Notice of Intent (NOI) letter, and submit, with appropriate fee, to IDEM.

- Ensure compliance with the rule during the construction activity and implementation of the construction plan.
- Notify IDEM in writing upon the completion of the construction project with a notice of termination letter.
- Ensure that all persons engaging in construction activities on a permitted project site comply with the applicable requirements of this rule and the approved construction plan.

Once the construction plan is approved, the NOI letter and check have been submitted to IDEM, and the appropriate training is completed, the land disturbing activities may begin.

THE CONSTRUCTION PLAN

The Construction Plan should be a combination of narrative information and plan drawings. The construction plan should include the following information, as listed in Rule 5 (327 IAC 15-5-6.5):

- (1) Project narrative and supporting documents, including the following information:
 - (A) An index indicating the location, in the construction plans, of all information required by this subsection.
 - (B) Description of the nature and purpose of the project.
 - (C) Legal description of the project site. The description should be to the nearest quarter section, township, and range, and include the civil township.
 - (D) Soil properties, characteristics, limitations, and hazards associated with the project site and the measures that will be integrated into the project to overcome or minimize adverse soil conditions.
 - (E) General construction sequence of how the project site will be built, including phases of construction.
 - (F) Hydrologic Unit Code (14 Digit) available from the United States Geological Survey (USGS).
 - (G) A reduced plat or project site map showing the lot numbers, lot boundaries, and road layout and names. The reduced map must be legible and submitted on a sheet or sheets no larger than eleven (11) inches by seventeen (17) inches for all phases or sections of the project site.
 - (H) Identification of any other state or federal water quality permits that are required for construction activities associated with the owner's project site.
- (2) Vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major roads, such as a USGS topographic quadrangle map or county or municipal road map.
- (3) An existing project site layout that must include the following information:
 - (A) Location and name of all wetlands, lakes, and water courses on or adjacent to the project site.
 - (B) Location of all existing structures on the project site.
 - (C) One hundred (100) year floodplains, floodway fringes, and floodways. Please note if none exists.

- (D) Soil map of the predominant soil types, as determined by the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) Soil Survey, or an equivalent publication, or as determined by a soil scientist. A soil legend must be included with the soil map.
- (E) Identification and delineation of vegetative cover, such as grass, weeds, brush, and trees, on the project site.
- (F) Land use of all adjacent properties.
- (G) Existing topography at a contour interval appropriate to indicate drainage patterns.
- (4) Final project site layout, including the following information:
 - (A) Location of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas.
 - (B) One hundred (100) year floodplains, floodway fringes, and floodways. Please note if none exists.
 - (C) Proposed final topography at a contour interval appropriate to indicate drainage patterns.
- (5) A grading plan, including the following information:
 - (A) Delineation of all proposed land disturbing activities, including off-site activities that will provide services to the project site.
 - (B) Location of all soil stockpiles and borrow areas.
 - (C) Information regarding any off-site borrow, stockpile, or disposal areas that are associated with a project site and under the control of the project site owner.
 - (D) Existing and proposed topographic information.
- (6) A drainage plan, including the following information:
 - (A) An estimate of the peak discharge, based on the ten (10) year storm event, of the project site for both preconstruction and post-construction conditions.
 - (B) Location, size, and dimensions of all storm water drainage systems, such as culverts, storm sewers, and conveyance channels.
 - (C) Locations where storm water may be directly discharged into ground water, such as abandoned wells or sinkholes. Please note if none exists.
 - (D) Locations of specific points where storm water discharge will leave the project site.
 - (E) Name of all receiving waters. If the discharge is to a separate municipal storm sewer, identify the name of the municipal operator and the ultimate receiving water.
 - (F) Location, size, and dimensions of features, such as permanent retention or detention facilities, including existing or manmade wetlands, used for the purpose of storm water management.
- (7) A storm water pollution prevention plan associated with construction activities. The plan must be designed to, at least, meet the requirements of sections 7 and 7.5 of this rule and must include the following:
 - (A) Location, dimensions, detailed specifications, and construction details of all temporary and permanent storm water quality measures.
 - (B) Temporary stabilization plans and sequence of implementation.
 - (C) Permanent stabilization plans and sequence of implementation.
 - (D) Temporary and permanent stabilization plans shall include the following:

- (i) Specifications and application rates for soil amendments and seed mixtures.
 - (ii) The type and application rate for anchored mulch.
- (E) Construction sequence describing the relationship between implementation of storm water quality measures and stages of construction activities.
- (F) Self-monitoring program including plan and procedures.
- (G) A description of potential pollutant sources associated with the construction activities that may reasonably be expected to add a significant amount of pollutants to storm water discharges.
- (H) Material handling and storage associated with construction activity shall meet the spill prevention and spill response requirements in 327 IAC 2-6.1.
- (8) The post-construction storm water pollution prevention plan. The plan must include the following information:
 - (A) A description of potential pollutant sources from the proposed land use, that may reasonably be expected to add a significant amount of pollutants to storm water discharges.
 - (B) Location, dimensions, detailed specifications, and construction details of all post-construction storm water quality measures.
 - (C) A description of measures that will be installed to control pollutants in storm water discharges that will occur after construction activities have been completed. Such practices include infiltration of run-off, flow reduction by use of open vegetated swales and natural depressions, buffer strip and riparian zone preservation, filter strip creation, minimization of land disturbance and surface imperviousness, maximization of open space, and storm water retention and detention ponds.
 - (D) A sequence describing when each post-construction storm water quality measure will be installed.
 - (E) Storm water quality measures that will remove or minimize pollutants from storm water run-off.
 - (F) Storm water quality measures that will be implemented to prevent or minimize adverse impacts to stream and riparian habitat.
 - (G) A narrative description of the maintenance guidelines for all post-construction storm water quality measures to facilitate their proper long term function. This narrative description shall be made available to future parties who will assume responsibility for the operation and maintenance of the post-construction storm water quality measures.

There are several resources available to aid in completing the construction plan. The Indiana Handbooks for Erosion Control in Developing Areas, by IDNR; and Field Office Technical Guide by the Soil Conservation Service, are two such resources. The Field Office Technical Guide by the Soil Conservation Office is a multi-volume set available for reference purposes at most County Soil Conservation offices. The National Stone, Sand and Gravel Association has published a Stormwater Management Guide for the aggregates industry. For information or to order the guide, contact:

National Stone, Sand and Gravel Association
1605 King St.
Alexandra, VA 22317
703-525-8788 or 800/342-1415

THE NOTICE OF INTENT FOR RULE 5

The State of Indiana has not developed a form letter for Notification of Intent (NOI) letters to comply with Rule 5.). IDEM has made available a NOI form for Rule 5 which can be found in [Attachment 3](#). This letter should be written on company letterhead and contain the following:

1. Address the NOI letter to:

Attention: Rule 5 Storm Water Coordinator
Indiana Department of Environmental Management
Office of Water Quality, Urban Wet Weather Section
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015
2. Specify that you are submitting the NOI letter to comply with 327 IAC 15-5, for stormwater run-off associated with construction activity. The “operator” is defined in 327 IAC 15-5-4 as the person required to submit the NOI letter under 327 IAC 15-5 and required to comply with the terms of the rule.
3. Provide the name, mailing address, and location of the project site for which the notification is submitted.
4. Provide the project site owner’s name, address, telephone number, email address (if available), and ownership status as federal, state, private, public or other entity.
5. Provide the contact person (if different than the project site owner), person’s name, company name, address, email address (if available), and telephone number.
6. A brief description of the construction project, including a statement of the total acreage of the project site. Total acreage claimed in the NOI letter shall be consistent with the acreage covered in the construction plan.
7. Estimated dates for initiation and completion of construction activities. Within 48 hours of the initiation of construction activity, the project owner must notify the commissioner and the appropriate plan reviewing agency of the actual project start date.

8. The latitude and longitude of the approximate center of the facility to the nearest fifteen (15) seconds, and the nearest quarter section, township, range and civil township in which the project is located.
9. Total impervious surface area, in square feet, of the final project site including structures, roads, parking lots and other similar improvements.
10. The number of acres to be involved in construction activities.
11. Provide the name of the receiving water(s), or, if the discharge is to a municipal separate storm sewer, the name of the municipal operator of the stormwater AND the ultimate receiving water for any point source discharges of stormwater from the disturbed area of the construction site. **Please note that the definition of point source (defined in 327 IAC 5-1-2(33)) is very broad.**
12. As applicable, a list of the MS4 areas designated under 327 IAC 15-13 within which the project site lies.
13. Provide a written certification by the operator that:
 - a. The storm water quality measures included in the construction plan comply with the requirements under 327 IAC 15-5-6.5, 327 IAC 15-5-7 and 327 IAC 15-5-7.5, and the storm water pollution prevention plan complies with all applicable federal, state, and local storm water requirements;
 - b. The measures required by 327 IAC 15-5-7 will be implemented in accordance with the storm water pollution prevention plan;
 - c. If the projected land disturbance is one (1) acre or more, the applicable soil and water conservation district, or other entity designated by the department has been sent a copy of the construction plan for review;
 - d. Storm water quality measures beyond those specified in the storm water pollution prevention plan will be implemented during the life of the permit if necessary to comply with 327 IAC 15-5-7; and
 - e. Implementation of storm water quality measure will be inspected by trained individuals.

NOTE: Construction plans should not be submitted to the IDEM. Construction plans are to be submitted to the local county *Soil and Water Conservation District (SWCD) Office and any other applicable local, county or state authority* (such as a county planning commission office).

14. Provide proof of publication in a newspaper of general circulation in the affected area that notified the public that a construction activity under 327 IAC 15-5 is to commence.
15. A notification from the SWCD, DNR-DSC, or other entity designated by the department as the reviewing agency indicating that the construction plans are sufficient to comply with the rule. This requirement may be waived if the project site owner has not received notification from the reviewing agency within the time frame specified in 327 IAC 15-5-6(b)(3).
16. Provide the name of the responsible corporation officer and/or written authorization for an alternate person or position to act as the duly authorized representative for that person, if appropriate, who will be responsible for all signatory representatives for the facility under 327 IAC 15-4-3(g).
17. Include the following certification statement:

“I certify under penalty of law that this document all attachments were prepared under my direction or supervision I accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”
18. The person identified in #13 must sign and date the NOI letter.
19. A \$100.00 application fee must submitted with the NOI. The check should be made payable to IDEM. Mail the NOI to the address identified in item #1, but please add “Attn: Cashier’s Office” at the bottom of the envelope whenever a fee is being submitted.

NOTE: *If you answer yes to any of the questions (a-c) below, you may be required to submit an individual application for those discharges in lieu of (or in addition to) the NOI letter. An individual application must be submitted at least 180 days prior to initiation of land disturbing activities.*

- a) Are any of the receiving waters identified in item 7 classified as outstanding state resource or exceptional use waters?
- b) Are any of the point source discharges referenced in item 7 already covered by an individual NPDES permit?
- c) Are any of the point source discharges referenced in item 7 comprised of anything other than stormwater? If so, what is the source of the additional discharge? Some

non-stormwater contributions to stormwater point source discharges are allowable under the NPDES general permit rule.

INDIVIDUAL APPLICATIONS FOR STORMWATER DISCHARGE

Facilities/operations which must submit an individual application due to exclusion clauses in 327 IAC 15-5 (such as having a direct discharge to an outstanding state resource water or an exceptional use stream) should use the same format for the individual application as is required for the NOI letter (see [Attachment 3](#)), except the heading of the letter should denote that the submittal is an “Individual Application for Construction Activity.” An individual application must be submitted at least 180 days prior to initiation of land disturbing activities. A construction plan must also be submitted to the county SWCD Office.

STORMWATER DISCHARGE PERMIT FOR INDUSTRIAL ACTIVITY (RULE 6)

Facilities with stormwater discharges from industrial or manufacturing sites must evaluate their need for a stormwater discharge permit under 327 IAC 15-6 (known as “Rule 6”).

WHO DOES THIS APPLY TO?

Industrial facilities must compare their SIC codes and operations to the list of applicability requirements listed at 327 IAC 15-6-2. One note specific to the aggregate industry, under 327 IAC 15-6-2(e), a sand, gravel, or dimension stone facility classified under SIC Code 14 is not subject to Rule 6 if its is regulated under a general permit issued under 327 IAC 15-12 and all the regulated facility’s storm water discharges are addressed by the general permit issued under 327 IAC 15-12.

APPLICATION PROCESS FOR RULE 6

To be covered under the general permit, submit a Notice of Intent (NOI) to be covered under the general permit rule. IDEM has made available a NOI form for Rule 6 which can be found in [Attachment 4](#). The NOI should be submitted to:

Indiana Department of Environmental Management
Office of Water Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206
Attention: Permits Section, General Permit Desk

The contents of the NOI under Rule 6 are not as detailed as the one for construction activity (Rule 5). The NOI should contain the following:

1. Name, mailing address, and location of the facility for which the notification is submitted.
2. Standard Industrial Classification (SIC) codes, up to four (4) digits, that best represent the principal products or activities provided by the facility.
3. The person's name, address, telephone number, e-mail address (if available), ownership status, and status as federal, state, private, public, or other entity.
4. The latitude and longitude of the approximate center of the facility to the nearest fifteen (15) seconds, and, if the section, township, and range are provided, the nearest quarter section in which the facility is located.
5. The name of receiving water, or, if the discharge is to a municipal separate storm sewer (MS4), the name of the municipal operator of the storm sewer and the ultimate receiving water.
6. A description of how the facility complies with the applicability requirements of the general permit rule.
7. Name of responsible corporate officer or written authorization for an alternate individual or position to act as the duly authorized representative for that individual, if appropriate, who will be responsible for all signatory responsibilities for the facility under 327 IAC 15-4-3(g).
8. Name and contact information of the individual who can provide assistance with information pertaining to the facility's permit.
9. A brief narrative description of the industrial processes performed at the facility.
10. Identification of the number and location of each outfall where storm water exposed to industrial activity discharges to a water of the state, including a narrative description of the industrial activity associated with the drainage area of each identified outfall.
11. Identification of substantially similar outfalls of storm water identified in subdivision (4) and the outfall to be monitored as representative of all such discharges. Include an explanation of the rationale used to identify why certain outfalls are similar.
12. The identification of past and present NPDES permits, if applicable.
13. Proof of publication of the following statement in the newspaper of largest circulation in the area of the discharge: "(Facility name, address, address of the location of the discharging facility, and the stream(s) receiving the discharge(s)) is submitting an NOI letter to notify the Indiana Department of Environmental Management of our intent to comply with the requirements under 327 IAC 15-6 to discharge storm water exposed to industrial activities."
14. The NOI letter must be signed by a person meeting the signatory requirements in 327 IAC 15-4-3(g).

The fee for either a general or an individual stormwater permit is **\$100.00** on an annual basis.

For newly constructed industrial facilities, the NOI letter shall be submitted ninety (90) days prior to start up of industrial operations. For existing industrial facilities regulated by this rule, the NOI letter must be submitted in accordance with 327 IAC 15-2-9.

An actual permit will not be issued, however, you may receive an acknowledgement letter from the IDEM. You must follow the requirements outlined in the Rule. Some of the key requirements include:

- Any change in NOI information must be reported as soon as practicable to IDEM. Changes which are reasonably expected to alter the characteristics of the discharge regulated under a general permit rule must be reported prior to the change.
- Cases of noncompliance must reported within one (1) business day of becoming aware of the occurrence to the Office of Enforcement (317) 232-8603. A written report must be sent within five (5) business days of the incident.
- The facility must conduct annual monitoring for pollutants listed at 327 IAC 15-6-7.3 and any other pollutant attributable to a facility's industrial activity that is reasonably expected to be present in the discharge.
- The facility must develop a written stormwater pollution prevention plan (SWPPP) for the industrial site per the requirements set forth in 327 IAC 15-6-7 within 365 days of a timely-submitted initial NOI letter or the expiration date of the previous permit term.
- The facility must submit an annual report to the IDEM that contains the following information:
 - (1) Any changes to the original NOI letter.
 - (2) Any changes to the facility, the facility's operations or industrial activities.
 - (3) During the second through fifth years of permit coverage, a copy of the comparison of all sampling data results included in the facility's SWP3.
 - (4) Any additional BMPs implemented, or corrective measures taken, as a result of sampling data results.

CONDITIONAL NO-EXPOSURE EXCLUSION FROM RULE 6

A condition of no-exposure exists at an industrial facility when all industrial materials and activities are protected by a storm-resistant shelter to prevent exposure to rain, snowmelt, and run-off

Facilities regulated under Rule 6 may opt to request to be excluded from the rule by:

1. Submitting a completed United States Environmental Protection Agency "No Exposure Certification" form 3310-11 (10-99) to IDEM.
2. Allowing IDEM to inspect the facility to evaluate the no-exposure condition
3. Allowing the IDEM to make the no-exposure inspection reports available to the public, and

4. Upon request, providing the local MS4 operator with a copy of the no-exposure certification form, allowing the local MS4 operator to inspect the facility and allowing public notice of the MS4 inspection reports.

The conditional no-exposure exclusion is available on a facility-wide basis only, not for individual outfalls, and a no-exposure certification must be provided for each facility qualifying for the no-exposure exclusion. Facilities considering the no-exposure exclusion should review the requirements and descriptions included at 327 IAC 15-6-12 and in the “Guidance Manual for Conditional Exclusion from Storm Water Permitting Based on “No Exposure” of Industrial Activities to Storm Water” (EPA 833-B-00-001 June 2000) to see if the condition of no exposure is present, can be achieved and can be maintained.

INDIVIDUAL APPLICATIONS FOR INDUSTRIAL STORMWATER DISCHARGE

In the rare instance where an aggregate facility/operation has outfalls discharging a combination of process waters and storm waters that are not covered under 327 IAC 15-12, the facility must apply for an individual NPDES discharge permit. The application would consist of an EPA Form 1 (general information), Form 2C (existing facilities) or 2D (new facilities) and Form 2F. Form 2F of the application package requires information for discharge of stormwater exposed to industrial activity. An individual application must be submitted at least 180 days prior to initiation of discharge or expiration of the previous permit period.

DOCUMENTING THAT YOUR PLANT IS NOT COVERED UNDER A SURFACE WATER OR STORMWATER DISCHARGE RULE

If your plant does not fall under any surface water or stormwater discharge rules, you should document this by using maps, drawings, or other information. Send a letter to the appropriate section of the Office of Water Quality on your company letterhead describing why you believe you are not covered and attach any relevant maps or drawings.

This documentation may be valuable in the future if a state or federal representative inspects your plant.

CHAPTER 6 – ATTACHMENT 1

Rule 12. Facilities Engaged in Sand, Gravel, Dimension Stone, or Crushed Stone Operations

Chapter 6 - Attachment 1

The following 326 IAC 15-12 rule is listed in the Indiana Administrative Code. Please note: as the Indiana Administrative Code is revised the Indiana General Assembly website is updated within a reasonable time period. For the most current version of the rule visit the following website <http://www.in.gov/legislative/iac/T03270/A00150.PDF>

Rule 12. Facilities Engaged in Sand, Gravel, Dimension Stone, or Crushed Stone Operations

327 IAC 15-12-1 Purpose

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 1. The purpose of this rule is to regulate wastewater discharges from sand, gravel, dimension stone, and crushed stone operations which utilize sedimentation basin treatment for:

- (1) pit dewatering;
- (2) channel machines;
- (3) broaching;
- (4) jet piercing;
- (5) scrubber water from wet scrubbers used for air pollution control;
- (6) dust suppression spray water;
- (7) wash water from spray bars for final screening operations; and
- (8) noncontact cooling water for cooling of:
 - (A) crusher bearings;
 - (B) drills;
 - (C) saws;
 - (D) dryers;
 - (E) pumps; and
 - (F) air compressors;

so that the public health, existing water uses, and aquatic biota are protected. (*Water Pollution Control Board; 327 IAC 15-12-1; filed May 25, 1994, 11:00 a.m.: 17 IR 2303*)

327 IAC 15-12-2 Definitions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3-1.5; IC 13-7-1

Sec. 2. In addition to the definitions contained in IC 13-7-1 and IC 13-1-3-1.5 and in 327 IAC 5 and 327 IAC 15-1-2, the following definitions apply throughout this rule:

- (1) "4 × yearly sample frequency" means the performance of the associated monitoring once any time during each of the four (4) annual quarters:
 - (A) January-February-March;
 - (B) April-May-June;
 - (C) July-August-September; and
 - (D) October-November-December.
- (2) "Broaching" means a drilling method whereupon successively larger and deeper holes are cut into the stone until the stone is removed between the holes. Water is used to control dust, wash away stone chips, and cool the drill.
- (3) "Channel machine" means a long, semi-automated, multiple-head chisel machine used primarily to quarry limestone. Stone chips created during chiseling must be washed constantly away with water.
- (4) "Concentration" means the mass of any given material present in a unit volume of liquid. Unless otherwise indicated in this rule, concentration values shall be expressed in milligrams per liter (mg/l).
- (5) "Feldspar" means any of a group of crystalline minerals that consists of aluminum silicates with either potassium, sodium, calcium, or barium.
- (6) "Feldspathic" means relating to or containing feldspar.
- (7) "Ilmenite" means an iron black mineral composed of iron, titanium, and oxygen.

(8) "Jet piercing" means fuel oil forced under pressure through a nozzle producing a high velocity jet flame which is combined with a stream of water to cut a channel by disintegration.

(9) "Pit dewatering" means any water that is impounded or that collects in the pit and is pumped, drained, or otherwise removed from the pit through the efforts of the pit operator. This term shall also include wet pit overflows caused solely by direct rainfall and/or ground water seepage.

(10) "Settleable solids" means that matter measured by the volumetric method specified in 40 CFR 434.64, which is: Fill an Imhoff cone to the one (1) liter mark with a thoroughly mixed sample. Allow to settle undisturbed for forty-five (45) minutes. Gently stir along the inside surface of the cone with a stirring rod. Allow to settle undisturbed for fifteen (15) minutes longer. Record the volume of settled material in the cone as milliliters per liter (ml/l). Where a separation of settleable and floating materials occurs, do not include the floating material in the reading. The method detection limit for measuring settleable solids shall be four-tenths (0.4) ml/l.

(11) "TSS" or "total suspended solids" means the mass of suspended matter in wastewater retained on a standard glass fiber filter after filtration of a well-mixed sample and after drying for one (1) hour at one hundred three degrees Celsius (103EC).

(Water Pollution Control Board; 327 IAC 15-12-2; filed May 25, 1994, 11:00 a.m.: 17 IR 2303; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2658)

327 IAC 15-12-3 Applicability

Authority: IC 13-14-8; IC 13-14-9; IC 13-15-1-2; IC 13-15-2-1; IC 13-18-3

Affected: IC 13-11-2; IC 13-18-4

Sec. 3. (a) This rule applies to all persons who:

(1) meet the NPDES general permit rule applicability requirements under 327 IAC 15-2-3; or

(2) have an existing point source discharge of wastewater controlled by a valid individual NPDES permit.

(b) Facilities not authorized to discharge by this NPDES general permit rule and are required to obtain an individual NPDES permit are as follows:

(1) Crushed stone operations utilizing flotation agents to remove impurities from marble or other carbonaceous rock. The flotation agents utilized include:

(A) organic amines;

(B) fatty acids; and

(C) pine oils.

(2) Industrial sand operations utilizing:

(A) acid flotation to effect removal of iron oxide and ilmenite impurities;

(B) alkaline flotation to remove aluminate bearing materials; or

(C) hydrofluoric acid flotation for removal of feldspar.

(3) Industrial sand operations utilizing the acid leaching process. The acid leaching process pertains to the removal of iron from feldspathic sand for use in glass manufacturing. A strong hydrochloric or sulfuric acid is used.

The types of process wastewater identified in this subsection can contain varying concentrations of substances that may require water quality based effluent limits or best professional judgment limits.

(Water Pollution Control Board; 327 IAC 15-12-3; filed May 25, 1994, 11:00 a.m.: 17 IR 2303; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2658; filed Jan 14, 1997, 12:00 p.m.: 20 IR 1478)

327 IAC 15-12-4 General permit rule boundary

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 4. Facilities existing within the boundaries of Indiana affected by this rule are regulated under this rule.

(Water Pollution Control Board; 327 IAC 15-12-4; filed May 25, 1994, 11:00 a.m.: 17 IR 2304)

327 IAC 15-12-5 NOI letter requirements under this rule

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 5. (a) In addition to the NOI letter requirements contained in 327 IAC 15-3, a person regulated under this rule must identify in the NOI letter each point source discharge regulated under this rule. This identification of point source discharge shall include the following:

- (1) The discharge location of each outfall and its associated receiving stream.
- (2) The type of wastewater discharged through each outfall.
- (3) An identifying outfall number. The numbering shall start at 001 for the first outfall, 002 for the second outfall, and continue in that manner until all outfalls are numbered.
- (4) A topographical map identifying the location of the operation, the receiving stream(s), and the location of each numbered outfall.

(b) The NOI letter must also include proof of publication of the following statement in a newspaper of largest circulation in the area of the discharge:

"(Your facility name, address, address of the location of the discharging facility, and the stream(s) receiving the discharge(s)) is submitting a Notice of Intent letter to notify the Indiana Department of Environmental Management of our intent to comply with the requirements under 327 IAC 15-12 to discharge wastewater associated with sand, gravel, dimension stone, or crushed stone operations. Any person aggrieved by this action may appeal in writing to the Technical Secretary of the Water Pollution Control Board for an adjudicatory hearing on the question of whether this facility should operate under this NPDES general permit rule. An appeal must be postmarked no later than fifteen (15) days from the date of this public notice. Such a written request for an adjudicatory hearing must:

- (A) state the name and address of the person making the request;
- (B) identify the interest of the person making the request;
- (C) identify any persons represented by the person making the request;
- (D) state with particularity the reasons for the request;
- (E) state with particularity the issues proposed for consideration at the hearing; and
- (F) state with particularity the reasons why the NPDES general permit rule should not be available to the discharger identified in this notice.

Any such request shall be mailed or delivered to:

Technical Secretary
Water Pollution Control Board
P.O. Box 6167
Indianapolis, Indiana 46206-6167".

(c) Following submittal of a NOI letter to IDEM and publication in the newspaper by the person requesting coverage under subsection (b), IDEM shall do the following:

- (1) Review the NOI for applicability pursuant to section 3 of this rule and for compliance with the requirements of subsection (a).
- (2) List this facility, the NPDES general permit tracking number, and the information contained in this notice in a monthly publication to be distributed by IDEM to all persons who have asked to receive NPDES general permit rule notification. This monthly publication shall be issued by IDEM on the fifteenth day of every month and shall identify all facilities which met both the NOI and newspaper publication requirements in the preceding month. Requests to be placed on the NPDES general permit rule notification list shall be mailed or delivered to the address at 327 IAC 15-3-1.

(d) IDEM's monthly publication will also contain the following instructions:

"Any person aggrieved by this action may appeal in writing to the Technical Secretary of the Water Pollution Control Board for an adjudicatory hearing on the question of whether this facility should operate under this NPDES general permit rule. An appeal must be postmarked no later than fifteen (15) days from the publication date of this public notice. Such a written request for an adjudicatory hearing must:

- (A) state the name and address of the person making the request;
- (B) identify the interest of the person making the request;
- (C) identify any persons represented by the person making the request;
- (D) state with particularity the reasons for the request;
- (E) state with particularity the issues proposed for consideration at the hearing; and
- (F) identify the NPDES general permit rule terms and conditions which, in the judgment of the person making the request, would be appropriate to satisfy the requirements of the law governing this NPDES general permit rule. If any person filing such objections desires any part of this NPDES general permit rule to be stayed pending the outcome of the appeal, a specific request for such must be included in the request, identifying those parts of the rule to be stayed.

Any such request shall be mailed or delivered to:

Technical Secretary
Water Pollution Control Board
P.O. Box 6167
Indianapolis, Indiana 46206-6167".

(Water Pollution Control Board; 327 IAC 15-12-5; filed May 25, 1994, 11:00 a.m.: 17 IR 2304; errata filed Jul 11, 1994, 3:00 p.m.: 17 IR 2658)

327 IAC 15-12-6 Deadline for submittal of NOI letter; additional information

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 6. (a) For any person operating under an existing individual NPDES permit, that regulates a wastewater discharge affected by this NPDES general permit rule, the information required under 327 IAC 15-3 shall be submitted to the commissioner any time between the effective date of the existing individual NPDES permit and one hundred eighty (180) days prior to the expiration date of the existing individual NPDES permit, unless the commissioner determines that a later date is acceptable. For any person operating under an individual NPDES permit that regulates a wastewater discharge affected by this NPDES general permit rule and that has expired and has been administratively extended, the information required under 327 IAC 15-3 shall be submitted to the commissioner within ninety (90) days of the effective date of this NPDES general permit rule, unless the commissioner determines that a later date is acceptable.

(b) For a person proposing a new discharge, the information required under 327 IAC 15-3 shall be submitted to the commissioner fifteen (15) days before the date on which the discharge is to commence as allowed in 327 IAC 15-3-3. *(Water Pollution Control Board; 327 IAC 15-12-6; filed May 25, 1994, 11:00 a.m.: 17 IR 2305)*

327 IAC 15-12-7 General conditions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 7. (a) A person regulated under this rule is authorized to discharge all wastewaters regulated under this rule through the outfalls identified in the NOI letter in accordance with this rule. Such discharge shall be limited and monitored as specified below:

Parameter	Daily Minimum	Daily Maximum	Weekly Average	Units	Measurement Frequency	Sample Type
Flow	-	Report	-	MGD	4XYearly	Instantaneous
TSS	-	-	30	mg/l	4XYearly	Grab
pH	6.0	9.0	-	s.u.	4XYearly	Grab

(b) A person regulated under this rule shall comply with the following additional discharge requirements:

- (1) The discharge shall not cause excessive foam in the receiving waters.
- (2) The discharge shall be essentially free of floating and settleable solids.
- (3) The discharge shall not contain oil or other substances in amounts sufficient to create a visible film or sheen on the receiving waters.
- (4) The discharge shall be free of substances that are in amounts sufficient to be unsightly or deleterious or which produce color, odor, or other conditions in such a degree as to create a nuisance.

(c) A person regulated under this rule shall comply with the following sampling requirements:

- (1) Samples taken in compliance with the monitoring requirements in this section shall be taken at a point representative of the discharge but prior to entry into waters of Indiana.
- (2) The analytical and sampling methods used shall conform to the current version of 40 CFR 136 as referenced in 327 IAC 5-2-13(d)(1).
- (3) Samples and measurements taken as required in this section shall be representative of the volume and nature of the monitored discharge.

(d) A person regulated under this rule shall comply with the following reporting requirements:

- (1) Monthly discharge monitoring reports shall be submitted to the data management section at the address listed in 327 IAC 15-3-1, containing results obtained during the previous month and shall be postmarked no later than the

twenty-eighth day of the month following each completed monitoring period. During a month in which no discharge occurs, a person regulated under this rule shall submit the report stating that no discharge occurred.

(2) For each measurement or sample taken pursuant to the requirements of this rule, the facility shall record the following information:

- (A) The exact place, date, and time of sampling.
- (B) The person(s) who performed the sampling or measurements.
- (C) The dates the analyses were performed.
- (D) The person(s) who performed the analyses.
- (E) The analytical techniques or methods used.
- (F) The results of all required analyses and measurements.

(3) Monitoring of any pollutant at the location(s) identified in the NOI letter more frequently than required under this rule, using approved analytical methods, the results of such monitoring shall be included in the calculation and reporting of the values required in the monthly discharge monitoring report. Such increased frequency shall also be indicated in this report.

(4) All records and information resulting from the monitoring activities required under this rule, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years. When the original records are kept at another location, a copy of all such records shall be kept at the facility. The three (3) year period shall be extended:

- (A) automatically during the course of any unresolved litigation regarding the discharge of pollutants by the facility or regarding promulgated effluent guidelines applicable to the facility; or
- (B) as requested by the regional administrator or the Indiana department of environmental management.

(Water Pollution Control Board; 327 IAC 15-12-7; filed May 25, 1994, 11:00 a.m.: 17 IR 2305)

327 IAC 15-12-8 Standard conditions

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 8. In addition to the conditions set forth in this rule, the standard conditions for the NPDES general permit rule under 327 IAC 15-4 shall apply also to this rule. *(Water Pollution Control Board; 327 IAC 15-12-8; filed May 25, 1994, 11:00 a.m.: 17 IR 2306)*

327 IAC 15-12-9 Inspection and enforcement

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 9. (a) The commissioner and/or designated representative may inspect any facility regulated under this rule at any time.

(b) Any person violating any provision of this rule shall be subject to enforcement and penalty as set forth under 327 IAC 15-1-4. *(Water Pollution Control Board; 327 IAC 15-12-9; filed May 25, 1994, 11:00 a.m.: 17 IR 2306)*

327 IAC 15-12-10 Duration of coverage

Authority: IC 13-1-3-4; IC 13-1-3-7; IC 13-7-7; IC 13-7-10-1

Affected: IC 13-1-3; IC 13-7

Sec. 10. Coverage under this rule is granted by the commissioner for a period of five (5) years from the date coverage commences. To obtain renewal of coverage under this general permit rule, the information required under 327 IAC 15-3 shall be submitted to the commissioner within ninety (90) days of the termination of coverage under this NPDES general permit rule, unless the commissioner determines that a later date is acceptable. *(Water Pollution Control Board; 327 IAC 15-12-10; filed May 25, 1994, 11:00 a.m.: 17 IR 2306)*

CHAPTER 6 - ATTACHMENT 2
NPDES General Permits Notice of Intent Submittal Form

The following form is available on the IDEM website. Please note: IDEM revises State Forms periodically. The IDEM website should provide the most up to date form available. For the most current versions of the forms visit the following websites

<http://www.state.in.us/icpr/webfile/formsdiv/49401.pdf>.



NPDES General Permit Notice of Intent Submittal Application

State Form 49401 (5-99)

Approved by State Board of Accounts, 1999

Indiana Department of Environmental Management

Office of Water Management, Permits Section

I. Application Fee: \$50

1. Total Amount Submitted	2. Check Number
---------------------------	-----------------

II. Type of Permit

1. Permit Type New Permit <input type="checkbox"/> Permit Renewal <input type="checkbox"/>	2. If a renewal, have you submitted your Annual Permit Fees Yes <input type="checkbox"/> Date Submitted _____ No <input type="checkbox"/>
3. If a renewal, Current NPDES Permit Number	

III. Facility Information

1. Facility Name	3. Facility Mailing Address
3. Facility Location (if different than mailing address)	4. Contact and Telephone Number

IV. Type of Notice of Intent Enclosed (Check Box)

<input type="checkbox"/> (327 IAC 15-7) Facilities Engaged in Mining of Coal, Coal Processing and Reclamation Activities <input type="checkbox"/> (327 IAC 15-8) Noncontact Cooling Water <input type="checkbox"/> (327 IAC 15-9) Petroleum Product Terminals <input type="checkbox"/> (327 IAC 15-10) Groundwater Petroleum Remediation System <input type="checkbox"/> (327 IAC 15-11) Hydrostatic Testing of Commercial Pipelines <input type="checkbox"/> (327 IAC 15-12) Sand, Gravel, Dimension Stone or Crushed Stone Operations
THIS COMPLETED SUBMITTAL APPLICATION, ALONG WITH ALL REQUIRED FEES, PROOF OF PUBLIC NOTICE PUBLICATION, AND NOTICE OF INTENT LETTER SHOULD BE MAILED TO: <div>Indiana Department of Environmental Management Office of Water Management Permits Section 100 N. Senate Ave. P.O. Box 6015 Indianapolis, Indiana 46206-6015</div>

CHAPTER 6 - ATTACHMENT 3
Rule 5 Notice of Intent Submittal Form

The following form is available on the IDEM website. Please note: IDEM may periodically revise State forms. The IDEM website should provide the most up to date form available. For the most current versions of the forms visit the following websites

<http://www.in.gov/icpr/webfile/formsdiv/47487.pdf>



NOTICE OF INTENT (NOI) STORM WATER RUNOFF ASSOCIATED WITH CONSTRUCTION ACTIVITY

State Form 47487 (R6 / 9-04)

Approved by State Board of Accounts 2004
Indiana Department of Environmental Management
Drinking Water Branch

Submission of this Notice of Intent letter constitutes notice that the project site owner is applying for coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit Rule for Storm Water Discharges Associated with Construction Activity. Permitted project site owners are required to comply with all terms and conditions of the General Permit Rule 327 IAC 15-5 (Rule 5).

Check the type of Submittal: Initial Amendment Renewal

(Permit Number below required for Renewals and Amendments Only - Not required for Initial Submittal)

Project Name and Location:

Project Permit # _____ Project Name: _____ County: _____

Brief Description of Project Location: _____

Latitude Deg. ____ / Min. ____ / Sec. ____ **and** Quarter _____ Section _____

Longitude Deg. ____ / Min. ____ / Sec. ____ Township _____ Range _____

Does all or part of this project lie within the jurisdictional boundaries of a Municipal Separate Storm Sewer System (MS4) Yes No If yes, please name the MS4(s): _____

Project Site Owner and Project Contact Information:

Company Name (If Applicable): _____

Project Site Owner's Name (An Individual): _____ Title/Position: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ E-Mail Address (If Available): _____

Ownership Status (check one): Governmental Agency: Federal State Local

Non-Governmental: Public Private Other (Explain): _____

Contact Person: _____ Affiliation with Project Site Owner: _____

Company Name: _____

Address (if different from above): _____

City: _____ State: _____ Zip: _____

Phone: _____ E-Mail Address (If Available): _____

Project Description:

Residential-Single Family Residential-Multi-Family Commercial Industrial Other _____

Discharge Information:

Name of Receiving Water: _____

(If applicable, name of municipal operator of storm sewer. Please note that even if a retention pond is present on the property, the name of the nearest possible receiving water is required).

Project Acreage:

Total Acreage: _____ Acres Proposed Acreage to be Disturbed: _____ Acres

Total Impervious Surface Area (Estimated for Completed Project): _____ Square Feet

(as defined in 327 IAC 15-5-4(16) including structures, roads, parking lots, and other similar improvements)

Timetable:

Start Date: _____ and Estimated End Date for all Land Disturbing Activity: _____

NOTE: Within forty-eight hours of the initiation of construction activity, the project site owner must notify the appropriate plan reviewing agency of the actual project start date.

(Continued on Reverse Side)

Construction Plan Certification:

By signing this Notice of Intent letter, I certify the following:

- A. The storm water quality measures included in the construction plan comply with the requirements of 327 IAC 15-5-6.5, 327 IAC 15-5-7, and 327 IAC 15-5-7.5;
- B. the storm water pollution prevention plan complies with all applicable federal, state, and local storm water requirements;
- C. the measures required by 327 IAC 15-5-7 and 327 IAC 15-5-7.5 will be implemented in accordance with the storm water pollution prevention plan;
- D. if the projected land disturbance is one (1) acre or more, the applicable Soil and Water Conservation District or other entity designated by the Department, has been sent a copy of the construction plan for review;
- E. storm water quality measures beyond those specified in the storm water pollution prevention plan will be implemented during the life of the permit if necessary to comply with 327 IAC 15-5-7; and
- F. implementation of storm water quality measures will be inspected by trained individuals.

In addition to this form, I have enclosed the Following:

Verification by the reviewing agency of acceptance of the construction plan.

Proof of publication in a newspaper of general circulation in the affected area that notified the public that a construction activity is to commence, including all required elements contained in 327 IAC 15-5-5 (9).

\$100 check or money order payable to the Indiana Department of Environmental Management. If the project lies solely within the permitted jurisdiction of an MS4 **and is regulated by the MS4 under 327 IAC 15-13 – a fee is not required with submittal of this Notice of Intent**

A permit issued under 327 IAC 15-5 is granted by the commissioner for a period of five (5) years from the date coverage commences. Once the five (5) year permit term duration is reached, a general permit issued under this rule will be considered expired, and, as necessary for construction activity continuation, a new Notice of Intent letter would need to be submitted ninety (90) days prior to the termination of coverage.

Project Site Owner Responsibility Statement:

By signing this Notice of Intent letter, I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name of Project Owner _____

Signature of Project Owner _____ Date: _____

This Notice of Intent must be signed by an individual meeting the signatory requirements in 327 IAC 15-4-3(g) and submitted in accordance with 327 IAC 15-5-6.

**Mail this form to: Indiana Department of Environmental Management
Urban Wet Weather Section
Cashiers Office Attn: OWQ Rule 5
100 North Senate Avenue
Indianapolis, IN 46204**

327 IAC 15-5-6 (a) also requires a copy of the completed Notice of Intent letter be submitted to the local Soil and Water Conservation District or other entity designated by the Department, where the land disturbing activity is to occur.

Questions regarding the development of the Construction Plan and/or field implementation of 327 IAC 15-5 may be directed to your local Soil and Water Conservation District office or the Department of Natural Resources at 317-233-3870. Questions regarding the Notice of Intent may be directed to the Rule 5 contact person at 317/233-1864 or 800/451-6027 ext 31864.

CHAPTER 6 - ATTACHMENT 4
Rule 6 Notice of Intent Submittal Form

The following form is available on the IDEM website. Please note: IDEM revises State forms periodically. The IDEM website should provide the most up to date form available. For the most current versions of the forms visit the following websites

<http://www.in.gov/icpr/webfile/formsdiv/51286.pdf>



RULE 6 NOTICE OF INTENT (NOI) LETTER

State Form 51286 (R4 / 10-04)

Approved by State Board of Accounts, 2004
INDIANA DEPARTMENT OF ENVIRONMENTAL
MANAGEMENT

For questions regarding this form, contact:

IDEM – Rule 6 Coordinator

100 North Senate Avenue, Rm 1255

Indianapolis, IN 46204

Phone: (317) 233-0202 or

(800) 451-6027, ext. 30202 (within Indiana)

Web Access:

<http://www.IN.gov/idem/water/npdes/permits/wetwthr/storm/index.html>

NOTE: • This form must be used to apply for a general permit pursuant to 327 IAC 15-6.

• Please type or print in ink.

• Return this form, required addenda, and payment by mail to the IDEM Rule 6 Coordinator at the address listed in the box on the upper-right.

EXCLUSIONS

Permit coverage under 327 IAC 15-6 applies to all entities that:

1. are not required to obtain an individual NPDES permit under 327 IAC 15-2-9(b);
2. meet the general permit rule applicability requirements under 327 IAC 15-2-3;
3. have not received an approved "No Exposure" exclusion for storm water permitting;
4. have a discharge composed entirely of storm water and allowed non-storm water contributions; and
5. operate, maintain, or otherwise have responsibility for an industrial facility meeting the applicability requirements of 327 IAC 15-6-2.

APPLICATION TYPE (check one)

Initial NOI letter

Renewal NOI letter

Amended NOI letter

Was there a change of ownership since the last NOI letter?

Yes No

If an renewal or amended NOI letter,
NPDES Permit #: INR

PART A: GENERAL INFORMATION FOR FACILITY

1. Facility name:

2. Primary Standard Industrial Classification (SIC) Code for the facility (4 digits):

3. Facility location address:

City
Town
Village
Of:

ZIP Code:

County:

4. Longitude and Latitude of the approximate center of the facility to the nearest fifteen (15) seconds

Decimal Longitude:

Decimal Latitude:

LONGITUDE

Degrees

Minutes

Seconds

°

,

”

LATITUDE

Degrees

Minutes

Seconds

°

,

”

5. On-site Facility Contact name:

6. On-site Facility Contact title:

7. On-site Facility Contact phone number:

8. On-site Facility Contact facsimile number (if applicable):

9. On-site Facility Contact e-mail address (if applicable):

10. Has the facility been issued a past or present NPDES permit? (if yes, provide permit numbers)

Yes

No

Permit Number(s): IN-

IN-

IN-

IN-

11. Brief narrative description of the industrial processes performed at the facility (attach additional sheets if necessary):

PART B: GENERAL INFORMATION FOR RESPONSIBLE INDIVIDUAL

12. Responsible Individual name:

13. Responsible Individual title:

14. Responsible Individual mailing address:

City:

State:

ZIP Code:

15. Responsible Individual phone number:

16. Responsible Individual facsimile number (if applicable):

17. Responsible Individual e- mail address (if applicable):

PART C: GENERAL INFORMATION FOR REGISTERED AGENT (CORPORATIONS ONLY)

18. Registered Agent name:

19. Registered Agent title:

20. Registered Agent mailing address:

City:

State:

ZIP Code:

21. Registered Agent phone number:

22. Registered Agent facsimile number (if applicable):

23. Registered Agent e-mail address (if applicable):

PART D: GENERAL INFORMATION FOR STORM WATER DISCHARGE(S) FROM FACILITY

24. Identification of the number and location of each outfall where storm water exposed to industrial activity discharges to a water of the state, including a narrative description of the industrial activity associated with the drainage area of each identified outfall:

25. Identification of any outfalls, listed above in item 24, that are substantially similar (Include reason as to why outfalls are deemed similar):

26. Identification of the outfall(s) to be monitored as representative of all such discharges:

27. Identification of receiving water(s) for the storm water discharge outfall(s) identified above in item 24:

28. Does the facility discharge storm water into a municipal separate storm sewer system (MS4)? (If yes, provide contact person information):

Yes No

Contact person for the MS4 entity: _____

Phone number for the MS4 entity contact person: _____

PART E: MATERIALS TO BE SUBMITTED WITH THIS NOI LETTER

■ In addition to the information in Parts A, B, C, and D facility representative must provide the following (check when completed):

- 1) Proof of publication in a newspaper of largest circulation in the affected area.

PART F: FEES, CERTIFICATION, AND SIGNATURE

- Upon submission of this NOI letter, the responsible individual or registered agent shall pay a fee in the amount of fifty dollars (\$50). Make all checks and money orders payable to "IDEM."
- Pursuant to 327 IAC 15, the fee is **NOT**:
 - Transferable from one (1) facility location to another;
 - Transferable from one (1) person to another;
 - Transferable to any other type of permit issued by IDEM; or
 - Refundable.

Unless requested by the responsible individual or registered agent and approved by IDEM within three (3) days of submittal to IDEM or prior to the NOI letter processing by IDEM, whichever is earlier.

- There is also an annual fee of one hundred dollars (\$100), for which you will be billed.
- Pursuant to 327 IAC 15, the NOI letter is **NOT**:
 - Transferable from one (1) facility location to another (a new NOI letter is required for each facility location);
 - Transferable from one (1) facility name to another at the same location (a new NOI letter is required for a name change to the facility location).
- Pursuant to 327 IAC 15, the annual fee requirement is terminated:
 - When a written request for the "no exposure" exclusion from the facility is approved by IDEM;
- When a period of five (5) years passes, from the date of the NOI letter submittal. (Within ninety (90) days from the five (5) year permit term ending, a new, reapplication NOI letter must be submitted.).
- Allow a minimum of four (4) weeks for processing the NOI letter information and receipt of your Notice of Sufficiency.
- Make sure you have completed all appropriate sections of this NOI letter and have included all required addenda. Sign and date the NOI letter and return it to the address shown on page one (1) of this NOI letter. Incomplete or incorrect NOI letters will result in a delay in processing and issuance of your Notice of Sufficiency.
- Unless not applicable, all information requested in this NOI letter is MANDATORY for the administration and processing of your permit pursuant to 327 IAC 15-6. All data received will be regarded as a public record.

■ The persons listed in "Part B: Responsible Individual" must sign the following certification statement:

"By signing this NOI letter, I hereby certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Type or print Responsible Individual Name: _____

Signature of Responsible Individual: _____

Date: _____

(mm/dd/year)

APPENDIX A: SUPPLEMENTARY INSTRUCTIONS

Part A, Item #2: Enter the 4-digit Standard Industrial Classification (SIC) code which identifies the facility's primary activity. SIC codes can be obtained from the Standard Industrial Classification Manual, 1987, by accessing the Occupational Safety and Health Administration (OSHA) web site at <http://www.osha.gov/oshstats/sicser.html>, or by contacting the Indiana Department of Workforce Development at 1-317-232-7458.

Part A, Item #4: Enter the longitude and latitude of the approximate center of the facility in degrees/minutes/seconds. Longitude and latitude can be obtained from United States Geological Survey (USGS) quadrangle or topographic maps, by calling 1-888-275-8747, or by accessing a locational web site at <http://www.geocode.com> and conducting a search based on the facility street address.

Longitude and latitude of the approximate center of the facility must be converted to degrees, minutes, and seconds for proper entry on the NOI letter. To convert decimal longitude and latitude to degrees/minutes/seconds, follow the steps in the following example:

Example: Convert decimal latitude 45.1234567 to degrees, minutes, and seconds

- a) The numbers to the left of the decimal point are the degrees: 45.
- b) To obtain minutes, multiply the first four numbers to the right of the decimal point by 0.006: $1234 \times 0.006 = 7.404$.
- c) The numbers to the left of the decimal point in the result obtained in (b) are the minutes: 7.
- d) To obtain seconds, multiply the remaining three numbers to the right of the decimal from the result obtained in (b) by 0.06: $404 \times 0.06 = 24.24$. Since the numbers to the right of the decimal point are not used, the result is 24 seconds.
- e) The conversion for 45.1234567 = 45 degrees, 7 minutes, and 24 seconds.

Part A, Item #11: Enter a brief narrative description of the industrial processes that occur at the facility. This description should include:

- a) raw materials;
- b) processes (including general chemical additives) utilized to create intermediary or final products; and
- c) products created.

To provide an adequate narrative description, please create a similar text format to the following example:

Example: Lead-acid battery reclamation

The facility utilizes a battery breaker and secondary lead smelter to create lead ingots. The lead ingots are sold for use in battery production. The broken battery casings, other solid components, and waste acid are disposed of as wastestreams.

Part B: For purposes of this rule, "responsible individual" means:

- (A) For a corporation,
 - (1) a president, secretary, treasurer, any vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation; or
 - (2) the manager of one or more manufacturing, production, or operating facilities employing more than two hundred fifty (250) persons or having gross annual sales or expenditures exceeding twenty-five million dollars (\$25,000,000), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
- (B) For a partnership or sole proprietorship,
 - (1) a general partner or the proprietor, respectively.

Part C: For purposes of this rule, "registered agent" means an individual who:

- (A) is the corporation's agent for service of process, notice, or demand required or permitted by law to be served on the corporation; and
- (B) is registered along with a business office with the Indiana Secretary of State's Office.

CHAPTER 7

WATER WITHDRAWAL FACILITY REGISTRATION AND SAFE DRINKING WATER ACT REQUIREMENTS

INTRODUCTION

The Indiana Department of Natural Resources (IDNR) Indiana Code (IC) 14-25-7 (formerly known as IC 13-2-6.1) designates the Natural Resources Commission (Commission) and delegates the Indiana Department of Natural Resources (IDNR) to manage water resources in Indiana. The collection of water for process or consumptive use is thereby regulated by the IDNR. Some local agencies have ordinances that specify further regulations for the use of water resources. Check with your county and city offices and the local water companies to determine whether they have regulations for the use of surface and groundwater.

WHO DOES THE LAW APPLY TO?

The regulations pertaining to high capacity water use appear in IC 14-25-7 (see [Attachment 1](#)). These regulations require that every person who has a facility with a significant water withdrawal shall register it with the Commission and the IDNR. A **significant water withdraw facility** is one that, in the aggregate from all sources and by all methods, has the capability of withdrawing more than one hundred thousand (100,000) gallons of ground water, surface water, or ground and surface water combined in one (1) day.

All significant water withdrawal facilities must be registered within three months after the facility is operational. The owner of every registered significant water withdrawal facility must submit a verified report to IDNR after the end of each calendar year (March 31) of the amounts of water withdrawn during that previous calendar year.

APPLICATION AND REPORTING PROCESS

The IDNR form used to register significant water withdrawal facilities is titled Registration of a Significant Water Withdrawal Facility (State Form 20094 (R3/8-98)). A blank copy of this form as well as the detailed directions for filling this form out can be found in [Attachment 2](#). Once completed, the form is sent to IDNR, Division of Water, at the address given in the instructions.

Once you have registered your facility, IDNR will mail you a form which you must use to report annual withdrawal of water. You will receive the form in December, and the form must be filed by March 31 of each year for the reporting period of the previous calendar year (January through December). The form requires you to report usage for each month, so you must keep monthly records.

TEMPORARY OR PERMANENT ABANDONMENT OF GROUNDWATER WELLS

If a water well is not in use, regulations apply to the temporary or permanent abandonment of the well. See [Attachment 3](#) for a copy of rules that address well abandonment (312 IAC 13-10-1 and 13-10-2).

CLOSURE OF WELLS

TEMPORARY ABANDONMENT (312 IAC 13-10-1)

This regulation states that a well which has not been used for more than three (3) months without being permanently abandoned must be sealed at or above the ground surface by a welded, threaded, or mechanically attached watertight cap. Further, the well shall be maintained so that the well does not become a source or channel of groundwater contamination. Once the well achieves compliance with this rule, the well must be maintained this way until it is returned to active use or permanently closed.

PERMANENT ABANDONMENT (312 IAC 13-10-2)

This rule establishes criteria for the permanent abandonment of water wells based on the abandonment date.

The permanent abandonment of a well which was abandoned **before January 1, 1988**, must be sealed at or above the ground surface by a welded, threaded, or mechanically attached watertight cap. The well must then be maintained so that it does not become a source or channel of groundwater contamination. A cased or uncased bucket well or hand dug well that was abandoned before January 1, 1988, must be covered with a concrete slab, equipped with a reinforced cover constructed of pressure treated lumber and protected by a roof (except if the cover would come in direct contact with groundwater), or in an otherwise IDNR approved manner. Although the rules do not require wells abandoned before January 1, 1988 to be plugged, the IDNR recommends that all abandoned wells be plugged.

The permanent abandonment of a well which was abandoned **after December 31, 1987**, shall be plugged by a licensed water well driller with a material and in a manner approved by IDNR. The plugging material and plugging methods and procedures are rather detailed and are described in 312 IAC 13-10-2 Sec. 2. (e) (1 – 9). If the well is not equipped with a casing, it must be plugged within seventy-two (72) hours of completion.

If the **date of abandonment is not known**, the well should be plugged as if it were abandoned after December 31, 1987. Regardless of the date of abandonment of the well, or methods, procedures, and materials used to abandon the well, IDNR must be notified in writing within 30 days of the completion of the plugging activities of a permanent well abandonment.

IMPACTING A SMALL CAPACITY WELL THROUGH THE OPERATION OF A HIGH CAPACITY WELL (IC 14-25-4)

State statute IC 14-25-4 is known informally as the "water rights law." It protects owners of most small-capacity water wells from significant ground water withdrawal (>100,000-gallon in one day). High-capacity ground water users may be irrigators, public water supply operators, or quarries. To be protected from a nearby significant ground water withdrawal facility, a small-capacity well must satisfy one of the following criteria:

- The well must be a properly functioning domestic well drilled prior to January 1, 1986.
- If completed after December 31, 1985, the well must be constructed in accordance with rules set forth in 312 IAC 12 Water Well Drilling and Ground Water. These rules require certain minimum pump depths in domestic wells, and they specify how much of the source aquifer must be penetrated.

Indiana law does not protect one small-capacity well owner from another small-capacity well owner.

If a well no longer furnishes its normal supply of water, and it is suspected that the well is being affected by a nearby high-capacity ground water user, a written complaint should be submitted to the director of the Indiana Department of Natural Resources. The IDNR Division of Water will then make an on-site investigation. If the investigation finds evidence that nearby high-capacity pumping has substantially lowered the water level in the small-capacity well, and the well is protected by statute IC 14-25-4, the high-capacity user can be declared liable and may be required to compensate the domestic well owner using one of the following options:

1. Restore the affected well to its former capability; or
2. Provide, at the point of use, an alternative potable water supply; or
3. Restrict or schedule high capacity water withdrawals so that the affected well produces its normal water supply.

See [Attachment 4](#) for contact information.

REQUIREMENTS FOR AGGREGATE FACILITIES UNDER THE SAFE DRINKING WATER ACT (SDWA)

Some aggregate facilities may conduct operations that are subject to rules developed under the Safe Drinking Water Act (SDWA). The regulations are intended to:

- Set standards for the cleanliness of drinking water;
- Require companies that provide drinking water to populations to analyze their water, make reports, and keep records;
- Establish permit requirements for underground injection; and

- Restrict disposal of hazardous waste into wells.

HOW THESE REGULATIONS MAY APPLY TO AN AGGREGATE FACILITY

In general, there are three ways in which an activity at an aggregate facility can be subject to SDWA regulations. The first way is if you operate a well that provides drinking water for employees and contractors. The second way is if you operate a septic tank that provides service to employees and contractors. The third way is if there is a stormwater drainage well on your property.

OPERATION OF A DRINKING WATER WELL

A well on your site is regulated by the Safe Drinking Water Branch of IDEM if it is a public water system that is not a community water system, and if it regularly serves at least 25 of the same persons over six (6) months per year. This is called a “Non-transient Non-community Water System”. The persons you are counting are your employees plus any contractors or truck drivers that come into your site and could use the well for drinking water.

CERTIFIED OPERATORS

Non-transient, non-community water systems are required to have a certified operator in responsible charge of the water system and assure that at least one certified operator is available for each operating shift. The certified operator in responsible charge has responsibility for the operation of the system and the quality of the drinking water. To become a certified operator, a person must pass an examination administered by IDEM and maintain the certification through continuing education classes.

SAMPLING AND TESTING

If you operate a well and associated water system that is regulated, you must sample and test the water on a set schedule for the contaminants listed in [Attachment 5](#). The testing frequency varies depending on the parameters being tested for and the characteristics of the water system. You should contact the Safe Drinking Water Branch at the number listed in Appendix A under “Safe Drinking Water Act” for guidance on the required testing schedule. Testing for most parameters must be done at the entry points into the system, that is, after any treatment, and before distribution. Samples to be analyzed for Lead, Copper and coliform bacteria are required to be taken at the tap in order to evaluate the potential contamination from copper piping and solder that could contain lead, and the effectiveness of the disinfection system (if any).

There are waivers available which allow a reduction in monitoring frequency for most parameters based on the reliability and consistency of your well system, the use of the system, the susceptibility of the system to contamination, and the size of the system. If your system is regulated, you are urged to contact the Safe Drinking Water Branch, and ask for information on waivers.

NOTIFICATION REQUIREMENTS

Non-transient, non-community water systems must abide by the reporting requirements for notifying those served by the system of drinking water violations identified through the testing program. For aggregate plants, this would take the form of placing notices at all drinking water

access points at the facility for employees and truck drivers to read and verbally inform persons coming on site. The regulations (327 IAC 8-2.1-7 through 327 IAC 8-2.1-17) provide the required language that must be included in these notices, and the time frames in which these notices must be given.

CONSTRUCTION PERMITS

Owners of regulated non-transient, non-community water systems used for industrial purposes must obtain a construction permit prior to construction, installation or modification of any facility, equipment or device in the system. Construction permits are not required in the instance of replacement of equipment similar in design and capacity such that the system is not significantly altered in design, operation or capacity.

CROSS-CONNECTIONS

Operators of all drinking water systems (regulated and non-regulated) should avoid cross-connections to the drinking water system. Any means of backflow into the drinking water system via other water systems could be a source of contamination hazard. If, possible, the drinking water system should be independent of other water systems at the facility. Alternatively, cross-connection control (e.g.; backflow-prevention) devices are available on the market. If used, these devices must be routinely inspected and maintained.

OPERATION OF A SEPTIC SYSTEM AND STORMWATER DRAINAGE WELLS

Your facility's septic system and any stormwater drainage wells are considered Class V injection wells under the EPA Regulations for the Underground Injection Control Program (40 CFR 144). A Class V injection well is defined as 1) any bored, drilled, or driven shaft, or dug hole that is deeper than its widest surface dimension, 2) an improved sinkhole, or 3) a subsurface fluid distribution system.

A septic system is regulated as a Class V injection well if it has the capacity to serve 20 or more people. According to the regulation, it is against the law to endanger any drinking water sources that may be under the septic system or the stormwater drainage wells.

Septic systems and stormwater drainage wells are authorized by the rule to operate without a permit as long as they meet minimum standards, which include registering (or inventorying) either the well or septic system, and not injecting industrial fluids into the well or septic system. There are rare instances where a permit is required to operate a Class V well. It is against the law to discharge industrial fluids, or anything besides sanitary sewage into a septic system. It is likewise against the law to discharge anything besides stormwater into a drainage well.

CLASS V WELL REGISTRATION

Registration of Class V injection well is fairly simple in that it asks for:

- Facility name and location;
- Name and address of legal contact;
- Ownership and type of injection wells; and

- Operating status of the injection well.

This registration must be submitted on a form that is supplied by the U.S. EPA. The State of Indiana does not have primacy to administer the Underground Injection Control Program, so the U.S. EPA is the agency that manages registrations. If you have been operating a Class V well and have not submitted a registration form, it may be considered a minor violation since the registration deadline has passed.

WELLHEAD PROTECTION

Indiana has established a program to maintain community water well systems by providing protection zones for the community well fields. These “Wellhead Protection Areas” are the surface and subsurface areas that contribute water to the community water supply wells and through which contaminants could potentially move to reach the wells within specified periods of time. Local authorities are responsible to prepare wellhead protection plans that typically include identification of potential sources of contamination, delineation of the wellhead protection area, guidelines/restrictions on activities within sanitary set-back areas around community well fields, management plans and contingency plans to provide safe drinking water in emergency situations. Aggregate industry personnel should be cognizant of the locations of wellhead protection areas near their existing operations and consider wellhead protection areas when siting future facilities.

CHAPTER 7 - ATTACHMENT 1
Indiana Code 13-2-6.1 (Recodified at IC 14-25-7)
Water Resource Management

The following Indiana Codes are listed in IC 14-25-7. Please note: as the Indiana Code is revised the Indiana General Assembly website is updated within a reasonable time period. For the most current version of the rule visit the following website <http://www.in.gov/legislative/ic/code/title14/ar25/ch7.html>

**Information Maintained by the Office of Code Revision Indiana Legislative Services
Agency**

05/25/2005 03:12:22 PM EST

IC 14-25-7

Chapter 7. Water Resource Management

IC 14-25-7-1

"Aquifer" defined

Sec. 1. As used in this chapter, "aquifer" means an underground geologic formation that:

- (1) is consolidated or unconsolidated; and
- (2) has the ability to receive, store, and transmit water in amounts sufficient for the satisfaction of any beneficial use.

As added by P.L.1-1995, SEC.18.

IC 14-25-7-2

"Beneficial use" defined

Sec. 2. As used in this chapter, "beneficial use" means the use of water for any useful and productive purpose. The term includes the following uses:

- (1) Domestic.
- (2) Agricultural, including irrigation.
- (3) Industrial.
- (4) Commercial.
- (5) Power generation.
- (6) Energy conversion.
- (7) Public water supply.
- (8) Waste assimilation.
- (9) Navigation.
- (10) Fish and wildlife.
- (11) Recreational.

As added by P.L.1-1995, SEC.18.

IC 14-25-7-3

"Ground water" defined

Sec. 3. As used in this chapter, "ground water" means all water occurring beneath the surface of the ground regardless of location and form.

As added by P.L.1-1995, SEC.18.

IC 14-25-7-4

"Instream use" defined

Sec. 4. As used in this chapter, "instream use" means any use of water that uses surface water in place. The term includes the following uses:

- (1) Commercial and recreational navigation.
- (2) Hydroelectric power generation.
- (3) Waste assimilation.
- (4) Fish and wildlife habitat.
- (5) General recreation.
- (6) The maintenance of environmental and aesthetic values.

As added by P.L.1-1995, SEC.18.

IC 14-25-7-5

"Person" defined

Sec. 5. As used in this chapter, "person" means an individual, an incorporated or unincorporated organization or association, a trustee or legal representative, the state, a political subdivision of the state, the United States of America, an agency of the state, a political subdivision of the state or of the United States of America, or a group of such persons acting in concert.

As added by P.L.1-1995, SEC.18.

IC 14-25-7-6

"Reasonable beneficial use" defined

Sec. 6. For purposes of this chapter, "reasonable beneficial use" means the use of water for a beneficial use in the quantity and manner that is:

- (1) necessary for economic and efficient utilization; and
- (2) both reasonable and consistent with the public interest.

As added by P.L.1-1995, SEC.18.

IC 14-25-7-7

"Stream" defined

Sec. 7. As used in this chapter, "stream" means a natural or an altered river, creek, slough, watercourse, or artificial channel that has:

- (1) definable banks and bed capable of conducting defined runoff;
- (2) visible evidence of the flow or occurrence of water; and
- (3) a watershed greater than one (1) square mile in area.

As added by P.L.1-1995, SEC.18.

IC 14-25-7-8

"Water resource" defined

Sec. 8. (a) As used in this chapter, "water resource" means all water:

- (1) on or beneath the surface of the ground; or
- (2) in the atmosphere.

(b) The term includes the following:

- (1) Streams.
- (2) Impoundments.
- (3) Diffused surface water.

(4) Water percolating, standing, or flowing beneath the surface of the ground.

(5) All boundary and coastal water within the jurisdiction of the state.

As added by P.L.1-1995, SEC.18.

IC 14-25-7-9

"Withdrawal use" defined

Sec. 9. As used in this chapter, "withdrawal use" means any use of water that involves the physical removal of the water from a

ground or surface source, including water from storage in an impoundment.

As added by P.L.1-1995, SEC.18.

IC 14-25-7-10

Administration of chapter

Sec. 10. (a) The commission shall administer this chapter.

(b) The deputy director for water and resource regulation shall serve as technical secretary to the commission. The deputy director shall perform the duties that are required by this chapter or that the commission directs.

(c) The advisory council for the bureau of water and resource regulation shall serve in an advisory capacity to the commission with respect to the implementation of the commission's powers and duties, including the drafting of rules and development of inventories, assessments, and plans.

(d) For the time that the advisory council is involved in the drafting of rules, the membership of the council shall be augmented as follows:

(1) Two (2) members of the senate, not more than one (1) of whom may be of the same political party, shall be appointed for a term of two (2) years by the president pro tempore of the senate.

(2) Two (2) members of the house of representatives, not more than one (1) of whom may be of the same political party, shall be appointed for a term of two (2) years by the speaker of the house of representatives.

These members are entitled to travel expenses and a per diem allowance as determined by the budget agency for members of boards and commissions generally.

(e) The department shall provide professional, technical, and clerical personnel, equipment, supplies, and support services reasonably required to assist the commission in the exercise of the commission's powers and duties under this chapter. The department shall include money for this purpose in the regular operating budget requests of the department.

As added by P.L.1-1995, SEC.18.

IC 14-25-7-11

Duties of commission

Sec. 11. The commission shall do the following:

(1) Conduct a continuing assessment of the availability of the water resource.

(2) Take and maintain an inventory of significant uses of water withdrawn from the surface or ground.

(3) Plan for the development, conservation, and use of the water resource for

beneficial uses.

As added by P.L.1-1995, SEC.18.

IC 14-25-7-12

Powers of commission

Sec. 12. The commission may do the following:

- (1) Collect and disseminate information relating to the water resource.
- (2) Consult with and advise all users of the water resource as to availability of the water resource and the most practical method of water withdrawal, development, conservation, and use.
- (3) Make the necessary investigations and inspections for proper administration of this chapter.
- (4) Enter at reasonable times with proper notice upon any property other than a dwelling place for the purpose of inspecting and investigating significant water withdrawal facilities or enforcing this chapter.
- (5) Establish, by rule, the criteria for the determination of minimum stream flows and minimum ground water levels.
- (6) When necessary for the proper administration and enforcement of this chapter, require the metering or other reasonable measurement of water withdrawals from significant water withdrawal facilities and the reporting of the metering or measurement to the commission.
- (7) Cooperate with other state and local agencies, other states and their state agencies, and agencies of the United States in water resource development, conservation, and use.
- (8) Accept and administer money from any source to aid in carrying out this chapter.
- (9) Exercise the additional authority necessary to carry out this chapter.

As added by P.L.1-1995, SEC.18.

IC 14-25-7-13

Inventory of water resources; plans and recommendations

Sec. 13. (a) As used in this section, "surplus water" means that water found to exceed:

- (1) existing uses; and
 - (2) reasonably foreseeable needs;
- in the watershed of origin.

(b) The commission shall make and maintain an inventory of the water resource of Indiana. The inventory must include an assessment of the following:

- (1) The capabilities of streams to support instream and withdrawal uses and of aquifers to support withdrawal uses.
- (2) Low stream flow characteristics.
- (3) Existing uses and projections of beneficial use requirements.
- (4) The potential in watersheds for managing flood water for beneficial uses.
- (5) Potential sources and amounts of surplus water available for transfers.
- (6) Other assessment and information considered necessary to properly define water

resource availability.

(c) The commission shall maintain, on a continuing basis and with

opportunity for participation and consultation with all interested persons, plans and recommendations for the development, conservation, and use of the water resource to best serve the needs of the people of Indiana for beneficial uses.

(d) The commission shall prepare a compilation and mapping of all community public water supplies in Indiana that serve at least five hundred (500) customers. The commission shall update the compilation and mapping at least one (1) time every five (5) years. The commission may use funds from the water resources development fund established by IC 14-25-2-4 to prepare compilations and mappings under this subsection. The compilations and mappings prepared under this subsection must include the following information:

(1) The location of water sources for community public water supplies.

(2) The location of treatment facilities used to treat raw water before the water is distributed to community public water supply customers.

(3) The extent of water mains in territories served by community public water supplies.

(4) The population served by community public water supplies.

(5) The total amount of water produced by community public water supplies for the most recent calendar year.

As added by P.L.1-1995, SEC.18. Amended by P.L.184-1995, SEC.2.

IC 14-25-7-14

Minimum flows of streams; minimum levels of ground water

Sec. 14. (a) Subject to subsection (c), the commission may determine and establish the minimum flows of streams, taking into account the varying low flow characteristics of the streams of Indiana and the importance of instream and withdrawal uses, including established water quality standards and public water supply needs.

(b) The established minimum flows of streams:

(1) are those naturally occurring, as determined by the commission; and

(2) may be calculated to reflect seasonal and regional variations.

(c) For boundary water, the commission may develop mutually agreeable minimum flows of streams in cooperation with the boundary state.

(d) The commission may determine and establish the minimum level of ground water in aquifers below which further withdrawals would be significantly harmful to the water resource of the area.

As added by P.L.1-1995, SEC.18.

IC 14-25-7-15

Significant water withdrawal facilities

Sec. 15. (a) As used in this section, "significant water withdrawal facility" means the water withdrawal facilities of a person that, in the

aggregate from all sources and by all methods, has the capability of withdrawing more than one hundred thousand (100,000) gallons of ground water, surface water, or ground

and surface water combined in one (1) day. The term does not include:

(1) water withdrawal facilities that function as part of the operation or construction of a landfill; or

(2) water withdrawal facilities located in or on an off-stream impoundment that is principally supplied by a significant water withdrawal facility.

(b) Every person who has a significant water withdrawal facility shall register the facility with the commission on forms provided by the commission that contain the following:

(1) The name and legal address of the registrant.

(2) The source of water supply.

(3) The total capability of the water withdrawal facility.

(4) The total withdrawal capability per day and the amount from each source.

(5) The use to be made of the water, the place of use, and the place of discharge.

(6) The geographic location of the supply source.

(7) The date of registration.

(8) Other information specified by rule.

(c) A significant water withdrawal facility must be registered within three (3) months after the facility is completed.

(d) The owner of a registered significant water withdrawal facility shall, within three (3) months after the end of each year, make a verified report to the commission on forms to be provided by the commission of the amounts of water withdrawn during the year.

(e) Under rules adopted by the department, the department may waive the requirement of the information set forth in subsections (b) and (d) with respect to a temporary significant water withdrawal facility.

As added by P.L.1-1995, SEC.18. Amended by P.L.123-1996, SEC.17.

IC 14-25-7-16

Duties of natural resources study committee

Sec. 16. The natural resources study committee created by IC 2-5-5-1 shall do the following:

(1) Oversee the water resource management program of this chapter and the needs of the people of Indiana.

(2) Report the findings and recommendations in an electronic format under IC 5-14-6 to the general assembly through the legislative council.

As added by P.L.1-1995, SEC.18. Amended by P.L.28-2004, SEC.131.

IC 14-25-7-17

Violations

Sec. 17. A person who violates section 15 of this chapter commits

a Class B infraction. A separate infraction is committed each day a violation occurs.

As added by P.L.1-1995, SEC.18.

CHAPTER 7 - ATTACHMENT 2
Registration of a Significant Water Withdrawal Facility

The following form is available on the IDNR website. Please note: IDNR may periodically revise State forms. The IDNR website should provide the most up to date forms available. For the most current version of this form visit the following website.

Registration Of A Significant Water Withdrawal Facility

<http://www.in.gov/icpr/webfile/formsdiv/20094.pdf>

STATE OF INDIANA

DEPARTMENT OF NATURAL RESOURCES

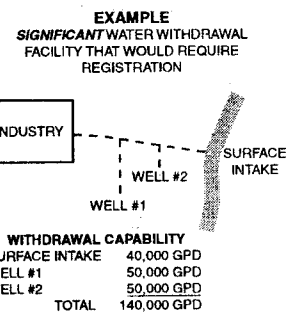
INSTRUCTIONS FOR THE REGISTRATION OF A SIGNIFICANT WATER WITHDRAWAL FACILITY

GENERAL INSTRUCTIONS

WHO MUST REGISTER

Indiana Code 14-25-7-15 (Water Resource Management Act) requires every person who has a significant water withdrawal facility to register that facility with the Natural Resources Commission. A water withdrawal facility can be considered to include any and all wells, surface water intakes, pumping apparatus or other installations which supply water to a common collection and/or distribution point. As defined by the statute a *significant water withdrawal facility* means the water withdrawal facilities of a person that, in the aggregate from all sources and by all methods, has the capability of withdrawing more than one-hundred thousand (100,000) gallons of ground water, surface water, or ground and surface water combined in one (1) day; however, this does not include water withdrawal facilities located in or on an off stream impoundment that is principally supplied by a significant water withdrawal facility, or those associated with operation or construction of a landfill.

Example: An industry obtains water from a surface intake and wells numbered 1 & 2. The surface water intake is capable of withdrawing 40,000 gallons per day (GPD). Well #1 and Well #2 each have a withdrawal capacity of 50,000 gallons per day. Total withdrawal capability of all water withdrawal facilities of this industry is 140,000 gallons per day (GPD). These water withdrawal facilities constitute one significant water withdrawal facility and as such must be registered.



The owner of any wells, surface water intakes or pumping apparatus which are capable of withdrawing more than 100,000 gallons of water a day, either individually or in combination, must register those facilities with the Commission.

PROBLEMS OR QUESTIONS

If there are any questions concerning what constitutes a significant water withdrawal facility or how to properly complete the registration form, please call or write:

Indiana Department of Natural Resources
Division of Water
402 West Washington Street Rm. W264
Indianapolis, Indiana 46204
Telephone: (317) 232-4160

WHEN TO REGISTER

All significant water withdrawal facilities must be registered within three (3) months after the facility is completed.

LOCATION INFORMATION FOR SIGNIFICANT WATER WITHDRAWAL FACILITY

The registration form requires the description of the location of several component parts of a significant water withdrawal facility. The information concerning the location of source(s) of supply, water use and discharge points should be carefully completed and may involve referring to a plat book or tax record information for detailed Township, Range, and Section description. If the site is located within a land grant, military donation, or other land survey system not identifiable by Section, Township and Range, a copy of the deed and/or plat map should be submitted with the registration form. In addition, written descriptions, site maps, and/or a facility location sketch should be such as to permit identification of the exact sites. Space has been provided on the last page of the registration form for one or more location maps. Topographic maps, plat maps, city and county maps or other maps may be submitted in order to detail the location of the source(s) of supply, water use and discharge points. Written descriptions of facility locations should include names and numbers of roads, distances, and directions from the nearest town or prominent landmarks.

INSTRUCTIONS FOR COMPLETING SECTIONS 1 THROUGH 7 OF REGISTRATION FORM

Section 1 - Owner of Water Withdrawal Facility

Provide the name of the owner of the property on which the significant water withdrawal facility is located. This would be the name of the owner of the facility where the withdrawn water is collected for use and/or distribution. This does not mean the owner of pumping equipment which is rented. If there is an employee or representative of the owner who should be contacted regarding information provided on the registration form, his or her name and mailing address should be provided in the spaces provided for a contact person.

Section 2 - Water Use

Check every purpose for which the water withdrawn by the significant water withdrawal facility is used. If your water use is not included in this list, please check "Other", and list the purpose(s) for which water is withdrawn. For each purpose checked, indicate whether the source of that water is ground water (GW), surface water (SW) or both. Also, if used for Public Water Supply/Drinking Water, indicate the PWSID No. of the facility in the appropriate block.

Section 3 - Water Withdrawal Facility Capability

Indicate the total amount of water that can be withdrawn by all wells and surface water intakes which make up the significant water withdrawal facility. This would be equal to the sum of the pump capacities of all wells plus the sum of the intake capacities and/or pump capacities of all surface water intakes. Indicate the withdrawal capability in gallons per day (GPD) or million gallons per day (MGD).

Section 4 - Supply Sources

I. Ground Water Sources

Indicate the total number of wells included in the significant water withdrawal facility. Also provide the total amount of water that the pumps on all wells of the facility are capable of withdrawing in gallons per minute (GPM).

Sections 4-A thru D

- Line 1. Indicate the reference number that has been assigned by the owner to designate each well. If no numbering system exists, number the wells 1, 2, 3, etc., as necessary. Also indicate the pump capacity of each well in gallons per minute (GPM)
- Line 2. Provide the well depth and well diameter for each water well. This information may be available from your well drilling contractor or may be on file with the Ground Water Section of the Division of Water. See page one of these instructions for the address of the Division of Water.
- Line 3. If known, check the aquifer from which water is withdrawn by each well. An aquifer is an underground geologic formation that has the ability to receive, store, and transmit water in amounts sufficient for some beneficial use.
- Lines 4 & 5. Provide the location of the well including: County (ex: Marion), Civil Township (ex: Washington), Township (ex: T. 15 N.), Range (ex: R. 3 E.), Section (ex: Section 34). If the site is located on property described by another land survey system, please attach a copy of a deed or plat map.
- Line 6. Indicate the city or town located nearest the well.
- Line 7. A written description of the location of each well should be provided. This description should include the names and numbers of nearby roads, and distances and directions from prominent buildings or landmarks. Space is available on the last page of the registration form for a location sketch. Separate maps or plats on which the location of the well(s) has (have) been marked may be attached to the registration form if desired.
- Line 8. For office use only, do not fill in.

II. Surface Water Sources

Indicate the total number of intakes supplied by surface water sources for use as a part of the significant water withdrawal facility. Also, provide the total amount of water that can be withdrawn from surface water sources by all pumps and intake structures of the facility in gallons per minute (GPM).

Sections 4-A thru D

- Line 1. Indicate the reference number that has been assigned by the owner to each intake structure. If no numbers have been assigned, designate the intakes 1, 2, 3, etc.
- Line 2. Indicate the withdrawal capacity of the intake structure or pump in gallons per minute (GPM).
- Line 3a & b Check the appropriate box to indicate from where the water is being withdrawn. If the body of water is named, please indicate that name in the space provided.
- Lines 4 & 5. Provide the location of each intake structure including County (ex: Marion), Civil Township (ex: Washington), Township (ex: T. 15 N.), Range (ex: R. 3 E.), and Section (ex: Section 34). If the intake is located on property described by another land survey system, please attach a copy of a deed or plat map.
- Line 6. Indicate the name of the city or town located nearest the intake structure.
- Line 7. A written description of the location of each intake should be provided. This description should include the names and numbers of nearby roads, and distances and directions from prominent buildings or landmarks. Space is available on the last page of the registration form for a location sketch. Separate maps or plats on which the location of each intake has been marked may be attached to the registration form if desired.
- Line 8. For office use only, do not fill in.

Section 5 - Location of Water Use

- Line 1. Indicate whether the water withdrawn is used in the immediate vicinity of the withdrawal points.
- Line 2. If water is transported from the withdrawal site to a place of use, provide the Civil Township, County and State in which the water is utilized.
- Line 3. Indicate the location of the site where the water is used. Please provide the name of the facility where the water is used, the names and number of nearest roads, nearest city or town, direction and distance from prominent landmarks and buildings, etc. A map or sketch indicating the location of water use may be attached if desired.

Section 6 - Location of Discharge Point(s)

- Line 1. Indicate whether a portion of the water withdrawn from ground or surface water sources is discharged (returned) to some source. Crop irrigation would not be considered to involve a discharge or return of water to some source. Discharge water is that portion of the water withdrawn which is not consumed during use and is returned to some location after use.
- Line 2. Indicate here the percentage of water withdrawals which are discharged to the same or another source. This percentage would be equal to
$$\frac{\text{TOTAL AMOUNT RETURNED}}{\text{TOTAL AMOUNT WITHDRAWN}} \times 100 = \%$$
- Line 3. Check the appropriate boxes indicating where the discharge waters are placed. If "Other" is checked, please specify where the water is returned.
- Line 4 & 5. Provide the County, Civil Township, Township, Range and Section in which each discharge facility is located. Refer to the instructions for completing Lines 4 and 5 of Section 4-A thru D under Supply Sources.
- Line 6. A written description of the location of each discharge facility should be included. This description should include the same type of information outlined in the instructions for the completion of Line 3 in Section 5 (Location of Water Use).

Section 7 - Statement of Affirmation

The registration form should be signed and dated and returned to the Indiana Department of Natural Resources at the address shown on the front page of the registration form.

IMPORTANT: PLEASE NOTE

ADDITIONAL REGISTRATION FORMS ARE AVAILABLE UPON REQUEST IF THE REGISTRANT HAS MORE THAN ONE SIGNIFICANT WATER WITHDRAWAL FACILITY. IN THE EVENT THAT CHANGES OR ADDITIONS ARE MADE TO A SIGNIFICANT WATER WITHDRAWAL FACILITY AFTER ITS INITIAL REGISTRATION, THE APPROPRIATE INFORMATION TO UPDATE THE PREVIOUSLY SUBMITTED DATA FOR THAT FACILITY SHOULD BE SUBMITTED TO THE DIVISION OF WATER.



REGISTRATION OF A SIGNIFICANT WATER WITHDRAWAL FACILITY

State Form 20094 (R3 / 8-98)

FOR OFFICE USE ONLY

Registration number

**SEND TO: INDIANA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER
402 WEST WASHINGTON ST., ROOM W264
INDIANAPOLIS, IN 46204
TELEPHONE: (317) 232-4160**

DETAILED DIRECTIONS ARE PROVIDED ON THE SEPARATE ENCLOSED INSTRUCTION SHEET.

AUTHORITY: IC 14-25-7-15 requires that every person who has a significant water withdrawal facility shall register it with the Natural Resources Commission. A "significant water withdrawal facility" means the water withdrawal facilities of a person that, in the aggregate from all sources and by all methods, has the capability of withdrawing more than one hundred thousand (100,000) gallons of ground water, surface water or ground and surface water combined in one (1) day; however, this does not include water withdrawal facilities located in or on an off-stream impoundment that is principally supplied by a significant water withdrawal facility, or those associated with operation or construction of a landfill.

NOTE: GPM = Gallons Per Minute GPD = Gallons Per Day MGD = Million Gallons Per Day

1. OWNER OF WATER WITHDRAWAL FACILITY (please type or print)

Name of owner	Telephone number	Contact person (if other than owner)	Telephone number
Address (number and street)		Address (number and street)	
Address (number and street)		Address (number and street)	
Address (city, state, ZIP code)		Address (city, state, ZIP code)	

2. WATER USE

Water to be used for the following purposes. (Check one or more as appropriate) GW = Ground Water / SW = Surface Water

Supply source / circle		Supply source / circle		Supply source / circle	
<input type="checkbox"/> Public Water Supply	GW SW	<input type="checkbox"/> Cooling Water	GW SW	<input type="checkbox"/> Heating / Air Conditioning	GW SW
<input type="checkbox"/> Drinking Water / Sanitary Facilities	GW SW	<input type="checkbox"/> Process Water	GW SW	<input type="checkbox"/> Recreational Use	GW SW
<input type="checkbox"/> Agricultural Irrigation	GW SW	<input type="checkbox"/> Coal Preparation	GW SW	<input type="checkbox"/> Other (specify) _____	GW SW
<input type="checkbox"/> Golf Course Irrigation	GW SW	<input type="checkbox"/> Oil Recovery	GW SW		
<input type="checkbox"/> Waste Assimilation	GW SW	<input type="checkbox"/> Mineral Extraction	GW SW		
<input type="checkbox"/> Livestock Watering	GW SW	<input type="checkbox"/> Power Generation	GW SW		

PWSID number (If used for Public Water Supply / Drinking Water)

3. WATER WITHDRAWAL FACILITY CAPABILITY

Total withdrawal capability of withdrawal facilities: _____ GPD or MGD (circle one)

NOTE: This total is the sum of the capabilities of all wells and surface water intakes.

4. SUPPLY SOURCES

GROUND WATER SOURCES

Total number of wells	Total withdrawal capability of all wells
	GPM

SURFACE WATER SOURCES

Total number of intakes	Total withdrawal capability of all surface water intakes
	GPM

FOR EACH WELL PROVIDE THE FOLLOWING:

(Additional entries are provided on page 2.)

A. Owner's well number	Pump capacity (GPM)
Well depth (feet)	Well diameter (inches)
Aquifer utilized (check one)	
<input type="checkbox"/> Sand and gravel	<input type="checkbox"/> Limestone
<input type="checkbox"/> Sand	<input type="checkbox"/> Shale
<input type="checkbox"/> Sandstone	<input type="checkbox"/> Other (specify) _____

FOR EACH SURFACE WATER INTAKE PROVIDE THE FOLLOWING:

(Additional entries are provided on page 2.)

A. Owner's intake number	Intake capacity (GPM)
Source utilized (check one)	
<input type="checkbox"/> River or stream	<input type="checkbox"/> Lake
<input type="checkbox"/> Drainage ditch	<input type="checkbox"/> Pond
<input type="checkbox"/> Reservoir	<input type="checkbox"/> Other (specify) _____
Name of body of water	

LOCATION OF WELL:	County	Civil township
Township	Range	Section
T _____ N or S (circle one)	R _____ E or W (circle one)	

LOCATION OF INTAKE:	County	Civil township
Township	Range	Section
T _____ N or S (circle one)	R _____ E or W (circle one)	

Nearest city or town

Nearest city or town

Describe location of well (attach map or plat if possible)

Describe location of intake (attach map or plat if possible)

UTM.N UTM.E UTM.N UTM.E

Space is provided on the back of this form for a location sketch. Attach additional location sketches or maps as necessary.

4. SUPPLY SOURCES (CONTINUED)

GROUND WATER SOURCES				SURFACE WATER SOURCES			
B. Owner's well number		Pump capacity (GPM)		B. Owner's intake number			
Well depth (feet)		Well diameter (inches)		Intake capacity (GPM)			
Aquifer utilized (check one) <input type="checkbox"/> Sand and gravel <input type="checkbox"/> Limestone <input type="checkbox"/> Sand <input type="checkbox"/> Shale <input type="checkbox"/> Sandstone <input type="checkbox"/> Other (specify) _____				Source utilized (check one) <input type="checkbox"/> River or stream <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input type="checkbox"/> Drainage ditch <input type="checkbox"/> Pond <input type="checkbox"/> Other (specify) _____ Name of body of water _____			
LOCATION OF WELL:		County	Civil township	LOCATION OF INTAKE:		County	Civil township
Township		Range	Section	Township		Range	Section
T _____ N or S (circle one)		R _____ E or W (circle one)		T _____ N or S (circle one)		R _____ E or W (circle one)	
Nearest city or town				Nearest city or town			
Describe location of well (attach map or plat if possible)				Describe location of intake (attach map or plat if possible)			
UTM.N UTM.E				UTM.N UTM.E			
C. Owner's well number		Pump capacity (GPM)		C. Owner's intake number			
Well depth (feet)		Well diameter (inches)		Intake capacity (GPM)			
Aquifer utilized (check one) <input type="checkbox"/> Sand and gravel <input type="checkbox"/> Limestone <input type="checkbox"/> Sand <input type="checkbox"/> Shale <input type="checkbox"/> Sandstone <input type="checkbox"/> Other (specify) _____				Source utilized (check one) <input type="checkbox"/> River or stream <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input type="checkbox"/> Drainage ditch <input type="checkbox"/> Pond <input type="checkbox"/> Other (specify) _____ Name of body of water _____			
LOCATION OF WELL:		County	Civil township	LOCATION OF INTAKE:		County	Civil township
Township		Range	Section	Township		Range	Section
T _____ N or S (circle one)		R _____ E or W (circle one)		T _____ N or S (circle one)		R _____ E or W (circle one)	
Nearest city or town				Nearest city or town			
Describe location of well (attach map or plat if possible)				Describe location of intake (attach map or plat if possible)			
UTM.N UTM.E				UTM.N UTM.E			
D. Owner's well number		Pump capacity (GPM)		D. Owner's intake number			
Well depth (feet)		Well diameter (inches)		Intake capacity (GPM)			
Aquifer utilized (check one) <input type="checkbox"/> Sand and gravel <input type="checkbox"/> Limestone <input type="checkbox"/> Sand <input type="checkbox"/> Shale <input type="checkbox"/> Sandstone <input type="checkbox"/> Other (specify) _____				Source utilized (check one) <input type="checkbox"/> River or stream <input type="checkbox"/> Lake <input type="checkbox"/> Reservoir <input type="checkbox"/> Drainage ditch <input type="checkbox"/> Pond <input type="checkbox"/> Other (specify) _____ Name of body of water _____			
LOCATION OF WELL:		County	Civil township	LOCATION OF INTAKE:		County	Civil township
Township		Range	Section	Township		Range	Section
T _____ N or S (circle one)		R _____ E or W (circle one)		T _____ N or S (circle one)		R _____ E or W (circle one)	
Nearest city or town				Nearest city or town			
Describe location of well (attach map or plat if possible)				Describe location of intake (attach map or plat if possible)			
UTM.N UTM.E				UTM.N UTM.E			
If owner has more than 4 wells, attach separate sheets providing above information for each additional well.				If owner has more than 4 intakes, attach separate sheets providing above information for each additional intake.			

5. LOCATION OF WATER USE

Is the location of water use the same as the withdrawal facility?

☐ Yes☐ No

If "No", please complete:

State

County

Civil township

Describe location of water use (attach map or plat if possible)

6. LOCATION OF DISCHARGE POINT(S)Is a portion of the water withdrawn returned to some source through a discharge facility? ☐ Yes☐ No

If "Yes" is checked, please complete the following. If "No" is checked, please proceed to section 7.

Estimated percentage of water withdrawn which is returned to some source:

%

Water will be discharged to the following (check one or more as appropriate)

- | | | | | |
|--|------------------------------------|--|---|---|
| <input type="checkbox"/> Well | <input type="checkbox"/> Lake | <input type="checkbox"/> Drainage Ditch | <input type="checkbox"/> Storm Sewer | <input type="checkbox"/> Land Application |
| <input type="checkbox"/> Pond | <input type="checkbox"/> Reservoir | <input type="checkbox"/> River or Stream | <input type="checkbox"/> Sanitary Sewer | <input type="checkbox"/> Customer Service Connections |
| <input type="checkbox"/> Other (specify) _____ | | | | |

Location of discharge facility:

State

County

Civil township

Township

Range

Section

T _____ N or S (circle one)

R _____ E or W (circle one)

Describe location of discharge facility (attach map or plat if possible)

If more than one point of discharge, please attach separate sheets providing the above information for each discharge point.

7. STATEMENT OF AFFIRMATION

I hereby swear or affirm, under the penalties for perjury, that the information submitted herewith is to the best of my knowledge and belief, true, accurate and complete.

Signature of owner or authorized representative

Date (month, day, year)

WATER WITHDRAWAL FACILITY LOCATION SKETCH (*Locate facility with reference to water supply, numbered roads, highways, buildings, or distinctive landmarks.*) This section may be divided for additional maps or separate maps or plats may be attached.

FOR OFFICE USE ONLY			Date received	County	Basin	Registration no.
UTM N	UTM E	Township	Range	Section	Topographic map	
SIC 1	SIC 2	SIC 3	HUC	Aquifer		

CHAPTER 7 - ATTACHMENT 3
Rules on Well Abandonment

The following Indiana Administrative Codes are listed in IAC 13-10. Please note: as the Indiana Administrative Code is revised the Indiana General Assembly website is updated within a reasonable time period. For the most current version of the rule visit the following website <http://www.in.gov/legislative/iac/T03120/A00130.PDF>

Rule 10. Landowner Responsibility for Abandonment and Plugging of Wells

312 IAC 13-10-1 Temporary abandonment of wells

Authority: IC 25-39-4-2; IC 25-39-4-6; IC 25-39-4-9

Affected: IC 25-39

Sec. 1. A well which has not been used for more than three (3) months without being permanently abandoned must be sealed at or above the ground surface by a welded, threaded, or mechanically attached watertight cap. The well shall be maintained so that the well does not become a source or channel of ground water contamination. (*Natural Resources Commission; 312 IAC 13-10-1 ;filed Nov 22, 1999, 3:34 p.m.: 23 IR 772*)

312 IAC 13-10-2 Permanent abandonment of wells

Authority: IC 25-39-4-2; IC 25-39-4-6; IC 25-39-4-9

Affected: IC 25-39

Sec. 2. (a) A well abandoned before January 1, 1988, must be sealed at or above the ground surface by a welded, threaded, or mechanically attached watertight cap. The well shall be maintained so the well does not become a source or channel of ground water contamination. A well that poses a hazard to human health must also be plugged under subsection (c). A cased or uncased bucket well or a hand dug well (other than buried slab construction) that was abandoned before January 1, 1988, shall be closed in conformance with one (1) of the following procedures:

(1) Covered with a reinforced concrete slab at least four (4) inches thick and having a diameter larger than the nominal diameter of the borehole or the well casing.

(2) Equipped with a properly reinforced cover constructed of pressure treated lumber, using chromium copper arsenic salt, that has dimensions larger than the nominal diameter of the borehole or well casing.

The cover shall be protected against the water with roofing or other water repelling materials that are properly maintained to ensure the integrity of the cover. Closure shall not be performed under this subdivision, however, if the cover is in direct contact with ground water or surface water.

(3) Closed as otherwise approved by the division.

(b) A well drilled before January 1, 1988, and abandoned before January 1, 1994, shall be sealed at or above the ground surface by a welded, threaded, or mechanically attached watertight cap. The well shall be maintained so the well does not become a source or channel of ground water contamination. A well that poses a hazard to human health must also be plugged under subsection (c).

(c) A well abandoned after December 31, 1987, shall be plugged with an impervious grouting material to prevent the migration of materials or fluids in the well and the loss of pressure in a confined aquifer.

(d) A well drilled after December 31, 1987, and not equipped with casing must be plugged within seventy-two (72) hours after completion.

(e) This subsection applies as follows to a cased or uncased well abandoned after December 31, 1987:

(1) The plugging material must consist of one (1) or a combination of the following:

(A) Neat cement with not more than five percent (5%) by weight of bentonite additive.

(B) Bentonite slurry (which can include polymers designed to retard swelling).

(C) Pelletized, medium grade, or coarse grade crushed bentonite.

(D) Other materials approved by the commission.

(2) The following methods apply:

(A) Cement and bentonite slurries shall be pumped into place in a continuous operation with a grout pipe introducing the plugging material at the bottom of the well and moving the pipe progressively upward as the well is filled.

(B) Plugging materials other than neat cement or bentonite slurry shall be installed in a manner to prevent bridging of the well or borehole. The well or borehole shall be measured periodically throughout the plugging process to ensure that bridging does not occur.

(3) The following procedures apply:

(A) An abandoned well shall be disconnected from the water system. Any substance that may interfere with plugging shall be removed, if practicable.

(B) A well (other than a monitoring well, a dewatering well, or an uncased borehole) shall be chlorinated before abandonment as provided in 312 IAC 13-9-1.

(4) A cased well shall be plugged as follows:

(A) With neat cement, bentonite slurry, or medium grade or coarse grade crushed or pelletized bentonite from the bottom of the well to within two (2) feet below the ground surface unless otherwise provided by the department.

(B) The well casing shall be severed at least two (2) feet below the ground surface, and a cement plug larger in diameter than the borehole shall be constructed over the borehole and covered with natural clay material to the ground surface.

(5) An uncased well (other than a borehole drilled by a bucket rig or a dewatering well governed by subdivision (8) or (9)), shall be filled with natural clay materials, neat cement, bentonite slurry, or medium grade or coarse grade crushed or pelletized bentonite from the bottom of the borehole to a depth of no less than twenty-five (25) feet below ground surface. The borehole shall be filled with neat cement or medium grade or coarse grade crushed or pelletized bentonite from a depth no less than twenty-five (25) feet below ground surface to within two (2) feet below ground surface. The remaining borehole shall be filled with natural clay material to ground surface.

(6) A cased or uncased monitoring well shall be plugged from the bottom of the well or borehole to the ground surface with a bentonite slurry or pelletized or coarse grade crushed bentonite.

(7) A bucket well shall be plugged as follows:

(A) A bucket well installed as buried slab construction shall be filled with gravel from the bottom of the well to within ten (10) feet below the ground surface. Neat cement, bentonite slurry, or pelletized, medium grade, or coarse grade crushed bentonite shall be installed in the casing or well pipe from no less than ten (10) feet below the ground surface to within two (2) feet below the ground surface. The well pipe shall be severed at least two (2) feet below the ground surface and covered with a cement plug larger in diameter than the well pipe. The remaining hole shall be filled with natural clay material to the ground surface.

(B) Bucket well construction using casing with an inside diameter of less than twelve (12) inches extending the entire length of the borehole and equipped with a well screen shall be abandoned under subdivision (4)(A).

(C) An uncased borehole drilled by a bucket rig shall be filled with natural clay material from the bottom of the hole to the ground surface. The clay material shall be thoroughly tamped to minimize settling.

(D) For other than buried slab construction, a bucket well shall be filled with gravel from the bottom of the well to at least five (5) feet below ground surface. The top section of the concrete or tile well casing shall be removed to cause the top of the well to terminate below ground surface. The well shall be filled with at least one (1) foot of neat cement, bentonite slurry, or pelletized, medium grade, or coarse grade crushed bentonite from at least five (5) feet below ground surface to the top of the well casing. The well casing shall be covered with a cement plug larger in diameter than the borehole. The remaining hole shall be filled with natural clay material to ground surface.

(8) If a dewatering well casing is removed following use, the remaining borehole shall initially be filled with granular, pelletized, medium grade, or coarse grade crushed bentonite a minimum of one (1) foot thick. The remainder of the borehole shall be filled with natural earth materials obtained during the drilling process to the ground surface and be thoroughly tamped to minimize settling.

(9) If a dewatering well casing is removed following use and the well site will be excavated as part of the construction project, the remaining borehole shall be filled with natural earth materials obtained during the drilling process to the ground surface and be thoroughly tamped to minimize settling.

(f) The division shall be notified in writing of a well abandonment within thirty (30) days after plugging is completed. (*Natural Resources Commission; 312 IAC 13-10-2; filed Nov 22, 1999, 3:34 p.m.; 23 IR 773*)

(B) Plugging materials other than neat cement or bentonite slurry shall be installed in a manner to prevent bridging of the well or borehole. The well or borehole shall be measured periodically throughout the plugging process to ensure that bridging does not occur.

(3) The following procedures apply:

(A) An abandoned well shall be disconnected from the water system. Any substance that may interfere with plugging shall be removed, if practicable.

(B) A well (other than a monitoring well, a dewatering well, or an uncased borehole) shall be chlorinated before abandonment as provided in 312 IAC 13-9-1.

(4) A cased well shall be plugged as follows:

(A) With neat cement, bentonite slurry, or medium grade or coarse grade crushed or pelletized bentonite from the bottom of the well to within two (2) feet below the ground surface unless otherwise provided by the department.

(B) The well casing shall be severed at least two (2) feet below the ground surface, and a cement plug larger in diameter than the borehole shall be constructed over the borehole and covered with natural clay material to the ground surface.

(5) An uncased well (other than a borehole drilled by a bucket rig or a dewatering well governed by subdivision (8) or (9)), shall be filled with natural clay materials, neat cement, bentonite slurry, or medium grade or coarse grade crushed or pelletized bentonite from the bottom of the borehole to a depth of no less than twenty-five (25) feet below ground surface. The borehole shall be filled with neat cement or medium grade or coarse grade crushed or pelletized bentonite from a depth no less than twenty-five (25) feet below ground surface to within two (2) feet below ground surface. The remaining borehole shall be filled with natural clay material to ground surface.

(6) A cased or uncased monitoring well shall be plugged from the bottom of the well or borehole to the ground surface with a bentonite slurry or pelletized or coarse grade crushed bentonite.

(7) A bucket well shall be plugged as follows:

(A) A bucket well installed as buried slab construction shall be filled with gravel from the bottom of the well to within ten (10) feet below the ground surface. Neat cement, bentonite slurry, or pelletized, medium grade, or coarse grade crushed bentonite shall be installed in the casing or well pipe from no less than ten (10) feet below the ground surface to within two (2) feet below the ground surface. The well pipe shall be severed at least two (2) feet below the ground surface and covered with a cement plug larger in diameter than the well pipe. The remaining hole shall be filled with natural clay material to the ground surface.

(B) Bucket well construction using casing with an inside diameter of less than twelve (12) inches extending the entire length of the borehole and equipped with a well screen shall be abandoned under subdivision (4)(A).

(C) An uncased borehole drilled by a bucket rig shall be filled with natural clay material from the bottom of the hole to the ground surface. The clay material shall be thoroughly tamped to minimize settling.

(D) For other than buried slab construction, a bucket well shall be filled with gravel from the bottom of the well to at least five (5) feet below ground surface. The top section of the concrete or tile well casing shall be removed to cause the top of the well to terminate below ground surface. The well shall be filled with at least one (1) foot of neat cement, bentonite slurry, or pelletized, medium grade, or coarse grade crushed bentonite from at least five (5) feet below ground surface to the top of the well casing. The well casing shall be covered with a cement plug larger in diameter than the borehole. The remaining hole shall be filled with natural clay material to ground surface.

(8) If a dewatering well casing is removed following use, the remaining borehole shall initially be filled with granular, pelletized, medium grade, or coarse grade crushed bentonite a minimum of one (1) foot thick. The remainder of the borehole shall be filled with natural earth materials obtained during the drilling process to the ground surface and be thoroughly tamped to minimize settling.

(9) If a dewatering well casing is removed following use and the well site will be excavated as part of the construction project, the remaining borehole shall be filled with natural earth materials obtained during the drilling process to the ground surface and be thoroughly tamped to minimize settling.

(f) The division shall be notified in writing of a well abandonment within thirty (30) days after plugging is completed. (*Natural Resources Commission; 312 IAC 13-10-2; filed Nov 22, 1999, 3:34 p.m.; 23 IR 773*)

CHAPTER 7 - ATTACHMENT 4
Dewatering Well Installation

Dewatering Well Installation:

The Water Rights: Emergency Regulation Statute provides protection for domestic well owners against the impacts of high capacity groundwater pumpage if it substantially lowers water levels, resulting in the failure of a domestic well.

A high capacity well is defined in the statute as:

"the ground water withdrawal facility of a person that, in the aggregate from all sources and by all methods, has the capability of withdrawing at least one hundred thousand (100,000) gallons of ground water in one (1) day".

Under the provision of the statute, the owner of a high capacity facility would be required to provide "timely and reasonable compensation" to the affected domestic well owner. "Timely and reasonable compensation consists of and is limited to either:

- 1) The immediate temporary provision at the prior point of use of an adequate supply of potable water.
- 2) Reimbursement of expenses reasonably incurred by the complainant to do the following:
 - A) obtain an immediate temporary provision at the prior point of use of an adequate supply of potable water;
 - B) the restoration of the affected small capacity well to its former relative capability;
 - C) the permanent provision at the point of use of an alternate potable supply of equal quantity; or
 - D) the permanent restriction or scheduling of the high capacity pumpage so that the affected water well continues to provide its normal supply of water, or its normal supply of potable water if the well normally furnishes potable water.

Water Availability / Use / Rights Section
Division of Water
402 West Washington Street, Room W264
Indianapolis, IN 46204

Telephone; (317) 232-4160, Fax (317) 233-4579

CHAPTER 7 - ATTACHMENT 5
Drinking Water Contaminants

The following list of maximum contaminate levels for drinking water was available on the IDEM-drinking water branch website. Please note: MCL's may be revised through rule making. The IDEM website should provide the most up to date list of MCL's. For the most current version of the MCL's for drinking water visit the following website.

<http://www.in.gov/idem/water/dwb/compliance/mcl.pdf>

REGULATED CHEMICAL DRINKING WATER CONTAMINANTS MAXIMUM CONTAMINANT LEVELS

Contaminant	MCL	Contaminant	MCL	Contaminant	MCL
Inorganic Chemicals (IOCs)	mg/l	Volatile Organic Compounds (VOCs)	ug/l	Synthetic Organic Compounds (SOCs)	ug/l
Antimony	0.006	1,1-Dichloroethylene	7	2,4-D	70
Arsenic	0.05	1,1,1-Trichloroethane	200	2,4,5-TP (Silvex)	50
Barium	2	1,1,2-Trichloroethane	5	Alachlor	2
Beryllium	0.004	1,2-Dichloroethane	5	Atrazine	3
Cadmium	0.005	1,2-Dichloropropane	5	Benzo(a)pyrene	0.2
Chromium	0.1	1,2,4-Trichlorobenzene	70	Carbofuran	40
Cyanide (free)	0.2	Benzene	5	Chlordane	2
Fluoride (Adjusted) *	2	Carbon Tetrachloride	5	Dalapon	200
Fluoride (Natural) *	4	Cis-1,2-Dichloroethylene	70	Di(2-ethylhexyl)adipate	400
Mercury	0.002	Dichloromethane	5	Di(2-ethylhexyl)phthalate	6
Nickel	---	Ethylbenzene	700	Dibromochloropropane (DBCP)	0.2
Selenium	0.05	Monochlorobenzene	100	Dinoseb	7
Thallium	0.002	o-Dichlorobenzene	600	Dioxin (2,3,7,8-TCDD)	3X10-5
		p-Dichlorobenzene	75	Diquat	20
Sodium *	No MCL	Styrene	100	Endothall	100
		Tetrachloroethylene	5	Endrin	2
Asbestos		Toluene	1000	Ethylene Dibromide (EDB)	0.05
Asbestos	7 MFL**	Trans-1,2-Dichloroethylene	100	Glyphosate	700
		Trichloroethylene	5	Heptachlor	0.4
Nitrate		Vinyl Chloride	2	Heptachlor epoxide	0.2
Nitrate	10	Xylenes (total)	10,000	Hexachlorobenzene	1
Nitrite	1			Hexachlorocyclopentadiene	50
Total Nitrate & Nitrite	10			Lindane	0.2
		Total Trihalomethanes **** (for systems >10,000)	100	Methoxychlor	40
Lead & Copper				Oxamyl (Vydate)	200
Lead Action Level	0.015			PCBs	0.5
Copper Action Level	1.3			Pentachlorophenol	1
				Picloram	500
Radionuclides *	pCi/l			Simazine	4
Gross Alpha	15			Toxaphene	3
Gross Alpha Action Level	5				
Radium-226 Action Level	3				
Radium-226 & Radium-228 (combined)	5				
Manmade	***				

* Community Water Systems Only

** MFL=million fibers/liter > 10 micron

*** The average annual concentration of beta particle and photon radioactivity from manmade radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than four (4) millirem per year.

**** The sum of the concentrations of bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform).

CHAPTER 8

AIR PERMITTING FOR THE AGGREGATE INDUSTRY

INTRODUCTION

The purpose of this section is to explain the air permitting process and its influence on the aggregate industry. It is intended for the use of owners and operators of such plants who need to understand the applicability of the various permitting rules. It is also intended to answer frequently asked questions about Federal, State and Local air pollution control regulations and when they apply.

It should be stressed that Indiana's air pollution regulations are very involved and that this chapter does not, and could not, identify every permit situation that your plants may face. It is intended as a guidance tool for the purpose of general information and should not be used to replace competent professional advice.

It is highly recommended that you maintain a positive relationship with the community in which you operate. Plants that have numerous complaints filed against them by neighbors or others are more likely to be inspected and scrutinized.

It is also highly recommended that you visit the Indiana Department of Environmental Management, Office of Air Quality Permit Guide located on the IDEM website at <http://www.in.gov/idem/guides/permit/air/index.html> or obtain a copy of the Fourth Edition Environmental Compliance Handbook by Bingham McHale and the Indiana Chamber. The handbook covers the critical information represented on the IDEM website. It can be obtained by calling the Indiana Chamber of Commerce customer service at (800) 824-6885 or order online at <http://www.indianachamber.com>.

DEFINITIONS OF FREQUENTLY USED TERMS

Regulatory definitions for air permitting can be found in a variety of 326 IAC locations including Articles 1, 2, 6, and 8. The regulatory definitions, as they are used in this document, are described below. State air rules are on the web at <http://www.in.gov/legislative/iac/title326.html>. The definitions associated with each article or rule are located often listed at the beginning of the rule. [For example General Provisions list the definitions in 326 IAC 1-2. The Permit Review Rules list definitions under 326 IAC 2-1.1-1, 2-2-1, 2-3-1, 2-6-2, 2-7-1, 2-8-1, and 2-10-2.1.]

Modification – 326 IAC 1-2-42 list the definition as one or more of the following activities at an existing source:

(1) A physical change or change in the method of operation of any existing emissions unit that increases the potential to emit any regulated pollutant that could be emitted from the emissions unit, or that results in emissions of any regulated pollutant not previously emitted.

- (2) Construction of one (1) or more new emissions units that have the potential to emit regulated air pollutants.
- (3) Reconstruction of one (1) or more existing emissions units that increases the potential to emit any regulated air

Source – 326 IAC 2-2-1 and 326 IAC 2-7-1 include a definition for stationary source that means a building, structure, or installation that emits regulated air pollutants. For the purposes of this document source means the aggregate collection of all emission units at a plant. It is important to mention that 326 IAC 1-2-42 General Provisions has a lengthy definition that further describes the criteria where by more than one plant may be combined as one source.

Potential Emissions and Potential to Emit - The definition for potential emissions is found in several sections including 326 IAC 1-2-56 General Provisions, 326 IAC 2-2-1 PSD requirements, 326 IAC 2-3-1 Emission Offset, and 326 IAC 2-7-1 Part 70 permit program. Since 1995 the government has published guidance and memos in regard to calculating potential emissions. Federal guidance can be found online by searching policy and guidance at <http://www.epa.gov/ttn/oarpg/>. The Potential to Emit of the unit or source is the calculated emissions at maximum capacity for 8760 hours per year. Most sources do not operate 24 hours a day all year, however potential emissions are calculated in that manner unless operational limits or an enforceable limit restricts the hours of operation or air pollutant emissions.

Actual Emissions – Actual emissions are calculated using the true operating hours and production capacity over a period of time. The definition for actual emissions is found in several sections including 326 IAC 2-2-1 PSD requirements, 326 IAC 2-3-1 Emission Offset, 326 IAC 2-6-2 Emissions Reporting, 326 IAC 2-7-1 Part 70 permit program. The difference in definitions is most often the period of time for calculating actual emissions. For instance, 326 IAC 2-2 and 326 IAC 2-3 pertain to a 2 year period for determining actual emissions while 326 IAC 2-7 involves a one year period. The definition under the applicable program should be consulted when determining permit applicability.

Non-Attainment Area – A County or Metropolitan Statistical Area (MSA) not meeting the ambient air quality standards established for a specific pollutant.

Fugitive Dust/Emissions –For applicability involving 326 IAC 2-2-1 PSD requirements, 326 IAC 2-3-1 Emission Offset, 326 IAC 2-6 Emission Reporting, 326 IAC 2-8 FESOP Program, and 326 IAC 2-7 Part 70 Permit Program, fugitive emissions are defined as those emissions that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. The definitions in 326 IAC 1-2 General Provisions and 326 IAC 6-4 are different from the definition listed above. These definitions only reference particulate matter from soil and earthy material. The definition under the applicable program should be consulted when determining compliance with that program.

THE REGULATORY BASIS FOR AIR PERMITTING

Air pollution control in Indiana is administered by the Commissioner of the Indiana Department of Environmental Management (IDEM) through the Office of Air Quality (OAQ). This agency has primacy over all air pollution control permitting within the state by authority of the United States Environmental Protection Agency (U.S. EPA), and is responsible for implementing, managing and enforcing the air pollution control regulations for the state of Indiana. Similarly, IDEM has established agreements with several local agencies throughout the state which authorizes the local agencies of Anderson, Evansville, Gary, Hammond, City of Indianapolis/ Marion County, St. Joseph County, and Vigo County to conduct services on behalf of the IDEM. A link to each of the local air agencies is located on the state website at <http://www.in.gov/idem/air/assistance/localair.html>.

Federal rules and regulations are developed from guidance provided by Congress. Sources of air pollution in Indiana are subject to both the state air rules and the federal rules which are predominantly found in the New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP). The NSPS regulations deal with specific types of plants and equipment or specific types of emission sources, whereas the NESHAP regulations are designed to regulate categorical sources of Hazardous Air Pollutants (HAPs) by establishing control technologies. NESHAPs listed under Parts 61 and NSPS requirements apply to sources regardless of the potential emissions. Part 63 NESHAPs only apply to those sources that have the potential to emit HAPs at major source levels.

The aggregate industry includes all forms of surface and subsurface mining for sand and gravel, as well as grinding operations for the production of crushed stone and slag. The predominant emissions from these operations are particulate matter and PM10 (where PM10 refers to particulate matter with a mean aerometric radius of less than 10 microns). These particulate emissions are a result of stripping operations by earth moving and excavating equipment; emissions created as a result of the movement of many product laden vehicles traveling along paved or unpaved roads on site and fugitive emissions as a result of wind action. With the exception of asphalt companies, typically the aggregate industry does not generate HAP emissions. However, NESHAPs may be triggered if a source emits HAPs at major source levels or performs demolition or renovation subject to 40 CFR Subpart M – National Emission Standard for Asbestos. NESHAPs listed under Part 61 can be found on the web at http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=334d167a0094577754a18bce5c102908&tpl=/ecfrbrowse/Title40/40cfr61_main_02.tpl.

NSPS Subpart OOO of 40 CFR 60 provides Standards of Performance for Nonmetallic Mineral Processing Plants. It provides emission limits and standards with respect to the size of operation and time of construction. Subpart OOO contains requirements for PM, not PM₁₀. Additionally, the introduction of a boiler/steam generating unit may invoke the provisions of other NSPS regulations. Specific care must be taken when determining the relevance of NSPS regulations to certain types of ancillary air emitting equipment. NSPS listed under Part 60 can be found on the web at <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=fd36eadc991f341729edcade6894aeed&rgn=div6&view=text&node=40:6.0.1.1.1.77&idno=40>

TYPES OF PERMITS

There are many different permits issued in Indiana. There are various names for these permits; however, each permit can be divided into one of two categories, which is to satisfy the requirements of a construction permit or an operation permit. For purposes of this document, construction permits include new sources on greenfield sites and construction approvals for modifications to existing sources. Operating permits include permits issued to allow the operation of a unit once construction is finalized and the modification of an existing operating permit. Construction permits include Registrations and Source Modifications to an existing source. Operating permits include Minor Source Operating Permits (MSOP), Federally Enforceable State Operating Permits (FESOP), Title V Permits, Source Specific Operating Agreements (SSOA), portable plant permits, Registrations, and Permit Modifications and Permit Revisions.

In Indiana not all sources require construction or operating permits. Sources or construction that qualify as exempt may request a letter that verifies the source's applicability determination. A source that has a PTE below exemption thresholds may obtain an Exemption Letter. A source that is constructing new equipment at an existing source, modifying existing equipment, or reconstructing an existing unit may obtain a Review Request Letter that verifies the applicability determination. Be aware that modifications to existing sources often trigger operating permits even when construction is exempt.

CONSTRUCTION PERMITS

(construction of an entirely new source or changes to and existing source)

All new sources or existing sources that emit air pollutants may be subject to construction permit requirements if air emissions result from the construction or operation of the new equipment. However, a construction may be exempt from any construction permitting requirement if the potential to emit regulated air pollutants are below the emission thresholds which would require it to register with IDEM as a source of air pollution. If the source is certain that its potential to emit falls below the thresholds listed in Table 8-1, the source is exempt. Nonetheless, a source which submits an application and is determined to be exempt will be issued a letter of Exemption or Review Request by IDEM or the local agency. Obtaining a letter from the regulator is a good practice since an increase in the source's potential to emit of any regulated pollutant above exemption levels must be received prior to construction. Existing sources may have obligations under the operating permit requirements that restrict operation prior to permit issuance.

**TABLE 8-1
CONSTRUCTION PERMIT EXEMPTION THRESHOLDS**

Pollutant	Exemption Threshold
VOC	< 10 (tpy) for sources not required to use air pollution control equipment to comply with the applicable provisions of 326 IAC 8
	< 5 (tpy) for sources required to use air pollution control equipment to comply with the applicable provisions of 326 IAC 8
NOx	< 10 (tpy)
PM	< 5 (tpy)
PM10	< 5 (tpy)
SO2	< 10 (tpy)
CO	< 25 (tpy)
Single HAP	< 10 (tpy) new construction and 1 (tpy) for modifications
Combined HAPs	< 25 (tpy) new construction and 2.5 (tpy) for modifications
Lead	< 0.2 (tpy)
Hydrogen Sulfides	< 5 (tpy)
Total reduced sulfur	< 5 (tpy)
Reduced sulfur compounds	< 5 (tpy)
Fluorides	< 5 (tpy)

REGISTRATION, REVISION, MINOR PERMIT REVISION, and MINOR SOURCE MODIFICATION

New sources with emissions above exemption levels listed in Table 8-1 and below MSOP levels listed in Table 8-2 will be issued a registration letter that allows the source to construct and operate.

For existing sources that construct a new unit, reconstruct a unit, or modify an existing emission unit the following should be considered:

- | | | |
|-----|----|--|
| YES | NO | Do source wide emissions increase above exemption levels and below MSOP levels? |
| YES | NO | Does the emission increase potential source wide emissions above the current operating permit threshold level? |
| YES | NO | Does the modification trigger a NESHAP or NSPS? |
| YES | NO | Does the modification trigger PSD or Emission Offset? |
| YES | NO | Is a limit required or does an existing limit require a modification? |

If you answered yes to one of the questions listed above, a permit revision is required prior to construction. Allow 45 days for issuance of this type of permit. If you answered yes to more than one, a significant revision, significant modification or construction permit for a new operating permit program may be required. Allow at least 120 days for issuance of this type of permit. This section provides a brief look at a permit revision, minor permit revision, and minor source modification. State rules should be reviewed prior to construction or modification of a source.

The best advice is to:

- Calculate potential emission of any new, reconstructed, or modified units and the source emission after installation;
- Submit an application if a unit will be added, reconstructed, or modified to verify that permit is not necessary or that the level of permit is what was expected.
- Submit the application as soon as possible. If you stumble on a part of the application, complete as much as possible and submit the application and fee as a minor level permit. These permits are addressed as a priority over a notice only change or amendment. Designating the application as at least minor level will get the application in the states tracking system and under a time clock, which may expedite the review. If any additional information was needed in the application to allow for the completing the permit, the assigned permit reviewer will request the information.
- Review operating permit requirements. Regardless of the type of construction permit issued, an existing sources may also have obligations under the operating permit program that restrict operation prior to permit issuance.
- Replacing units and moving facilities may require permitting prior to installation.

MINOR SOURCE OPERATING PERMIT

New sources with emissions above MSOP levels listed in Table 8-2 and below major source thresholds listed in Table 8-4 may be issued a construction and operation permit combined. When a construction and operation permit are issued combined, the source can operate as soon as the construction affidavit is submitted. Allow at least 120 days for issuance of this type of permit.

Existing sources that add a new unit, reconstruct a unit, or modify an existing unit that results in a source wide increase in emissions at or above MSOP levels will require a Significant Permit Revision or Major Source Modification prior to construction. Allow at least 120 days for issuance of this type of permit. Regardless of the type of construction permit issued, an existing source may have obligations under the operating permit requirements that restrict operation prior to permit issuance.

If the potential to emit of the source after installation of any new or modified units increases emissions above the thresholds levels for the current operating permit program, a construction permit or construction and operating permit combined under that new permit level is required.

**TABLE 8-2
MINOR SOURCE PERMIT**

Pollutant	Threshold
VOC	≥ 25 (tpy)
NO _x	≥ 25 (tpy)
PM	≥ 25 (tpy)
PM ₁₀	≥ 25 (tpy)
SO ₂	≥ 25 (tpy)
CO	< 100 (tpy)
Single HAP	< 10 (tpy)
Combined HAPs	< 25 (tpy)
Lead	≥ 25 (tpy)
Hydrogen Sulfides	≥ 25 (tpy)
Total reduced sulfur	≥ 25 (tpy)
Reduced sulfur compounds	≥ 25 (tpy)
Fluorides	< 25 (tpy)

CONSTRUCTION PERMIT MAJOR SOURCE PERMIT THRESHOLDS

If the new source's potential to emit any regulated air pollutant is above major source thresholds listed in Table 8-3, the source must either:

- 1) agree to accept limits on its potential to emit (such as limitations on fuel usage, raw material usage, hours of operation, or by using particulate air pollution control devices) and request a New Source Construction Permit/Federally Enforceable State Operating Permit (FESOP),
- 2) request a New Source Construction Permit/Title V Operating Permit, or
- 3) request a New Source Construction Permit/MSOP with the understanding that it must apply for a Title V Operating Permit within one year of beginning operation.

TABLE 8-3
MAJOR SOURCE PERMIT THRESHOLDS

Pollutant	Threshold
VOC	≥ 100 (tpy)
NO _x	≥ 100 (tpy)
PM ₁₀	≥ 100 (tpy)
SO ₂	≥ 100 (tpy)
CO	≥ 100 (tpy)
Single HAP	≥ 10 (tpy)
Combined HAPs	≥ 25 (tpy)
Lead	≥ 100 (tpy)
Hydrogen Sulfides	≥ 100 (tpy)
Total reduced sulfur	≥ 100 (tpy)
Reduced sulfur compounds	≥ 100 (tpy)
Fluorides	< 100 (tpy)

AFFIDAVIT OF CONSTRUCTION

Once construction has been completed, all new sources and existing source issued a significant permit revision that involves construction or significant source modification will be required to submit the affidavit of construction prior to operation. The source may only operate those emission units covered by the affirmation in the affidavit of construction. A validation letter or an amendment to the modification or revised modification must be received prior to operation of any emission units not covered by the affirmation in the affidavit of construction.

Some of the items a new source should do to comply with the requirements of New Source Review include (but are not limited to):

- Thoroughly complete the air construction permit application, taking care to not omit any information that is needed for IDEM staff to calculate the potential to emit for the source (Insufficient information for determining the level of permitting required can prolong the permitting process),
- Submit 3 copies of the application to IDEM and also, within 10 days of the submission of the application, place a copy on file at the public library in the county in which the permitted activity is to take place,
- Submit the application with a \$100 filing fee (If a higher level of permitting is required, you will be billed for additional permit fees once the level of permitting has been determined),
- Submit any additional permit fees (once additional fees have been billed, the permit accountability clock stops),
- All new sources require payment of the permit fee to start the permit accountability clock starts, some source modifications and permit revisions require permit accountability clock starts

- Once a construction permit is issued, the permittee must begin construction within 18 months, and
- All sources building under a New Source Construction Permit must submit an Affidavit of Construction upon the completion of construction, after which IDEM transitions the source into an operating permit program.
- Maintain contact with the permit reviewer. Additional information may be required and timelines for approval to construct or operate may be affected by the information request. It is important to respond quickly to requests for information and monitor the permit reviewers permit clock stops.

OPERATING PERMITS

Operating permits consolidate all of the equipment at a source both existing and new into one permit. A new source may be applying for or be issued an operation permit in combination with a construction permit or as a separate permit following the issuance of the construction permit. The Permittee may request the issuance of the construction permit and operation permit in combination or as separate documents. Operation permits often take longer to issue than construction permits. Therefore, it is important to determine if your expected construction and operation timelines fit the permit time clocks and manage the application submittal and request for a combined permit appropriately (see [Attachment 1](#)).

STATE OPERATING PERMIT PROGRAM

An operating permit is required by 326 IAC 2 when a source's potential to emit is above exemption thresholds and the source does not qualify for permit by rule. Registrations, MSOPs, and Title V permits are each issued based on the sources potential to emit. Permit by Rule letters, SSOAs, and FESOPs are issued to sources that can take a limit and meet that permitting programs requirements and emission thresholds.

DETERMINE PERMIT LEVEL & APPLICABILITY OF THE CONSTRUCTION PERMIT REQUIREMENTS

In order to determine which construction or operating permit applies to your plant, you must conduct an emissions inventory of all process equipment or processes which may generate air pollutants. This inventory must take into account:

- All air emitting sources;
- The maximum rated capacity of plant equipment;
- The date of installation of process equipment;
- The potential-to-emit pollutants from all plant equipment; and
- Whether any air permits currently exist, or have been in place for any equipment at your plant.

When this inventory has been completed, the following should be evident:

- What process emissions are generated from the entire plant;
- What quantities are emitted;
- What type of permit is required for the source; and
- What permitting options are available to your plant?

CALCULATING POTENTIAL EMISSIONS

Now that the steps of the inventory have been defined, it becomes necessary to calculate the emissions from your process equipment in order to actually determine your air permitting needs. Sample emission calculations for aggregate operations appear at the end of this Chapter. It will be necessary to acquire information including the maximum capacity of all process equipment in tons handled per hour (or some similar units) and some emission factors for those processes.

Emission factors are not always available and can sometimes be developed based upon source testing at a plant, material balance methods or some other method. The most commonly used sources for acceptable emission factors are AP-42 <http://www.epa.gov/ttn/chief/ap42/index.html> and Factor Information Retrieval (FIRE), which can be downloaded from this website <http://www.epa.gov/ttn/chief/software/fire/index.html>. AP-42 chapter 11 for mineral production industry and chapter 13 for miscellaneous sources should contain the most prevalent emission factors for the aggregate industry. FIRE can be searched by the SCC number or description level. Mineral products begin at 3-05-001-01.

THE APPLICATION PROCESS

You will need to download forms from state website or request application forms from the state or local permitting authority. The address for requesting and submitting an application may be different. When submitting your application, be sure to review the website or contact the permitting agency to determine the correct address, amount of the permit fee, and title for check payment.

STATE

IDEM-OAQ, Permits

100 North Senate Avenue

10th floor IGCN

Indianapolis, IN 46206-6015

Contact the Permit Reviewer of the Day 1-800-451-6027, press 0 and ask for extension 3-0178;
or dial (317) 233-0178.

<http://www.in.gov/idem/air/permits/apps/index.html>

ANDERSON

William Dorff, Director

Anderson Office of Air Management

P.O. Box 2100

120 East 8th Street

Anderson, IN 46011

(765) 648-6158

(765) 648-5924 (FAX)

EVANSVILLE

Dona Bergman, Director

Evansville EPA

100 East Walnut Street

Evansville, IN 47713

(812) 435-6145

(812) 435-6155 (FAX)

GARY

Dorreen Carey, Director

Gary Department of Environmental Affairs

839 N. Broadway

Gary, IN 46402

(219) 882-3000

(219) 882-3012 (FAX)

<http://www.gary.in.us/environmentalaffairs/default.asp>

HAMMOND

Ronald Novak, Chief

Hammond Department of Environmental Mgmt.

5925 Calumet Avenue

Hammond, IN 46320

(219) 853-6306

(219) 853-6343 (FAX)

INDIANAPOLIS

John Chavez, Administrator
Office of Environmental Services
2700 South Belmont Ave.

Indianapolis, IN 46221

(317) 327-2234

(317) 327-2274 (FAX)

<http://www.indygov.org/eGov/City/DPW/Environment/AirQuality/AirPermitting/home.htm>

ST. JOSEPH COUNTY

Currently no information is listed

VIGO COUNTY

George Needham, Director

Vigo County Air Pollution Control

103 South 3rd Street

Terre Haute, IN 47807

(812) 462-3433

(812) 462-3447 (FAX)

<http://www.vigocounty.org/vcapc/>

WHAT AN IDEM INSPECTOR LOOKS FOR

The following items provide a sample of what an IDEM inspector will focus on during an inspection. You are strongly urged to **read your permit conditions** as these will likely outline most requirements for basic compliance:

1. Watering roads (and keeping records of this, if required);
2. Fugitive dust from operations and vehicles;
3. Tracking dust onto public roadways;
4. Copies of construction permits, operating permits, and agreements at the site;
5. Compliance with specific permit conditions;
6. Compliance with reporting and recordkeeping requirements;
7. Covering trucks holding aggregate;
8. Availability and use of wheel wash.

Note: NSPS requires that process operations emit less than 10% opacity for screens and conveyors, less than 15% opacity for crushers, and less than 7% for baghouses.

If you want to be a leader in the environmental arena, the following are recommended:

1. Continuous wet suppression of all potential sources of fugitive dust that have not been controlled by dry suppression.
2. Water roadways continuously when weather conditions are dry.
3. All on-plant, diesel-powered equipment (including trucks) powered with low sulfur fuel oil.

4. Ensure that there are three appointed personnel qualified as visible emission readers.
5. Perform reclamation in the “mined out” areas of a quarry, if applicable.

CASE STUDY w/ EXAMPLE CALCULATIONS

Joe operates a quarry in Vanderburgh County. To access Joe’s on-site 0.4 acre outdoor storage plant, between 6 and 8 of his client’s trucks must travel a total 1/8-mile along Joe’s unpaved two-lane gravel drive per load. Joe’s operations include processing a total of 100 cubic yards of material totaling 140 tons per day. Normal operations are from 6 am to 4 pm, Monday to Saturday. Normal operations include the following activities:

- Raw material is conveyed to the crushing operations.
- Crusher #1 generates larger aggregate.
- 56 tons of this larger aggregate is hauled away daily.
- The balance undergoes secondary crushing (Crusher #2) and then screening at (Screen #1).
- 84 tons of the secondary material is hauled away on a daily basis.
- In order to assure the availability of materials, Joe maintains one week’s materials stockpiled on site in the 0.4 acre storage piles.
- Joe also has another Crusher (#3) and screen (#2) which is only used for one full day a week to produce 20 tons of small aggregate.

The above information is necessary for calculating the PTE of the source that will aid in establishing the level of construction and operation permits. The resulting calculations will also provide the information necessary for determining state PM rule applicability and determining compliance with PM limits.

After a quick review of the Table 8-4, the results indicate that the source is a minor source. Since the total potential emission of PM₁₀ at the source is 16 tons per year, a Title V or FESOP threshold is not triggered. Since minor source operating permits still regulate PM, and the total potential PM emissions are 48.58 tons per year, an MSOP is applicable. Though a MSOP permit may be obtained for this source, the operator might also consider two other operating permit programs. This source qualifies for both the SSOA (see [Attachment 2](#)) and Permit by Rule.

Table 8-2
ACTUAL AND POTENTIAL PARTICULATE MATTER (PM) EMISSION
(SAMPLE CALCULATION)

Non Fugitive							Totals			
Process	SCC Code	Process Rate	Units	Emission Factor PM-10	Emission Factor (PM)	Units	Potential PM-10 ton/yr	Potential PM ton/yr	Actual * 3060 hrs/yr PM-10 ton/yr	Actual PM tons/yr
Screen (Screening #1)	3-05-020-02	0.33	tons/hr	0.0087	0.025	lbs/ton	0.01	0.04	0.00	0.01
Screen (Screening #2)	3-05-020-02	8.4	tons/hr	0.0087	0.025	Lb/ton	0.32	0.92	0.11	0.32
conveying	3-05-020-06	14.0	tons/hr	0.0011	0.003	lbs/ton	0.07	0.18	0.02	0.06
Primary Crushing (Crusher #1)	3-05-020-03	5.6	tons/hr	0.0024	0.00504	lbs/ton	0.06	0.12	0.02	0.04
Secondary Crushing (Crusher #2)	3-05-020-03	8.4	tons/hr	0.0024	0.00504	lbs/ton	0.09	0.19	0.03	0.06
Tertiary Crushing (Crusher #3)	3-05-020-03	0.33	tons/hr	0.0024	0.00504	lbs/ton	0.00	0.01	0.00	0.00
TOTALS (non fugitive)							0.55	1.46	0.18	0.49
Fugitive										
Bulk Loading	3-05-025-06	14	tons/hr	0.0024	0.02	1b/ton prod.	0.15	1.23	0.05	0.43
Storage	Ch. 13.2.4.3	14	tons/hr	0.07	0.14	1b/ton	4.29	8.58	1.50	3.00
Unpaved Roads	Ch. 13.2.2.1	Equation below					11.01	37.31	3.85	13.03
TOTALS (fugitive)							15.45	47.12	5.4	16.46
TOTALS (fugitive and non fugitive combined)							16.00	48.58	5.58	16.95

Storage emissions (13.2.4.3(1)), which result from wind erosion, are determined by the following calculations:

$$E(\text{lb/ton}) = k(0.0032) (U/5)^{1.3}/(M/2)^{1.4}$$

Where by:

- E = emission factor
 K = particle size multiplier (dimensionless)
 U = mean wind speed, meters per second (m/s) (miles per hour [mph])
 M = material moisture content (%)

Table 13.2.4-1 Typical Silt And Moisture Contents Of Material At Various Industries

Industry	No. of Facilities	Material	Silt Content (%)			Moisture Content (%)		
			No. Of Samples	Range	Mean	No. Of Samples	Range	Mean
Stone quarrying and processing	2	Crushed limestone	2	1.3 -1.9	1.6	2	0.3 – 1.1	0.7
		Various limestone products	8	0.8 - 14	3.9	8	0.46 – 5.0	2.1

The particle size multiplier in the equation, k, varies with aerodynamic particle size range, as follows:

Aerodynamic Particle Size Multiplier (k) For Equations 1				
< 30 µm 0.74	< 15 µm 0.48	< 10 µm 0.35	< 5 µm 0.20	< 2.5 µm 0.11

Ranges Of Source Conditions For Equation 1		
Silt Content (%)	Moisture Content (%)	Wind Speed (mph)
0.44 - 19	0.25 - 4.8	1.3 - 15

Select worse case for industry type unless site specific information is available

Where by:

- U = mean wind speed = 15
 M = material moisture content (%) = 0.3

PM $E(\text{lb/ton}) = 0.74*(0.0032)*(15/5)^{1.3}/(0.3/2)^{1.4} = 0.14$

PM10 $E(\text{lb/ton}) = 0.35*(0.0032)*(15/5)^{1.3}/(0.3/2)^{1.4} = 0.07$

Unpaved roads AP-42, Ch 13.2.2(12/2003).

Using the information from the case study, we know that Joe has 6 to 8 client trucks, 140 tons per day of stone to haul, and 0.125 mile of unpaved road to travel. To calculate PM emissions, we also need the average vehicle weight, average number of trips taken by all vehicles per hour, and the silt content of the roads. For the purposes of these sample calculations we assumed that the trucks weigh 15 tons each and 4 one way trips are made per hour. AP-42 has a silt content factor for plant roads and haul roads. We chose the worse case emission factor for haul road.

2 Total trip/hr (based on average plant functions) x
0.25 Miles/round trip (based on average plant functions) x
potential 8760 hr/yr = 4380 mi/year
actual 3060 hr.yr = 1530 mi/year

PM emissions

$$Ef = k*[s/12]^a*[(W/3)^b]$$

Where by:

k	=	4.9	particle size multiplier for PM (AP-42 Table 13.2.2-2)
s	=	10	mean % silt content worse case (AP-42 Table 13.2.2-1 haul roads 8.3% and plant roads 10%)
a	=	0.7	constant for PM-30 or TSP (AP-42 Table 13.2.2-2)
b	=	0.45	constant for PM-10 and PM-30 or TSP (AP-42 Table 13.2.2-2)
W	=	15	tons average vehicle weight

$$Ef = 4.9*[(10/12)^{0.7}]*[(15/3)^{0.45}]$$

$$Ef = 17.04 \text{ lb/mile}$$

$$\text{Potential Ton PM /year} = 17.04 \text{ lb/mile} * 4380 \text{ mi/year} * 1 \text{ ton/ 2000 lb} = \mathbf{37.71}$$

$$\text{Actual Ton PM /year} = 17.04 \text{ lb/mile} * 1530 \text{ mi/year} * 1 \text{ ton/ 2000 lb} = \mathbf{13.03}$$

Unpaved roads**PM10 emissions**

$$Ef = k * [(s/12)^a] * [(W/3)^b]$$

k	=	1.5	particle size multiplier for PM-10 (AP-42 Table 13.2.2-2)
s	=	10	mean % silt content worse case (AP-42 Table 13.2.2-1 haul roads 8.3% and plant roads 10%)
a	=	0.9	constant for PM-10 (AP-42 Table 13.2.2-2)
b	=	0.45	constant for PM-10 and PM-30 or TSP (AP-42 Table 13.2.2-2)
W	=	15	tons average vehicle weight

$$Ef = 1.5 * [(10/12)^{0.9}] * [(15/3)^{0.45}]$$

$$Ef = 5.03 \text{ lb/mile}$$

$$\text{Potential Ton PM /year} = 5.03 \text{ lb/mile} * 4380 \text{ mi/year} * 1 \text{ ton/ 2000 lb} = \mathbf{11.01}$$

$$\text{Actual Ton PM /year} = 5.03 \text{ lb/mile} * 1530 \text{ mi/year} * 1 \text{ ton/ 2000 lb} = \mathbf{3.85}$$

CHAPTER 8 - ATTACHMENT 1
326 IAC 2-9 Source Specific Operating Agreements (SSOA)

Attachment 1: Source Specific Operating Agreements (SSOA)

Type of SSOA	Principle pollutants	Material Throughput	Emission Equivalents	Submit a construction permit?
Abrasive Cleaning	PM PM-10	<= .01 grain per actual cu. ft/ minute at no more than 40,000 cu. ft./minute	PM, PM-10 <= 15 Tons per year	No
Coal Mine and Coal Preparation Operations	PM PM-10	< 5,000,000 Tons per year \$600 annual permit fee	PM, PM-10 < 100 Tons per year Excluding fugitive dust	Construction permits for coal mining and processing facilities are issued by the IDNR
Crushed Stone	PM PM-10	< 400,000 tons throughput per year; 4 crushers, 7 screens, a conveying operation	PM, PM-10 < 25 Tons per year Including fugitive dust	No
Crushed Stone	PM PM-10	< 1,000,000 tons throughput per year; 6 crushers, 13 screens, a conveying operation	PM, PM-10 < 25 Tons per year Excluding fugitive dust	Yes
Crushed Stone	PM PM-10	< 3,000,000 tons throughput per year; 9 crushers, 17 screens, a conveying operation \$800 annual permit fee	PM, PM-10 < 100 Tons per year Excluding fugitive dust	Yes
External Combustion (Emissions associated with boilers, dryers, ovens, or various heaters)	CO, SO ₂ , NO ₂ , NO _x , VOC, PM, PM-10, HAP	Various limits	Worst Case Emissions of: <= 50 Tons per year *(see specific fuel limits)	Yes
Internal Combustion (Emissions associated with internal, diesel, jet, rotary, or other internal combustion engines, or turbines)	CO, SO ₂ , NO ₂ , NO _x , VOC, PM, PM-10, HAP	Various limits	Worst case emissions of: <= 50 Tons per year *(see specific fuel limits)	Yes
Ready Mix Concrete Batch Operations	PM PM-10	<= 300,000 cubic yards of production	PM, PM-10 < 25 Tons per year Including fugitive dust	No

Type of SSOA	Principle pollutants	Material Throughput	Emission Equivalents	Submit a construction permit?
Sand and Gravel	PM PM-10	< 410,000 tons throughput per year; 5 crushers, 10 screens, a conveying system	PM, PM-10 < 25 Tons per year Including fugitive dust	No
Sand and Gravel	PM PM-10	< 1,000,000 tons throughput per year; 9 crushers, 20 screens, a conveying system	PM, PM-10 < 25 Tons per year Excluding fugitive dust	Yes
Sand and Gravel	PM PM-10	< 3,100,000 tons throughput per year; 12 crushers, 24 screens, a conveying system	PM, PM-10 < 100 Tons per year Excluding fugitive dust	Yes
One Time Combined SSOA (issued to combine more than one separately issued SSOAs)	Various		< 100 Tons per year Excluding fugitive dust	No

CHAPTER 8 - ATTACHMENT 2
Permit Levels

Attachment 2: Permit Levels

Permit Type & Subtype	Time Clock	Clock Starts When:	Public Notice 30 Days	Epa Review 45 Days	Filing Fee	Construction Permit Fee	Refund*	Construction Can Begin	Operation Can Begin
Title V									
Part 70 New Source	120 days	Filing Fee received	Yes	Yes	100***	\$3,500**	Yes	Permit Issued	Permit Issued
Part 70 Existing Source	18 months	app received	Yes	Yes	No	No	No	NA	NA
Part 70 New Source - PSD	270 days	Filing Fee received	Yes	Yes	100***	\$6,000	Yes	Permit Issued	Permit Issued
Significant Source Modification	120 days	app received	Yes	Yes	No	\$3,500	Yes	Permit Issued	NA
Significant Source Modification - PSD	270 days	app received	Yes	Yes	No	\$6,000	Yes	Permit Issued	NA
Minor Source Modification	45 days	app received	No	No	No	\$500	Yes	Permit Issued	Na
Significant Permit Modification	270 days	app received	Yes	Yes	No	No	No	NA	Permit Issued
Minor Permit Modification	90 days ²	app received	Yes	Yes	No	No	No	NA	Permit Issued
Amendment	60 days	app received	No	No	No	No	No	Upon app submittal	Upon app submittal
Renewal	18 months	app received	Yes	Yes	No	No	No	NA	NA

Permit Type & Subtype	Time Clock	Clock Starts When:	Public Notice 30 Days	Epa Review 45 Days	Filing Fee	Construction Permit Fee	Refund*	Construction Can Begin	Operation Can Begin
FESOP									
FESOP - New Source	120 days	Filing Fee Received	Yes	No	100***	\$3,500**	Yes	Permit Issued	Permit Issued
FESOP - Existing Source	270 days	Filing Fee Received	Yes	No	\$3,000	No	Yes	NA	NA
FESOP - New Source - PSD	270 days	Filing Fee Received	Yes	Yes	100***	\$6,000	Yes	Permit Issued	Permit Issued
FESOP - General Asphalt Permit		Filing Fee Received	No	No	\$500	No	Yes	NA	NA
Significant Permit Revision	120 days	app received	Yes	No	No	\$3,500	Yes	Permit Issued	Permit Issued
Significant Permit Revision - PSD	270 days	app received	Yes	Yes	No	\$6,000	Yes	Permit Issued	Permit Issued
Minor Permit Revision	45 days	app received	No	No	No	\$500	Yes	Permit Issued	Permit Issued
Amendment	60 days	app received	No	No	No	No	No	Upon app submittal	Upon app submittal
Renewal	270 days	app received	Yes	No	No	No	No	NA	NA

Permit Type & Subtype	Time Clock	Clock Starts When:	Public Notice 30 Days	Epa Review 45 Days	Filing Fee	Construction Permit Fee	Refund*	Construction Can Begin	Operation Can Begin
MSOP									
MSOP - New Source	120 days	Filing Fee Received	Yes	No	100***	\$3,500	Yes	Permit Issued	Permit Issued
MSOP - Existing Source	NA	Filing Fee Received	Yes	No	\$100	No	No	NA	NA
MSOP - New Source - PSD	270 days	Filing Fee Received	Yes	Yes	100***	\$6,000	Yes	Permit Issued	Permit Issued
Significant Permit Revision	120 days	Filing Fee Received	Yes	No	100***	\$3,500	Yes	Permit Issued	Permit Issued
Significant Permit Revision - PSD	270 days	Filing Fee Received	Yes	Yes	100***	\$6,000	Yes	Permit Issued	Permit Issued
Minor Permit Revision	45 days	Filing Fee Received	No	No	\$100	\$500	Yes	Permit Issued	Permit Issued
Notice Only Change	30 days	app received	No	No	No	No	No	30 days prior to app submittal	30 days prior to submittal
Renewal	NA	app received	Yes	No	No	No	No	NA	NA

Permit Type & Subtype	Time Clock	Clock Starts When:	Public Notice 30 Days	Epa Review 45 Days	Filing Fee	Construction Permit Fee	Refund*	Construction Can Begin	Operation Can Begin
SSOA									
New Source	120 days	Filing Fee Received	Yes	No	100***	\$3,500	Yes	Permit Issued	Permit Issued
Abrasive Cleaning	60 days	Filing Fee Received	No	No	\$500	No	Yes	Permit Issued	Permit Issued
Coal Mine and Coal Preparation Operations	60 days	Filing Fee Received	No	No	\$500	No	Yes	Permit Issued	Permit Issued
Crushed Stone	60 days	Filing Fee Received	No	No	\$500	No	Yes	Permit Issued	Permit Issued
Crushed Stone	60 days	Filing Fee Received	No	No	\$500	No	Yes	Permit Issued	Permit Issued
Crushed Stone	60 days	Filing Fee Received	No	No	\$500	No	Yes	Permit Issued	Permit Issued
External Combustion	60 days	Filing Fee Received	No	No	\$500	No	Yes	Permit Issued	Permit Issued
Internal Combustion	60 days	Filing Fee Received	No	No	\$500	No	Yes	Permit Issued	Permit Issued
Ready Mix Concrete Batch Operations	60 days	Filing Fee Received	No	No	\$500	No	Yes	Permit Issued	Permit Issued
Sand and Gravel	60 days	Filing Fee Received	No	No	\$500	No	Yes	Permit Issued	Permit Issued
Sand and Gravel	60 days	Filing Fee Received	No	No	\$500	No	Yes	Permit Issued	Permit Issued
Sand and Gravel	60 days	Filing Fee Received	No	No	\$500	No	Yes	Permit Issued	Permit Issued
Amendment or revision	60 days	Filing Fee Received	No	No	No	No	Yes	Permit Issued	Permit Issued
One Time Combined SSOA	60 days	Filing Fee Received	No	No	\$500	No	Yes	Permit Issued	Permit Issued

Permit Type & Subtype	Time Clock	Clock Starts When:	Public Notice 30 Days	Epa Review 45 Days	Filing Fee	Construction Permit Fee	Refund*	Construction Can Begin	Operation Can Begin
Miscellaneous									
Exemption	60 days	Filing Fee Received	No	No	\$100	No	No	NA	NA
Revocation	NA	NA	No	No	No	No	No	NA	NA
Review Request	NA	NA	No	No	No	No	No	NA	NA

* A refund is required if the permit is not processed within the time clock listed above

** Filing fee for these permits is creditable towards the permit fee.

CHAPTER 9

ABOVEGROUND AND UNDERGROUND STORAGE TANKS

INTRODUCTION

Aboveground Storage Tanks (ASTs) and Underground Storage Tanks (USTs) present a range of environmental and safety concerns. They frequently contain substances which could be dangerous if improperly stored, or damaging if released into the soil, surface water or groundwater. The regulations governing ASTs and USTs cover fire safety, tank integrity, notification to regulatory agencies, maintenance, monitoring, upgrade and closure, and UST contractor certification. They address everything from the construction and installation of the tank to its final removal and disposal.

The Indiana Fire Prevention Code (IFPC) at 675 IAC 22-2.3 (which is the same as the 2000 International Fire Code (IFC), but with Indiana amendments adopted in 2003) addresses the storage, use, dispensing, and mixing of flammable and combustible liquids, in all types of containers, industries, and situations. This chapter will be concerned mainly with the storage of these liquids in ASTs or USTs, and may to a lesser degree address other aspects of the storage, transfer, and use of such, when there is overlap. Regulations governing portable tanks are also found in the IFPC. These regulations are not discussed in this chapter, however, owners or operators who use portable tanks to store flammable or combustible liquids should be aware of those regulations.

The Federal regulations governing USTs are found in 40 CFR 280. The Indiana regulations governing USTs are found in 329 IAC 9. The applicability of each of these standards, and the requirements with which owners and operators must comply, are discussed in this chapter.

This chapter provides only a brief overview of UST closure requirements. Owners and operators closing a UST system under 329 IAC 9-6 are encouraged to contact IDEM's UST Branch to obtain the most recent copy of The Underground Storage Tank Branch Guidance Manual. Currently, the most recent version of the Guidance Manual is dated *May 2002*. This IDEM guidance manual provides more detailed information on the procedures, paperwork, and other information required by IDEM in the event of a tank system closure.

Storage tanks containing petroleum products are also subject to SPCC requirements, which are discussed in Chapter 11 of this manual.

APPLICABILITY

The IFPC applies to all *flammable and combustible liquids*, except those that are solid at 100° F or above. A liquid is flammable or combustible based upon its *flashpoint*, the lowest temperature at which the vapors of the liquid will ignite.

- Flammable liquids that have a flashpoint below 100° F are considered Class I liquids.

- Combustible liquids have a flashpoint above 100° F and are either Class II or Class III liquids.

All owners or operators who store, use, dispense, or mix flammable or combustible liquids are subject to the IFPC. The applicability provisions are found in 675 IAC 22-2.3-102 of the rule. The rule applies retroactively, so there is no “effective date” after which owners and operators may come into compliance.

The requirements of 40 CFR 280, *Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks*, apply to all owners and operators of a UST system, with the exceptions given below. The State of Indiana requirements, 329 IAC 9, have the same applicability provisions, with slightly different exceptions. An *underground storage tank system*, under both Federal and Indiana law, is an underground storage tank, connected underground piping, underground ancillary equipment, and the containment system, if present. A tank is a regulated underground storage tank if it meets the following two conditions:

1. It is used to contain an accumulation of regulated substances, specifically:
 - Any substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 but not including any substance regulated as a hazardous waste under subtitle C.
 - Petroleum, including (but not limited to) crude oil, motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.
2. At least 10 percent of the tank’s volume, including the volume of underground pipes connected to it, is beneath the surface of the ground.

Certain types of underground containers are excluded from the definition of underground storage tank. The exclusions are found in the complete definition of underground storage tank, taken from 40 CFR 280.12 (see [Attachment 1](#)). Owners and operators of tank systems should study this definition and use it to help them determine whether their tanks are subject to the Federal regulations.

Some types of UST systems are excluded from the state and Federal regulations, namely:

- UST systems holding RCRA hazardous wastes (as they are regulated by RCRA).
- Systems which are part of a wastewater treatment facility regulated under Section 402 of the Clean Water Act.
- Equipment or machinery that contains regulated substances for operational purposes (such as hydraulic lift tanks or electrical equipment tanks).

- Any UST system that contains a de minimus concentration of regulated substances (less than 110 gallons).
- Any emergency spill or overflow containment UST system that is expeditiously emptied after use.
- Any UST system whose capacity is 110 gallons or less is excluded from Federal regulations. In the State of Indiana, such systems are subject to 329 IAC 9 if two or more UST systems are on-site whose individual capacities are 110 gallons or less, but the total capacity of all tanks on-site containing the same product exceeds 110 gallons. This is the only difference in the state and Federal exclusions.

UST systems are excluded from Subparts B, C, D, E, and G of the Federal program, and from 329 IAC 9-2, 9-3, 9-4 and 9-6 if they are of the following types:

- Wastewater treatment tank systems.
- UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954.
- UST systems that are part of an emergency generator system at nuclear power generation facilities regulated by the Nuclear Regulatory Commission under 10 CFR Part 50, Appendix A.
- Airport hydrant fuel systems.
- UST systems with field constructed tanks.

Such types of systems are still subject to 40 CFR 280.11 of the Federal rules, Interim Prohibition for Deferred UST Systems.

In addition to the above exclusions, Subpart D of the Federal program (which deals with leak detection) does not apply to any UST system that stores fuel solely for use by emergency power generators.

The above bullet lists can be used as checklists by owners and operators of UST systems to determine applicability of the various state and Federal rules for their tanks.

COMPLIANCE REQUIREMENTS

ASTs and USTs containing flammable or combustible substances are subject to the design and construction requirements of 625 IAC 22-20.3, which references Chapters 22 and 34 from International Fire Code, 2000 edition.

FIRE AND BUILDING SERVICES PLAN DIVISION REVIEW REQUIREMENTS

If you are installing one or more bulk storage tanks, piping or dispensing equipment for Class I, II, III-A or III-B liquids, liquefied petroleum (LP) gas, or liquefied natural gas (LNG) or replacement of such tanks or piping at the same location you must file an application with the Building Commissioner. See [Attachment 2](#) for a copy of the application.

The owner or operator must be able to document that the material of tank construction is compatible with the liquid to be stored. There are special restrictions on tanks constructed of combustible materials, unlined concrete tanks, and tanks used to store liquid with a specific gravity exceeding that of water. Tanks containing flammable or combustible materials may have combustible or non-combustible linings. There are additional provisions in 675 IAC 22-2.3 and IFC Chapter 34 regulating low pressure tanks and pressure vessels. Additional protection inside tanks is required when corrosion beyond the design formulas is anticipated.

Piping, valves, and fittings for use with materials subject to 675 IAC 22-2.3 and IFC Chapter 34 are covered in the rule. The materials and design of pipes, valves and fittings must have “adequate strength and durability to withstand the pressures, structural stress and exposures to which they may be subjected”. Special restrictions are placed upon low melt point materials used outdoors in aboveground piping systems, or within buildings. Special requirements are also placed upon fluid-handling components which may be subject to external corrosion.

UST systems subject to 40 CFR 280.11, as determined in the Applicability section, above, must comply with the design requirements in that rule. Specifically, the tank system must be constructed:

- To prevent a release due to corrosion or structural failure for the operational life of the UST system.
- Of material that is compatible with the stored substance.

40 CFR 280, Subpart B, *UST Systems: Design, Construction, Installation and Notification*, gives design and construction requirements for UST systems subject to the rule. UST systems installed after December 22, 1988 are subject to the performance standards of 40 CFR 280.20. Under that section, the tanks and piping must be “designed, constructed, and protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory”. To that end, various standards published by Underwriter’s Laboratories (UL), Underwriter’s Laboratories of Canada, the American Society for Testing and Materials (ASTM), the Steel Tank Institute, the National Association of Corrosion Engineers, the Association for Composite Tanks, the National Fire Protection Association, and the American Petroleum Institute are referred to as acceptable in paragraphs (a) and (b) in 40 CFR 280.20.

Spill and overfill prevention equipment is required for all UST systems installed after December 22, 1988. Owners and operators of UST systems must use spill prevention equipment that will prevent the release of product to the environment when the transfer hose is detached from the fill pipe. They must also use overfill protection equipment that will:

- Automatically shut off flow into the tank when the tank is no more than 95 percent full; or
- Alert the transfer operator when the tank is no more than 90 percent full by restricting the flow into the tank or triggering a high-level alarm; or
- Restrict flow 30 minutes prior to overfilling, alert the operator with a high level alarm one minute before overfilling, or automatically shut off flow into the tank so that none of the fittings located on top of the tank are exposed to product due to overfilling.

Owners and operators do not need to use overfill prevention equipment as described above if:

- Alternate, equally effective equipment is used; or
- The system is filled by transfers of no more than 25 gallons at a time.

UST systems installed before December 22, 1988 are subject to 40 CFR 280.21. Upgrading of Existing UST Systems. By December 22, 1998, all existing UST systems were required to comply with one of the following requirements:

- New UST system performance standards under 40 CFR 280.20.
- Tank, piping, and spill and overflow prevention system upgrade requirements listed in 40 CFR 280.21, paragraphs (b) through (d).
- Closure requirements under Subpart G of Part 280, including applicable requirements for corrective action under Subpart F.

Indiana rules governing USTs do not specifically address design, construction, and upgrading of UST systems.

INSTALLATION

Installation of ASTs and USTs containing flammable and combustible materials is regulated under 675 IAC 22-2.3 of the Indiana Fire Prevention Code (IFPC). Stationary tanks located inside buildings are subject to Building Code requirements, support requirements, venting and manifold requirements, regulations on tank openings other than vents, and overflow protection under 675 IAC 22-2.3-207, which references and IFC 2206.2.2.

Stationary ASTs located outside the buildings are subject to 675 IAC 22-2.3-208 and IFC Section 2206.2.3 and table 2206.2.3, which discusses the placement of ASTs containing flammable and combustible materials outside buildings in relation to property lines, public ways, and other buildings on the property, as well as spacing between adjacent tanks. The type and class of liquid and the type of tank together determine how a tank must be placed for fire safety purposes. See [Attachment 3](#) for tables that define spacing between tanks an property lines, and for spacing between tanks, and to the nearest dispenser.

Installation of USTs is regulated by 675 IAC 22-2.3. Tanks may be installed under buildings, if care is taken not to undermine the foundation of the building, or to permit the load of the structure to be transferred to the tank. Minimum spacing for tanks installed under buildings or outdoors is specified.

Installation of underground tanks and piping is regulated in 40 CFR 280. Like design and construction, installation of new UST systems (after December 22, 1988) must be performed “in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer’s instructions”. Several acceptable standards are referenced in paragraph (d) of 40 CFR 280.20. The installation must be certified to demonstrate compliance with installation rules. Certification of compliance is required on the notification forms discussed further on in this section. The federal rules give several options for certifying compliance, which differ from the Indiana rule.

Realistically speaking, there are no size limitations on aboveground storage tanks, as long as they are in compliance with the applicable provisions of 675 IAC 22-2.3 and IFC Chapters 22 and 34.

Indiana rules for UST systems placed in operation on or after December 1, 1992 are found at 329 IAC 9-2-1 and 329 IAC 9-2-1.1 (for USTs within a one year time of travel to a community public water supply well). For new UST systems, the Indiana rules state that the owner and operator shall ensure the following:

- (A) The installer has been certified by the office of the state fire marshal under rules of the fire prevention and building safety commission at 675 IAC 12-12.
- (B) One (1) or more of the following methods of certification, testing, or inspection is used to demonstrate compliance with subdivision (4):
 - (i) The installer has been certified by the tank and piping manufacturers.
 - (ii) The installation has been inspected and certified by a registered professional engineer under IC 25-31-1 with education and experience in UST system installation.
 - (iii) The installation has been inspected and approved by one (1) of the following:
 - (AA) The agency.
 - (BB) The office of the state fire marshal.

- (iv) The owner and operator have complied with another method for ensuring compliance with subdivision (4) that is determined by the commissioner to be no less protective of human health and the environment.
- (C) The owner and operator shall provide a certification of compliance on the notification form under section 2 of this rule. The certification of compliance for the notification form must demonstrate that the installer has been certified by the fire marshal.

NOTIFICATION

Subpart B, 40 CFR 280.22 of the Federal rule requires UST system owners who bring a system into use after May 8, 1986 to notify the appropriate regulatory agency of the system's existence within 30 days. The State of Indiana initial notification requirements, found in 329 IAC 9-2-2, are essentially similar to the Federal requirements. The notices are to be submitted on the form approved by IDEM. See [Attachment 4](#) for a copy of this form and instructions. Notification for several tanks at the same location may be submitted on one form, but tanks at different locations must have a separate form for each separate place of operation. All owners and operators of new UST systems must certify compliance with the following requirements in the notification form:

- Installation of tanks and piping conducted by an installer certified by the fire marshal.
- Cathodic protection of steel tanks and piping under 40 CFR 280.20(a) and (b).
- Release detection under 40 CFR 280.41 and 280.42.
- Financial responsibility under Subpart H (required by Federal rule).

Financial responsibility is required for all owner/operators of UST systems. You must demonstrate your financial responsibility for the cost of cleaning up a leak and compensating other people for bodily injury and property damage. These requirements are briefly summarized in [Attachment 5](#).

The State of Indiana requires all owners and operators of UST systems to ensure that anyone who performs tank system installations, testing, upgrades, closures, removals, and change-in-service certified by the state fire marshal. Owners or operators who upgrade their UST system, temporarily or permanently close a UST system, perform a change-in-service, or install a method of release detection must notify IDEM within 30 days before starting the change. See [Attachment 6](#) for an incident reporting flowchart, a UST flowchart, and an organizational chart for reporting.

GENERAL OPERATING REQUIREMENTS

The use, dispensing, and mixing of Class I, Class II, and Class III-A liquids must be done in compliance with 675 IAC 22-2.3 and IFC Chapter 34. Dispensing equipment is regulated, and bonding requirements are discussed. Container-filling facilities, dispensing outside the buildings, and loading and unloading facilities must all operate in compliance with 675 IAC 22-2.3 and IFC Chapter 34.

Subpart C of the Federal rule addresses general operating requirements for UST systems. Under Subpart C, owners and operators must:

- Ensure that releases due to spilling or overfilling do not occur.
- Check that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made, and monitor the transfer operation constantly while it is occurring.
- Report, investigate, and clean up spills and overfills.

Steel UST systems with cathodic corrosion protection systems must be tested within 6 months of installation, and re-tested at least every 3 years to ensure that the system is working properly. UST systems with impressed current cathodic protection systems must also be inspected every 60 days of guarantee that the system is working properly.

Repairs to UST systems must comply with 40 CFR 280.33. Repairs must be conducted “in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory,” and several acceptable industry standards are suggested in the rule. Metal pipe sections or fittings that have released product as a result of corrosion or other damage must be replaced, but fiberglass pipes and fittings may be repaired. Repaired tanks and piping must be tightness tested within 30 days after the repair is completed, unless one of the other methods of ensuring tightness listed in the rule is used.

RECORDKEEPING AND REPORTING

Both the state and Federal UST programs have recordkeeping and reporting requirements. In addition to the notification requirements discussed above, the State of Indiana requires the following records to be kept (see 329 IAC 9-3-1):

- Documentation of operation of corrosion protection equipment.
- Document of UST system repairs.
- Documentation of recent compliance with release detection requirements.
- Results of the site investigation conducted at permanent closure.

Federal recordkeeping and reporting requirements, found in 40 CFR 280.34, also require a corrosion expert's analysis of site corrosion potential, if corrosion protection equipment is not used. Under both state and Federal rules, records may be kept at the UST site or at a readily available alternate site. In the case of permanent closure, owners or operators may mail the closure records to IDEM for safekeeping.

FEES

Fees for UST are based on tank size. Once you have registered your UST with the state, you will receive an annual notification and invoice for each registered tank.

RELEASE DETECTION SYSTEMS

Under 40 CFR 280.40, all new and existing UST systems must have applied a method, or combination of methods of release detection. All new UST systems are required to have a method of release detection immediately upon installation. See [Attachment 7](#) for a summary of UST leak detection, corrosion protection and spill/overfill prevention requirements.

The release detection system must be able to detect a release from any portion of the tank and connected underground piping that routinely contains product. All methods must meet the performance requirements in 40 CFR 280.43 and 280.44

Existing and new Petroleum UST systems are subject to the release detection requirements of 40 CFR 280.41. They must be monitored at least every 30 days for releases using one of the methods listed in 40 CFR 280.43 (d) through (h) with the exception that tanks with a capacity of 550 gallons or less may use weekly tank gauging that is conducted in accordance with 40 CFR 280.43 (b)

Release monitoring methods for pressurized piping and suction piping connected to petroleum UST systems are also specified in 40 CFR 280.41.

Existing and new hazardous substances UST systems are required to meet the release detection requirements found in Subsection 40 CFR 280.42 (b). That subsection contains performance requirements for:

- Secondary containment systems.
- Double-walled tanks.
- External liners and vaults.
- Secondary containment for underground piping (i.e., trench liners, jacketing of double-walled pipe).
- Other methods of release detection.

Performance standards for release detection methods applicable to tanks are found in 40 CFR 280.43. Detection efficiencies, monitoring frequency, filling and dispensing measurement methods, and other requirements are discussed for the following release detection methods:

- Inventory control
- Manual tank gauging
- Tank tightness testing
- Vapor monitoring
- Groundwater monitoring
- Interstitial monitoring
- Other methods

Performance standards for release detection methods applicable to piping are found in 40 CFR 280.44. Methods of release detection for which standards are given are automatic line leak detectors, line tightness testing, and applicable tank methods. The types of release detection records required for compliance with the general recordkeeping and reporting requirements discussed above are found in 40 CFR 280.45.

RELEASE REPORTING, INVESTIGATION AND CONFIRMATION

Any suspected release, spill, or overfill from a UST system must be reported to IDEM within 24 hours of its discovery. When an emergency condition exists, it must be reported immediately. See Chapter 11 for a thorough discussion of Spill Reporting requirements. The requirements of 40 CFR 280, Subpart E, and 329 IAC 9-4 are very similar with regard to reporting of suspected releases, investigation due to off-site impacts, and reporting and cleanup of spills and overfills. The release investigation and confirmation steps under the Federal rule are more involved than those in the Indiana rule.

If the UST system is suspected as the source of an off-site impact reported to IDEM, the Department can require the owner of the UST system to conduct a release investigation and confirmation. Release investigation and confirmation is also required in all cases of suspected releases of regulated substances which require reporting, unless corrective action is initiated immediately. Release investigation and confirmation may be performed either by system test or by the site check.

A system test is a tightness test of the tank and piping. If the system test confirms a leak, corrective action must begin immediately. If the system test does not confirm a leak, and the test was not performed because of environmental contamination, no further action is required. If the system test does not confirm a leak, but the test was conducted because of environmental contamination, the results of the system test must be confirmed by a site check.

A site check must measure for the presence of contamination where it is most likely to exist. The types of sampling and analysis performed must be determined based upon the substance stored, the cause for suspecting a release, the type of backfill, the depth to groundwater, and other appropriate factors. If the site check confirms a release, an investigation and the

development of a corrective action plan must begin immediately. If the site check fails to confirm a release, no further investigation is required.

CORRECTIVE ACTION

When a release is confirmed for a hazardous substance or petroleum UST system, corrective action must take place as outline in 40 CFR 280, Subpart F, Release Response and Corrective Action for UST Systems Containing Petroleum or Hazardous Substances or 329 IAC 9-5, Initial Response, Site Investigation, and Corrective Action. An emergency condition must be reported immediately. See [Attachment 6](#) for a flowchart on release reporting. Within 24 hours of confirming a release, the owner or operator must:

- Report the release to IDEM.
- Take immediate action to prevent any further release of the substance into the environment.
- Identify and mitigate any fire, explosion, or vapor hazards.

Initial abatement steps to be taken, under 329 IAC 9-5-3.2 and/or 40 CFR 280.62, are:

- Remove as much of the regulated substance from the UST system as is necessary to prevent further release to the environment.
- Visually inspect any aboveground releases or exposed belowground releases and prevent further migration of the released substance into soils and groundwater.
- Continue to monitor and mitigate fire, explosion, or vapor hazards.
- Appropriately treat or dispose of contaminated soils which have been exposed in the course of site check, release confirmation, or release abatement, or corrective action activities.
- Conduct a site check, if none has yet been conducted.
- Check for the presence of free product, and begin free product removal as soon as possible.

Guidelines for free product removal may be found in 40 CFR 280.64 or 329 IAC 9-5-4.2. Within 20 days after confirming a release, the owner or operator must submit a report to IDEM summarizing initial abatement actions taken at the site of the release.

An initial site characterization must be prepared and submitted to IDEM within 45 days of confirming the release. IDEM requires more information for the initial site characterization than the Federal program. In Indiana, the initial site characterization must include information on:

- The nature and expected quantity of the release.
- Surrounding populations.
- Water quality.
- Use and approximate locations of wells potentially affected by the release.
- Subsurface soil conditions.
- Locations of subsurface sewers.

- Climate conditions.
- Land use.
- Results of the site check.
- Results of the free product investigation.
- Known or expected extent of contamination.

If evidence exists that ground water wells have been affected by the release, if free product is found, if evidence indicates that contaminated soil is in contact with groundwater, or if IDEM requires it, the owner or operator must conduct further investigation for soil and ground water cleanup.

At any point after reviewing information submitted concerning a potential release, initial response, initial abatement, or initial site characterization, IDEM may require the owner or operator to prepare and submit a corrective action plan. IDEM will provide specific requirements at the time the plan is requested, but in general, the owner or operator will have to submit a plan that will protect human health and environment. The plan will be subject to approval by IDEM, although the owner or operator may opt to begin cleanup activities before the plan is approved. Any release that requires a corrective action plan will be subject to public participation requirements. Corrective action activities may place yet another regulatory burden on the owner or operator, who will have to comply with OSHA and IFPC requirements for corrective action activities.

CLOSURE

The IFPC permits out-of-service tanks to be temporarily closed for up to one year. ASTs and USTs temporarily taken out of service must be safeguarded, as described in 675 IAC 22-2.3 and IFPC Chapter 34. Temporarily closed USTs must be tightness tested prior to being returned to service. The 675 IAC 22-2.3 permits USTs to be removed or abandoned in place, with fewer requirements than 329 IAC 9-6. However, a UST system regulated under 329 IAC 9-6 will have to be closed according to the stricter requirements, so owners and operators will need to be careful not to comply with the less restrictive standard. Minimal guidelines for the removal of ASTs are given in the IFPC.

Closure requirements apply to temporary closures, permanent closures, and changes in service. When a UST system is temporarily closed, corrosion detection and release detection practices must continue. If the tank system is emptied, so that no more than 2.5 cm or 0.3% by weight of the total capacity of the system remains, release detection may be discontinued. If the system is to be closed for 3 months or more, vent lines must be left open and functioning, while all other lines, pumps, and equipment must be capped and secured. Tank systems may not be temporarily closed for more than 12 months, unless IDEM grants an extension to the owner or operator.

When a UST system undergoes a change in service, the owner or operator must notify IDEM of the change at least 30 days before beginning the change. A change in service occurs when the tank system will still be in use, but used to store an unregulated substance. The tank must be

emptied and cleaned, and a site assessment conducted, when a tank undergoes a change in service.

When a UST system undergoes permanent closure, the owner or operator must notify IDEM of the change at least 30 days before beginning closure activities. In addition, IDEM wishes to be notified by phone 14 days in advance of the intended closure date. To permanently close a tank, the tank system must be emptied and cleaned, and either removed from the ground or filled with an inert solid material.

Before conducting a change in service or permanent closure of a tank system, the owner or operator of the system must conduct a site assessment. The site assessment involves measuring for the presence of a release in the area where contamination is most likely to be found at the UST site. Measurement should be conducted in accordance with UST system closure guidelines found in the UST Branch Guidance Manual. If a vapor monitoring or ground water monitoring release detection system is in place at the time of closure, and does not indicate a release, no further site assessment is required.

UST systems closed before December 22, 1988, may be subject to current closure requirements retroactively, if IDEM finds reason to believe that released from the system pose a current or potential threat to human health or the environment.

Records documenting the closure site assessment must be mailed to IDEM within 30 days of completion of closure activities. Records pertaining to system closure must be retained for 3 years by the owners and operators who closed the system and by the current owners and operators of the UST system site. If records cannot be maintained at the closed site, they must be mailed to IDEM.

CONCLUSION

This chapter does not reproduce, discuss, or explain all of the requirements governing ASTs and USTs. Instead, an attempt has been made to give owners and operators a working knowledge of the major requirements and concepts of those rules, and an idea of where to look in the regulations for specifics relating to the type of tank system they operate. Many industry standards which carry the force of law, such as the American Petroleum Institute's Recommended Practice 1604, "Removal and Disposal of Used Underground Petroleum Storage Tanks," are not discussed or even specifically mentioned in this chapter. Owners and operators who find that they are subject to a requirement discussed in this chapter should consult the appropriate section of the rules for further information.

CHAPTER 9 - ATTACHMENT 1
40 CFR 280.12 Underground Storage Tank Definition

The following definition is listed in 40 CFR 280.12. Please note: as regulations are amended the e-CFR website is updated within a reasonable time period after publication in the Federal Register. For the most current version of the rule visit the following website. <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=44771c018c531db38fc8f333b4fe57cb&rgn=div8&view=text&node=40:26.0.1.1.9.1.39.3&idno=40>

Title 40: Protection of Environment

PART 280—TECHNICAL STANDARDS AND CORRECTIVE ACTION REQUIREMENTS FOR OWNERS AND OPERATORS OF UNDERGROUND STORAGE TANKS (UST)

Subpart A—Program Scope and Interim Prohibition

§ 280.12 Definitions.

Underground storage tank or *UST* means any one or combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is 10 percent or more beneath the surface of the ground. This term does not include any:

- (a) Farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
- (b) Tank used for storing heating oil for consumptive use on the premises where stored;
- (c) Septic tank;
- (d) Pipeline facility (including gathering lines) regulated under:
 - (1) The Natural Gas Pipeline Safety Act of 1968 (49 U.S.C. App. 1671, *et seq.*), or
 - (2) The Hazardous Liquid Pipeline Safety Act of 1979 (49 U.S.C. App. 2001, *et seq.*), or
 - (3) Which is an intrastate pipeline facility regulated under state laws comparable to the provisions of the law referred to in paragraph (d)(1) or (d)(2) of this definition;
- (e) Surface impoundment, pit, pond, or lagoon;
- (f) Storm-water or wastewater collection system;
- (g) Flow-through process tank;
- (h) Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; or
- (i) Storage tank situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

The term “underground storage tank” or “UST” does not include any pipes connected to any tank which is described in paragraphs (a) through (i) of this definition.

CHAPTER 9 ATTACHMENT 2
Application for Storage Facilities for Flammable and
Combustible Liquids and Gases

The following form is available on the Indiana Department of Homeland Security website. Please note: IDHS may periodically revise State Forms. The IDHS website should provide the most up to date forms available. For the most current versions of the forms visit the following websites.

Application form

http://www.in.gov/dhs/osbc/code/apps/Flammable_Liquids_ps.pdf



APPLICATION FOR STORAGE FACILITIES FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS AND GASES

State Form 8451 (R2 / 1-95)

Approved by State Board of Accounts, 1995

Indiana Department of Fire and Building Services
PLAN REVIEW DIVISION
Office of the State Building Commissioner
402. W. Washington St., Room E245
Indianapolis, Indiana 46204

SBC project number

OWNER'S CERTIFICATE

Name of firm or owner	
Street address	
City and state	ZIP code
I hereby certify that the design, construction, installation and location of the storage facility listed below will be in compliance with the rules of the Fire Prevention and Building Safety Commission prior to use of same.	
Authorized signature	Telephone number ()
Name (typed or printed)	Title
Servicing fire department and address	Department identification number
City	Township

INSTALLATION LOCATION	
Name of business	
Street address	
City	County
Closest intersecting street or road	
Is project within city limits? <input type="checkbox"/> Yes <input type="checkbox"/> No	

SUBMITTED BY	
Name of firm or individual	
Street address	
City and state	ZIP code
Name of contact individual	Telephone number ()
<input type="checkbox"/> Call submitter to pick up release <input type="checkbox"/> Mail release	
Installer's certification number	
Pump and tank information (check all that apply) <input type="checkbox"/> Split Service <input type="checkbox"/> Self Service <input type="checkbox"/> Full Service <input type="checkbox"/> Public <input type="checkbox"/> Private <input type="checkbox"/> Above Ground <input type="checkbox"/> Below Ground	

INSTALLATION INFORMATION													
Substance Type	TANK INFORMATION			Tank Construction (steel, fiberglass, etc.)	ABOVE GROUND TANKS * Type of Tank	DISPENSER INFORMATION							
	Number		Capacity			Listed or Certified by	Total (** M)	Electric or Manual	Pump Location At				
	New (** M)	Existing								New	Existing	Tank	Dispenser	Other
Gasoline													
Diesel													
Kerosene													
L.P. Gas													
Others (specify) include flash point °F													

* Type of tank, such as floating, fixed roof, pressurized or vented, vertical or horizontal
** M = 1000 gallons

Filing instruction on back

FILING REQUIREMENTS

Under the provisions of Indiana Code 22-15-3, plans, specifications or changes thereto, for all Class 1 structures to be built, added to, altered, moved into or within in the State of Indiana, including facilities for the storage and handling of flammable and combustible liquids and gases, must be submitted to the State Building Commissioner for statewide code compliance review before construction or installation begins. This Application must accompany the submission and must be completely and legibly filled out.

Under the provisions of the General Administrative Rules (675 IAC 12-6-3) a construction release is required for the installation or replacement of tanks and dispensing equipment for flammable and combustible liquids or gases EXCEPT:

- A. Liquid petroleum gas (LPG) storage facilities having a total capacity of not more than four thousand (4,000) gallons and no single tank having a capacity of more than two thousand (2,000) gallons measured as gallons of water.
- B. Storage tanks for Class I, II, III A or III B liquids having a capacity of six hundred sixty (660) gallons or less, and that are portable and are for temporary use only.

DOCUMENTS REQUIRED FOR FILING

1. Application for storage facilities for flammable and combustible liquids and gases, together with correct filing fees. Please see fee schedule.
2. One (1) complete set of plans and specifications. Additional sets required if return of more than one (1) set is desired for files or local use.
3. Site plan, showing:
 - A. Dimensioned location of all tanks to all property lines and buildings.
 - B. Dimensioned location of pumps, dispensers and all other equipment related to the installation to all property lines and buildings.
 - C. Location and size of fences with gates and other devices used to protect against tampering with tanks and valves.
4. Cross section of tank showing:
 - A. Depth below ground, type of covering over tank; such as earth, concrete or asphalt; including thickness of each material.
 - B. Supports, saddles, straps and other related material used to secure, anchor or support the tank.
5. Plans and calculations showing location, construction and capacity of dikes.
6. Piping plans showing location, type and size of piping and valves; location, size and termination of all vents.
7. Electrical plans and diagrams showing:
 - A. Location of emergency power cutoff for fuel dispensing devices.
 - B. Type and listing on electrical devices, and wiring used.
 - C. Location of hazardous areas.
8. If tank is located inside building, floor plans showing:
 - A. Location and rating of fire resistive walls, drains and curbs.
 - B. Means of egress from room and/or building.

PLAN REVIEW USE ONLY

FEE	AMOUNT	SBC project number		Scope of release
Filing	\$	Receipt number		CRO
Process	\$	Filing date (month, day, year)		Release type
Inspection	\$	Number of plans filed	Number of specifications filed	Local official identification
TOTAL	\$			

Release stamp	Comments

CHAPTER 9 - ATTACHMENT 3

**Table 2206.2.3 Minimum Separation Requirements for
Above-Ground Tanks and 675 IAC 22-2.3-208 Amendments**

The following Indiana Administrative Code is listed in 675 IAC 22-2.3-208. Please note: when the Indiana Administrative Code is revised the website is updated within a reasonable time period. For the most current version of the rule visit the following website. <http://www.in.gov/legislative/iac/T06750/A00220.PDF>

The International Fire Code books can be obtained through several sources. The International Code Council (ICC) can be contacted on-line at www.iccsafe.org and its toll-free number, 1-888-699-0541.

675 IAC 22-2.3-208 Table 2206.2.3; Minimum Separation Requirements for Aboveground Tanks

Class of Liquid and Tank Type	Individual Tank Capacity (gallons)	Minimum Distance in Feet				
		Nearest building on the same property	Nearest fuel dispenser	Lot line	Nearest side of any public way	Between tanks
Class I protected above ground tanks or tanks in vaults	Less than or equal to 6,000	5	25 ^a	15	5	3
	Greater than 6,000	15	25 ^a	25	15	3
Class II and III protected above ground tanks or tanks in vaults	Same as Class I	Same as Class I	Same as Class I	Same as Class I	Same as Class I	Same as Class I
Class III Liquids ASTs	Equal or less than 1,100	5	0 ^b	10	10	5
Other tanks	all	50	50	100	50	3

^a At fleet vehicle service stations, no minimum separation distance is required.

^b Class III Fuel Dispensers.

CHAPTER 9 - ATTACHMENT 4
Notification for Underground Storage Tanks

The notification form is accessible through a web link from the IDEM-OLQ Publications and Forms website at the following address:

<http://www.in.gov/idem/land/pubsforms/forms.html>

The form can also be downloaded directly from the website provided by the Indiana Commission on Public Record – Forms Management Division

<http://www.in.gov/icpr/webfile/formsdiv/45223.doc>

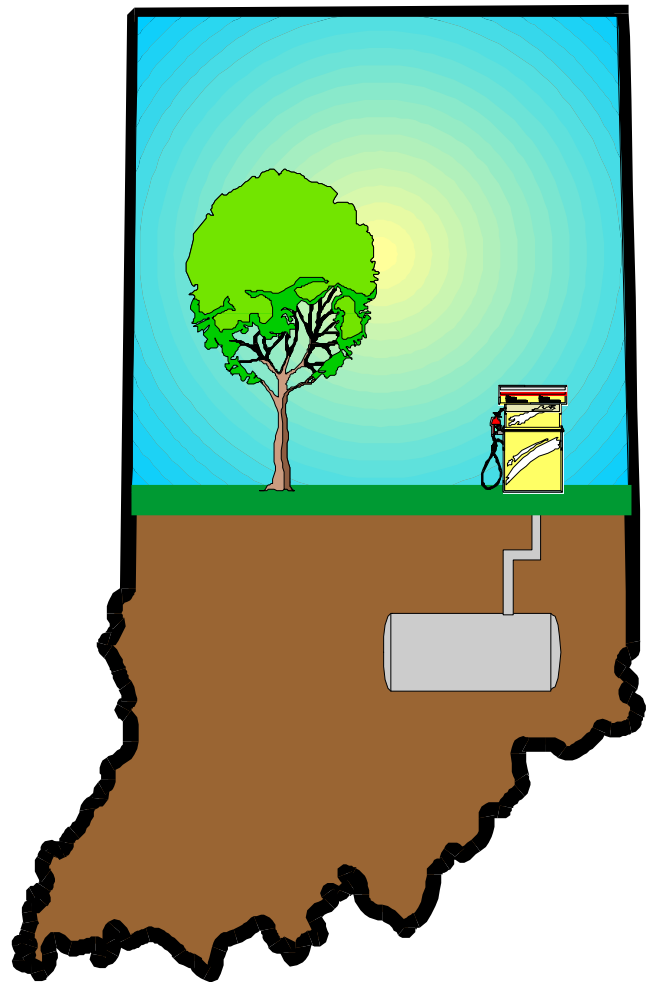
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

UNDERGROUND STORAGE TANKS SECTION

STATE FORM 45223 (R2/7-03)
NOTIFICATION FOR UNDERGROUND STORAGE TANKS
INSTRUCTIONS AND FORM

Indiana Department of Environmental
Management
Office of Land Quality, UST Program
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015

July 2003



***ALL NOTIFICATION FORMS SENT TO IDEM MUST HAVE
AN ORIGINAL SIGNATURE IN INK-NO PHOTOCOPIES WILL
BE ACCEPTED**

INSTRUCTIONS**FOR THE
NOTIFICATION FOR UNDERGROUND STORAGE TANKS**

This instruction page will provide you with general information on how to complete the Notification for Underground Storage Tanks form. Each section is referenced with a letter corresponding to the letter of the instructions in the left Column of this page.

Headers

If you know the Facility, Owner, Federal or EPA Identification numbers, please write these in the spaces provided in The header of the first page. At the top of each following page, indicate the Facility Name and Facility Identification Number to ensure that separated pages will be properly filed with their respective facility.

A. General Information

Type of Notification - Indicate the purpose of this notification by filling in the circle next to the desired type.

B. Ownership of Tanks

Owner of Tanks - All Notifications must contain ownership information. Indicate the name, mailing address, city, State, zip code, and telephone number of the owner of the tanks at the facility.

C. Location of Tanks

Tank/Facility Location - Must contain a facility name. If the facility location is different than the mailing address, Indicate this location in the space provided.

Type of Owner - Check the type of owner that applies to the facility and give the effective date of ownership.

Type of Operation - Check the type of operation that applies to the facility and give the GIS coordinates of the Facility. The GIS coordinates may be obtained from the Indiana DNR, your county surveyor's office or the U.S. Geological Survey. These data are optional.

D. Certification and Contacts (All signatures must be in ink)

Consultant/Contractor compliance certification - to be completed by the consultant/contractor who performed the Installation/closure or upgrade being reported on this notification. This section DOES NOT need to be completed For a request for closure or change of ownership notification.

Contact at Tank Location - A contact's name, title, and telephone number at the tank location is indicated here.

Owner Certification - MUST be completed by the owner or authorized representative (letter signed by owner authorizing Signatory authority must accompany each notification signed by the authorized representative).

Number of Tanks at this Location - Total number of tanks currently in use or temporarily out of use (or have undergone a change-in-service). Do not list those tanks that are permanently out of use.

Number of pages attached to this notification - total number of pages attached (i.e., pages 2 & 3 may need to be Copied when there are more than six tanks for which there is information provided in this notification).

E. General

Each column of the Tank Information pages is dedicated to ONE TANK ONLY. Assign a number to each tank by Using the appropriate column, beginning with one (1) and proceeding as needed for the number of tanks at the Facility. Attach additional sheets as needed. Owner-specified Tank Number blanks are provided to aid you in Coordinating this Notification with your own tank numbering system. Indicate the tank installation dates and capacities in the provided spaces.

F. Tank Status

Select ONLY ONE of the three boxes (1,2 or 3) in this section for each tank. Indicate the appropriate date for the Indicated tank status. If requesting closure, indicate the type of closure being requested in box (4) (removal, in-place, or change-in-service). If requesting Change-in-Service, mark the type of change in box (5).

G. Contents

Select ONLY ONE of the three boxes (1, 2, or 3) in this section. If the tank is currently empty, indicate the last Substance to be stored in that tank. For a tank containing Hazardous Substances, indicate the common name of the Substance and the correct identification number as appropriate. If a tank contains a petroleum and a hazardous Substance, indicate both substances separately. If a tank contains a mixture of hazardous substances fill in the circle.

H. & I. Construction/protection and Piping

For all tank systems, fill in all circles that apply to that tank system.

J.K.&L Release Detection, Cathodic Protection and spill/Overflow Control

Fill in all circles that apply in each of these sections for each tank. If a tank or tanks have specific leak detection/ Protection information that is not contained on this form, indicate the tank number(s) and the method(s) in the 'Another Method' sections.

(CONTINUED ON REVERSE)

INSTRUCTIONS
FOR THE
NOTIFICATION FOR UNDERGROUND STORAGE TANKS

M. Contractor Information

Fill in all circles that apply to the contractor who has done the current tank work for which the notification form is being Submitted (installation, closure, or upgrade). If the form is being submitted for a reason other than these tank activities, Tank contractor compliance information does not have to be provided and this part of this section may be left uncompleted.

N. Certification of Financial Responsibility

Indicate the method of Financial Responsibility that is used to meet the deductible requirement for Excess Liability Fund eligibility. Fill in the circle(s) that apply for each method(s) being used to provide this coverage.

O. Closure Request

Proposed Contractor - Submit the tank contractor information in the spaces provided. The contractor certification Number must be provided to insure that the closure will be performed by a tank contractor certified by the Office of The State Fire Marshal.
LUST Incident Information - If the tank(s) to be permanently closed are the source of a release or contamination, a Leaking Underground Storage Tank incident number must be obtained (call the IDEM LUST Section @ (317) 232-8900) And submitted in the space provided.

UST System Closure Report

Within 30 days of the closure of any UST System, the owner is required to submit an UST System Closure Report to the UST Section of the Indiana Department of Environmental Management. This UST System Closure Report must conform to UST May 2002 Section Closure Requirements.

Closure reports are also required for the closure of any piping related to an UST System. By definition, piping is part of an UST System and an assessment of native soils under the piping must be made when it is removed, replaced, or closed in place. While this office does require prior approval when replacing piping, an assessment is still required. An item by item description of information required for closure reports can be found in the May 2002 Closure Requirements.

Once the UST System Closure Report is received by the UST Section of the Indiana Department of Environmental Management, it is to be reviewed within 6 months. Once the report is reviewed, a checklist will be generated and sent to the owner of the closed UST(s). If none of the boxes on the checklist are marked 'INADEQUATE', the UST closure is completed and no further work is required.

COMPLETION OF UST CLOSURE REQUIREMENTS DOES NOT INCLUDE ANY POSSIBLE WORK REQUIRED FOR THE CLEAN UP OF CONTAMINATION RELATED TO THIS CLOSURE.

NOTIFICATION FOR UNDERGROUND STORAGE TANKS

RETURN COMPLETED FORMS



TO : Indiana Department of Environmental Management
 Office of Land Quality, UST Section
 100 North Senate Avenue
 P.O. Box 6015
 Indianapolis, Indiana 46206-6015
 UST: (317) 308-3024 LUST: (317) 232-8900

Facility ID Number							
Federal ID Number							
Owner ID Number							

A

Notification is required by Federal and State laws for all storage tanks that are operational or have been used to store regulated substances since January 1, 1974. The information requested is required by Indiana Code 329 IAC 9, as amended. Specific detailed instructions for the completion of this form may be obtained by contacting the UST Section at the above address.

GENERAL INFO

TYPE OF NOTIFICATION

THIS NOTIFICATION FORM PROVIDES INFORMATION FOR (CHECK ALL THAT APPLY):

<input type="checkbox"/> A NEW FACILITY	<input type="checkbox"/> AN ADDRESS CHANGE	<input type="checkbox"/> A TEMPORARY CLOSURE
<input type="checkbox"/> A NEW OWNER	<input type="checkbox"/> A CHANGE OF OWNERSHIP	<input type="checkbox"/> A REQUEST FOR CLOSURE
<input type="checkbox"/> A NEW TANK	<input type="checkbox"/> OTHER	<input type="checkbox"/> A PERMANENT CLOSURE
<input type="checkbox"/> A SYSTEM UPGRADE		WITH CLOSURE REPORT

B

OWNER OF TANKS

OPERATOR OF FACILITY

OWNER OF TANKS

OWNER NAME	OPERATOR NAME (IF SAME AS OWNER, MARK BOX HERE [])
MAILING ADDRESS	MAILING ADDRESS
CITY STATE	CITY STATE
ZIP CODE - () -	ZIP CODE - () -
TELEPHONE () -	TELEPHONE () -

C

TANK/FACILITY LOCATION

TYPE OF FACILITY/OWNER

FACILITY NAME (IF SAME AS OWNER, MARK BOX HERE [])	TYPE OF OWNER TYPE OF OPERATION <table border="1"> <tr> <td><input type="checkbox"/> PRIVATE/BUSINESS</td> <td><input type="checkbox"/> MOTOR VEHICLE FUEL</td> </tr> <tr> <td><input type="checkbox"/> STATE GOVERNMENT</td> <td><input type="checkbox"/> DISPENSING STATION</td> </tr> <tr> <td><input type="checkbox"/> LOCAL GOVERNMENT</td> <td><input type="checkbox"/> COMMERCIAL</td> </tr> <tr> <td><input type="checkbox"/> FEDERAL GOVERNMENT</td> <td><input type="checkbox"/> RESIDENTIAL</td> </tr> <tr> <td><input type="checkbox"/> GSA FACILITY (ID#)</td> <td><input type="checkbox"/> INDUSTRIAL</td> </tr> <tr> <td><input type="checkbox"/> OTHER</td> <td><input type="checkbox"/> AGRICULTURE</td> </tr> <tr> <td>EFFECTIVE DATE OF OWNERSHIP / /</td> <td><input type="checkbox"/> OTHER UTM COORDINATES</td> </tr> </table>	<input type="checkbox"/> PRIVATE/BUSINESS	<input type="checkbox"/> MOTOR VEHICLE FUEL	<input type="checkbox"/> STATE GOVERNMENT	<input type="checkbox"/> DISPENSING STATION	<input type="checkbox"/> LOCAL GOVERNMENT	<input type="checkbox"/> COMMERCIAL	<input type="checkbox"/> FEDERAL GOVERNMENT	<input type="checkbox"/> RESIDENTIAL	<input type="checkbox"/> GSA FACILITY (ID#)	<input type="checkbox"/> INDUSTRIAL	<input type="checkbox"/> OTHER	<input type="checkbox"/> AGRICULTURE	EFFECTIVE DATE OF OWNERSHIP / /	<input type="checkbox"/> OTHER UTM COORDINATES
<input type="checkbox"/> PRIVATE/BUSINESS		<input type="checkbox"/> MOTOR VEHICLE FUEL													
<input type="checkbox"/> STATE GOVERNMENT		<input type="checkbox"/> DISPENSING STATION													
<input type="checkbox"/> LOCAL GOVERNMENT		<input type="checkbox"/> COMMERCIAL													
<input type="checkbox"/> FEDERAL GOVERNMENT		<input type="checkbox"/> RESIDENTIAL													
<input type="checkbox"/> GSA FACILITY (ID#)		<input type="checkbox"/> INDUSTRIAL													
<input type="checkbox"/> OTHER	<input type="checkbox"/> AGRICULTURE														
EFFECTIVE DATE OF OWNERSHIP / /	<input type="checkbox"/> OTHER UTM COORDINATES														
MAILING ADDRESS (IF SAME AS OWNER, MARK BOX HERE [])															
LOCATION OF TANKS															
CITY															
ZIP CODE - () -															
COUNTY															

D

CONSULTANT/CONTRACTOR COMPLIANCE CERTIFICATION

CERTIFICATION

OATH: I certify that the information concerning installation, upgrade, or closure provided in this notification is true and correct to the best of my knowledge.

NAME OF CONTRACTOR/CONSULTANT	NAME OF COMPANY
SIGNATURE OF CONTRACTOR (IN INK - NO PHOTOCOPIES WILL BE ACCEPTED)	CERTIFICATION NUMBER / /

CONTACT AT TANK LOCATION

NAME OF CONTACT PERSON AT TANK LOCATION	NUMBER OF TANKS AT THIS LOCATION
JOB TITLE	NUMBER OF PAGES ATTACHED TO THIS NOTIFICATION
TELEPHONE NUMBER () --	

OWNER CERTIFICATION

STATE USE ONLY

OATH: I certify that under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

NAME AND TITLE OF OWNER OR AUTHORIZED REPRESENTATIVE

SIGNATURE OF OWNER (IN INK - NO PHOTOCOPIES WILL BE ACCEPTED)

DATE
/ /

DESCRIPTION OF UNDERGROUND STORAGE TANK SYSTEM

F		COMPLETE A COLUMN FOR EACH TANK. ATTACH ADDITIONAL SHEETS WHEN NUMBER OF TANKS EXCEEDS SIX.							
GENERAL	SEQUENTIAL TANK NUMBER								
	OWNER-SPECIFIED TANK NUMBER								
	DATE INSTALLED		__/__/__	__/__/__	__/__/__	__/__/__	__/__/__		
	CAPACITY (GALLONS)								
TANK STATUS	F	COMPLETE ONLY ONE OF 1, 2 OR 3. 1. CURRENTLY IN USE DATE BROUGHT INTO USE 2. TEMPORARILY OUT OF USE DATE LAST USED 3. PERMANENTLY OUT OF USE DATE REMOVED FROM GROUND DATE FILLED IN-PLACE 1, 2 OR 3 MUST BE COMPLETED IF SECTIONS 4 OR 5 ARE SELECTED. <u>SECTION 4 B REQUIRES PRE-NOTIFICATION</u> 4. REQUESTING CLOSURE A. TO BE REMOVED B. TO BE FILLED IN PLACE 5. CHANGE-IN-SERVICE REGULATED TO UNREGULATED UNREGULATED TO REGULATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			__/__/__	__/__/__	__/__/__	__/__/__	__/__/__	__/__/__	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			__/__/__	__/__/__	__/__/__	__/__/__	__/__/__	__/__/__	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			__/__/__	__/__/__	__/__/__	__/__/__	__/__/__		
			__/__/__	__/__/__	__/__/__	__/__/__	__/__/__		
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
CONTENTS	G	SUBSTANCE CURRENTLY OR LAST STORED (COMPLETE ONLY ONE OF 1, 2 OR 3) 1. PETROLEUM DIESEL KEROSENE GASOLINE USED OIL OTHER (specify) _____ 2. HAZARDOUS SUBSTANCE CERCLA SUBSTANCE or Chemical Abstract Service Number _____ MIXTURE OF SUBSTANCES <input type="checkbox"/> 3. UNKNOWN <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CONSTRUCTION/PROTECTION	H	TANK CONSTRUCTION	STEEL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			CLAD (ACT 100)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			FIBERGLASS/PLASTIC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			INTERSTITIAL-DOUBLE WALLED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			OTHER (specify) _____						
		TANK CORROSION PROTECTION	INTERIOR LINING	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			DATE	__/__/__	__/__/__	__/__/__	__/__/__	__/__/__	__/__/__
			FIBERGLASS/PLASTIC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			IMPRESSED CURRENT (RECTIFIERS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			LAST ANODE TEST	__/__/__	__/__/__	__/__/__	__/__/__	__/__/__	__/__/__
		SACRIFICIAL ANODES ON TANK (GALVANIC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		LAST ANODE TEST	__/__/__	__/__/__	__/__/__	__/__/__	__/__/__	__/__/__	
		OTHER (specify) _____							
PIPING	I	PIPING CORROSION PROTECTION	FIBERGLASS REINFORCED PLASTIC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			IMPRESSED CURRENT (RECTIFIER)	__/__/__	__/__/__	__/__/__	__/__/__	__/__/__	__/__/__
			LAST ANODE TEST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			SACRIFICIAL ANODES (GALVANIC)	__/__/__	__/__/__	__/__/__	__/__/__	__/__/__	__/__/__
			LAST ANODE TEST	__/__/__	__/__/__	__/__/__	__/__/__	__/__/__	__/__/__
		OTHER (specify) _____							

FACILITY NAME _____		FACILITY ID. _____		PAGE _____ OF _____				
DESCRIPTION OF UNDERGROUND STORAGE TANK SYSTEMS (CONTINUED)								
COMPLETE A COLUMN FOR EACH TANK		ATTACH ADDITIONAL SHEETS WHEN THE NUMBER OF TANKS EXCEEDS SIX.						
		Sequential Tank Number						
J RELEASE DETECTION	Tank (Only for use with tanks 2000 gallons or smaller) Manual Tank Gauging (Can only be used for 10 yrs) Tank Tightness Testing With Daily Inventory Controls (ATG must perform monthly leak test) Automatic Tank Gauging (Site Assessment required for use) Vapor Monitoring (Site Assessment required for use) Ground Water Monitoring Interstitial Monitoring Within a Secondary Barrier Interstitial Monitoring Within Secondary Containment Statistical Inventory Reconciliation (SIR) Another Method (Please specify below)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
K	PIPING	Suction (Check valve at pump) EUROPEAN SUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		(Check valve at tank) AMERICAN SUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Pressurized (Required for pressurized piping only) Automatic Line Leak Detectors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		MUST CHECK ONE	Flow Restrictor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Flow Shut Off Alarm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		MUST CHECK ONE	SIR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ATG	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Interstitial - Double Walled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		(Required if tank leak detection does not cover piping) Line Tightness Testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
L SPILL			(Required for most tanks) Catchment Basins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			(Valve attached to fill pipe) Automatic Shutoff Devices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			(MUST be audible to fuel delivery personnel) Overfill Alarms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			(Not recommended for use with suction piping) Ball Float Valves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			Another Method (Please specify below)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
M CONTRACTOR	Indicate compliance specific to this installation upgrade, or closure	Installer is certified by the tank and piping manufacturer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Contractor is certified by the Office of the State Fire Marshal.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Work inspected/certified by a registered professional engineer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Work inspected by the Office of the State Fire Marshal.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		All work has been completed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		Another method of compliance was used (specify below).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

CERTIFICATION OF FINANCIAL RESPONSIBILITY							
N FINANCIAL	I have financial responsibility in accordance with Subtitle I Subpart H (Specify below).						
	<input type="checkbox"/> Self-Insurance	<input type="checkbox"/> Letter of Credit	<input type="checkbox"/> Local Government - Fund				
	<input type="checkbox"/> Trust Agreement	<input type="checkbox"/> Local Government - Bond Rating Test	<input type="checkbox"/> Local Government - Bond Rating Test				
	<input type="checkbox"/> Guarantee	<input type="checkbox"/> Local Government - Financial Test	<input type="checkbox"/> Insurance & Risk Retention Group Coverage				
<input type="checkbox"/> Surety Bond	<input type="checkbox"/> Local Government - Guarantee						

30 - DAY REQUEST FOR TANK CLOSURE							
O CLOSURE REQUEST	To request a tank closure, mark the Request for Closure oval in Type of Notification in Section A, complete sections B, C, D, E, and mark D. REQUESTING CLOSURE in section F. Complete the remaining sections (G-N) and fill in the requested information below.						
	PROPOSED CONTRACTOR				LUST INCIDENT INFORMATION		
	CONTRACTOR NAME				LUST INCIDENT NUMBER, IF APPLICABLE		
	MAILING ADDRESS				DATE INCIDENT REPORTED		
	CITY		STATE		*NOTE: Any tank closures must be performed by persons certified by the Indiana State Fire Marshal. City/County Fire Departments, the Indiana State Fire Marshal, and IDEM's UST Section must be notified 14 days prior to closure. Please report to the Leaking Underground Storage Tank Section at (317) 232-8900 if signs of soil or groundwater contamination are observed.		
	ZIP		TELEPHONE				
CONTACT PERSON		CERTIFICATION NUMBER					

CHAPTER 9 ATTACHMENT 5
Dollars and Sense
Financial Responsibility Requirements for Underground Storage Tanks

This publication is also available on the EPA website at the following address.

<http://www.epa.gov/cgi-bin/claritgw?op-Display&document=clserv:OSWER:0173;&rank=4&template=epa>

To search for additional publications visit the National Service Center for Environmental Publications website.

<http://www.epa.gov/clariton/index.htm>

United States
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Solid Waste And
Emergency Response
5403W

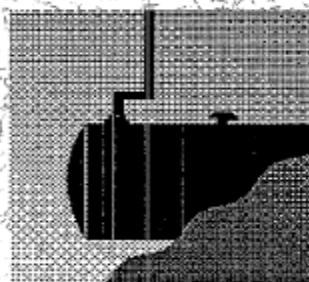
EPA 510-K-95-004
July 1995



Dollars And Sense

Financial Responsibility Requirements For Underground Storage Tanks

Nonmarketers ♦ Compliance Groups ♦ Liability ♦ Marketers ♦ Financial Tests
 ♦ Annual Aggregate ♦ Per Occurrence ♦ Nonmarketers ♦ Compliance Groups
 ♦ Liability ♦ Marketers ♦ Financial Tests ♦ Annual Aggregate ♦ Per Occurrence
 ♦ Nonmarketers ♦ Compliance Groups ♦ Liability ♦ Marketers ♦ Financial Tests
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 Nonmarketers ♦ Compliance Groups ♦ Liability ♦ Marketers ♦ Financial Tests



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Why are there financial responsibility requirements?

When Congress amended Subtitle I of the Resource Conservation and Recovery Act in 1986, it directed the U.S. Environmental Protection Agency (EPA) to develop financial responsibility regulations for owners and operators of underground storage tanks (USTs) storing petroleum.

EPA estimates that there are about 1.2 million federally regulated petroleum USTs buried at over 500,000 sites nationwide. These sites are owned by marketers who sell gasoline to the public (such as service stations and convenience stores) and nonmarketers who use USTs solely for their own needs (such as fleet service operators and local governments).

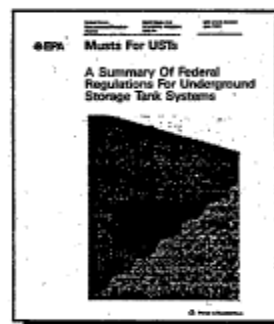
Many of these USTs have released or will release petroleum into the environment through spills, overfills, or failures in the tank and piping system. EPA estimates that the total number of confirmed releases could reach 400,000 in the next several years. After this peak, EPA expects fewer releases as owners of USTs comply with federal and state requirements for new USTs and upgrade older USTs with spill, overfill, and corrosion protection.

Cleaning up these leaks can be costly. Congress wanted owners and operators of USTs to demonstrate that they have the financial resources--through insurance or other means explained below--to pay for the costs of corrective action and third-party liability that can result from leaking USTs.

The financial responsibility requirements are designed to make sure that someone can pay the costs of cleaning up leaks and compensating third-parties for bodily injury and property damage caused by leaking USTs.

If you need an overview of all the federal requirements for USTs, please refer to EPA's free booklet, **Musts For USTs**. Ordering information for **Musts For USTs** and several other publications and videos about USTs appears on pages 13-14.

This booklet briefly describes federal financial responsibility requirements for underground storage tanks (USTs) storing petroleum.



The financial responsibility requirements are found in the Code of Federal Regulations, 40 CFR Part 280.

Why should your USTs meet these requirements?

It is particularly important that someone be prepared to pay cleanup costs so that cleanup activities can begin as quickly as possible. Without fast action at contaminated sites, contamination can spread and increase significantly the chance of damaging the environment and human health.

Complying with the financial responsibility requirements also protects *you*, as an owner or operator of USTs. If your UST leaks, you may be faced with high cleanup costs or with lawsuits brought by third parties. You will be able to pay these costs if you have met the financial responsibility requirements.

Also, if you cannot demonstrate financial responsibility by the compliance deadline that applies to your UST facility, you can be cited for violations and fined.

Who needs to demonstrate financial responsibility?

Either the owner or the operator of the UST must demonstrate financial responsibility, if the owner and operator are different individuals or firms. It is the responsibility of the owner and operator to decide which one will demonstrate financial responsibility.

Federal and state governments and their agencies that own USTs are not required to demonstrate financial responsibility. Local governments, however, must comply with the financial responsibility requirements.

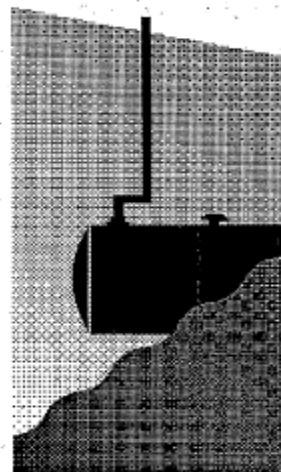
What kinds of USTs need to meet these requirements?

An underground storage tank system (UST) is a tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground. The federal UST regulations for financial responsibility apply only to underground tanks and piping storing petroleum.

The financial responsibility requirements apply to all USTs holding petroleum, with the following exceptions. These tanks are **NOT** covered by the financial responsibility requirements:

- Farm and residential tanks of 1,100 gallons or less capacity holding motor fuel used for noncommercial purposes;
- Tanks storing heating oil used on the premises where it is stored;
- Tanks on or above the floor of underground areas, such as basements or tunnels;
- Septic tanks and systems for collecting storm water and wastewater;
- Flow-through process tanks;
- Tanks of 110 gallons or less capacity, and tanks holding a minimal concentration of petroleum; and
- Emergency, spill and overfill tanks.

Other storage sites not covered by the federal financial responsibility requirements (such as surface impoundments and field-constructed tanks) are identified in the **Code of Federal Regulations, 40 CFR Part 280**.



How much financial responsibility coverage is required? When do you need it?

Both the amount of financial responsibility coverage you need and the date by which you need it are determined by the type of business you operate, the amount of throughput of your tank, and the number of tanks you have. On the next page you will find a table that displays five groups of UST owners and operators, compliance deadlines for each group, and required coverage amounts.

Basically, your financial responsibility amount falls into two types: **per occurrence** and **annual aggregate**.

- **Per occurrence.** "Per occurrence" means the amount of money that must be available to pay the costs from one occurrence of a leaking UST. If your tank is used in petroleum production, refining or marketing (such as service stations and truck stops), you must be able to demonstrate that you have \$1 million of per occurrence coverage. The per occurrence amount may be less if your tanks are located at a facility **NOT** engaged in petroleum production, refining or marketing. In this case, if your facility has a monthly throughput of 10,000 gallons or less, you need \$500,000 of per occurrence coverage.
- **Annual aggregate.** You must also have coverage for an annual aggregate amount. The annual aggregate amount is the total amount of financial responsibility that you must have to cover all leaks that might occur in one year. The amount of aggregate coverage that you need depends on the number of tanks that you own or operate: \$1 million annual aggregate for 100 or fewer tanks; \$2 million annual aggregate for more than 100 tanks.

The table on page 5 displays compliance deadlines and coverage amounts for all categories of UST owners and operators.

Financial Responsibility Requirements

Group Of UST Owners And Operators	Compliance Deadline	Per Occurrence Coverage	Aggregate Coverage
GROUP 1: Petroleum marketers with 1,000 or more tanks OR Nonmarketers with net worth of \$20 million or more (for nonmarketers, the "per occurrence" amount is the same as Group 4-B below)	January 1989	\$1 million	\$1 million if you have 100 or fewer tanks OR \$2 million if you have more than 100 tanks
GROUP 2: Petroleum marketers with 100-999 tanks	October 1989		
GROUP 3: Petroleum marketers with 13-99 tanks	April 1991		
GROUP 4-A: Petroleum marketers with 1-12 tanks	December 1993		
GROUP 4-B: Nonmarketers with net worth of less than \$20 million	December 1993	\$500,000 if throughput is 10,000 gallons monthly or less	
GROUP 4-C: Local governments (including Indian tribes not part of Group 5)	February 1994	OR \$1 million if throughput is more than 10,000 gallons monthly	
GROUP 5: Indian tribes owning USTs on Indian lands (USTs must be in compliance with UST technical requirements)	December 1998		

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5

How can you demonstrate financial responsibility?

There are several options for demonstrating financial responsibility (each option is described fully in the **Code of Federal Regulations, 40 CFR Part 280**):

You may also use a combination of methods to demonstrate financial responsibility. The methods you choose must cover all the costs for which you are responsible (both corrective action and third-party liability) and add up to the amount of coverage you are required to demonstrate.

- **Use state financial assurance funds.** Your state may pay for some cleanup and third-party liability costs (see page 7).
- **Obtain insurance coverage.** Insurance may be available from a private insurer or a risk retention group (see page 7).
- **Obtain a guarantee.** You may secure a guarantee for the coverage amount from another firm with whom you have a substantial business relationship. The provider of the guarantee has to pass one of the financial tests described on page 9.
- **Obtain a surety bond.** A surety bond is a guarantee by a surety company that it will meet your financial responsibility obligations.
- **Obtain a letter of credit.** A letter of credit is a contract involving you, an issuer (usually a bank), and a third party (such as the implementing agency) that obligates the issuer to help you demonstrate your financial responsibility.
- **Pass a financial test.** If your firm has a tangible net worth of at least \$10 million, you can prove your financial responsibility by passing one of the two financial tests described on page 9.
- **Set up a trust fund.** You may set up a fully-funded trust fund administered by a third party to demonstrate financial responsibility.
- **Use other state methods.** You may also use any additional methods of coverage approved by your state.

Local governments have four additional compliance methods tailored to their special characteristics: a bond rating test, a financial test, a guarantee, and a dedicated fund (all fully described in 40 CFR Part 280).

What about state financial assurance funds?

Most states have established programs that can help pay for cleanup and third-party liability costs resulting from leaking petroleum USTs. Owners and operators of USTs may use these state financial assurance funds to demonstrate financial responsibility.

Many state funds, however, pay only part of the cleanup costs or require that you pay a deductible amount. Some state funds do not pay for third-party liability costs. State assurance funds often have eligibility requirements, such as proof that the UST facility is in compliance with requirements for leak detection and recordkeeping.

You should contact your state agency to determine if the state has a fund that you may use to demonstrate financial responsibility. Find out what the state will pay for and what additional amount of financial responsibility, if any, you must obtain. See the list of state UST/LUST contacts starting on page 15. (LUST means "leaking underground storage tanks.")

If you don't know how to reach your state agency, see the list of state UST/LUST contacts starting on page 15.

What about insurance coverage?

To make sure your insurance policy meets the financial responsibility requirements, have your insurer fill out one of the two following forms. If your UST insurance coverage is an expansion of a policy you already have, your insurer should give you an "Endorsement" document that completes and reproduces the model form shown on page 10. If you get a new policy, your insurer should give you a "Certificate of Insurance" document that completes and reproduces the model form shown on page 11. Keep the completed form in your records, as explained on page 8.

You should be aware that insurers may require you to meet certain conditions for coverage. For example, your insurer may require you to test your tank for tightness or make improvements in your tank system, such as adding corrosion protection.

You may also be able to get insurance coverage through a risk retention group. A risk retention group is an insurance company formed by businesses or individuals with similar risks to provide insurance coverage for those risks.

If you belong to a trade association, it may be able to provide you with information about insurers and risk retention groups that cover USTs.

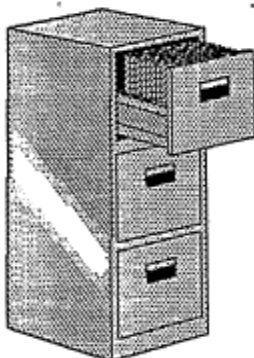
What happens if your coverage is cancelled?

Your financial responsibility method must specify that the provider may cancel your coverage only after sending you advance written notice. Insurance, risk retention group, and state fund coverage can be cancelled only 60 days after you receive the cancellation notice. Guarantees, surety bonds, and letters of credit can be cancelled only 120 days after you receive the cancellation notice. You must find replacement coverage within 60 days after you receive the notice of cancellation. If you cannot get replacement coverage, you must notify your implementing agency.

What records must you keep or report to others?

You must keep at your UST site or your place of business the following records of financial responsibility coverage:

- A current "Certification of Financial Responsibility" (see page 12 for a model of this form that you must complete and reproduce); and
- Any additional documentation that shows your financial responsibility method is valid and provides details on the method's coverage, such as signed copies of official letters, policies, and state fund agreements.



Keep these records until your UST site is properly closed.

Keeping clear records makes good business sense. If asked by UST inspectors or regulatory officials to demonstrate your financial responsibility, you can use these records to demonstrate quickly your compliance with the financial responsibility requirements.

Many states require you to file copies of your financial responsibility records with the state agency, so check with your state to see what you need to do. You do not need to report financial responsibility records to the federal EPA unless you have been requested to do so.

Two Financial Tests

Test 1

- Your firm must have a tangible net worth of at least \$10 million; and
- Your firm must have a tangible net worth of at least 10 times the amount of aggregate coverage that you are required to demonstrate plus any other liability coverage for which your firm is using the test to demonstrate financial responsibility to EPA; and
- Your firm must file the firm's annual financial statements with the Securities and Exchange Commission (SEC), or annually report the firm's tangible net worth to Dun and Bradstreet and receive a rating of 4A or 5A. Utilities may file financial statements with the Energy Information Administration, or the Rural Electrification Administration instead of the SEC; and
- Your firm must have audited financial statements that do not include an adverse auditor's opinion or disclaimer of opinion.

Test 2

- Your firm must have a tangible net worth of at least \$10 million; and
- Your firm must have a tangible net worth of at least 6 times the amount of aggregate coverage that you are required to demonstrate; and
- Have U.S. assets that are at least 90 percent of total assets or at least 6 times the required aggregate amount; and
- Have net working capital at least 6 times the required aggregate amount, or a bond rating AAA, AA, A, or BBB from Standard and Poor's, or Aaa, Aa, A, or Baa from Moody's; and
- Your firm must have audited financial statements that do not include an adverse auditor's opinion or disclaimer of opinion.

Model Of "Endorsement"

Name: [name of each covered location]
 Address: [address of each covered location]
 Policy Number:
 Period of Coverage [current policy period]:
 Name of [Insurer or Risk Retention Group]:
 Address of [Insurer or Risk Retention Group]:
 Name of Insured:
 Address of Insured:

1. This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering the following underground storage tank(s):

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 CFR 280.22, or the corresponding state requirement, and the name and address of the facility.]

for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "nonsudden accidental releases" or "accidental release"; in accordance with and subject to the limits of liability, exclusions, conditions, and other terms of the policy; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tank(s) identified above.

The limits of liability are [insert the dollar amount of the "per occurrence" and "annual aggregate" limits of the Insurer's or Group's liability; if the amount of coverage is different for different types of coverage or for different underground storage tanks or locations, indicate the amount of coverage for each type of coverage and/or for each underground storage tank or location], exclusive of legal defense costs, which are subject to a separate limit under the policy. This coverage is provided under [policy number]. The effective date of said policy is [date].

2. The insurance afforded with respect to such occurrences is subject to all of the terms and conditions of the policy; provided, however, that any provisions inconsistent with subsections (a) through (e) of this Paragraph 2 are hereby amended to conform with subsection (a) through (e):

a. Bankruptcy or insolvency of the insured shall not relieve the ["Insurer" or "Group"] of its obligations under the policy to which this endorsement is attached.

b. The ["Insurer" or "Group"] is liable for the payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third party, with a right of reimbursement by the insured for any such payment made by the ["Insurer" or "Group"]. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in 40 CFR 280.95-280.102.

c. Whenever requested by [a Director of an Implementing Agency], the ["Insurer" or "Group"] agrees to furnish to [the Director] a signed duplicate original of the policy and all endorsements.

d. Cancellation or any other termination of the insurance by the ["Insurer" or "Group"], except for non-payment of premium or misrepresentation by the insured, will be effective only upon written notice and only after the expiration of 60 days after a copy of such written notice is received by the insured. Cancellation for non-payment of premium or misrepresentation by the insured will be effective only upon written notice and only after expiration of a minimum of 10 days after a copy of such written notice is received by the insured.

[Insert for claims-made policies:

e. The insurance covers claims otherwise covered by the policy that are reported to the ["Insurer" or "Group"] within six months of the effective date of the cancellation or non-renewal of the policy except where the new or renewed policy has the same retroactive date or a retroactive date earlier than that of the prior policy, and which arise out of any covered occurrence that commenced after the policy retroactive date, if applicable, and prior to such policy renewal or termination date. Claims reported during such extended reporting period are subject to the terms, conditions, limits, including limits of liability, and exclusions of the policy.]

I hereby certify that the wording of this instrument is identical to the wording in 40 CFR 280.97(b)(1) and that the ["Insurer" or "Group"] is ["licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in one or more states".]

[Signature of authorized representative of Insurer or Risk Retention Group]

[Printed name of person signing]

[Title of person signing], Authorized Representative of
 [name of Insurer or Risk Retention Group]

[Address of Representative]

Model Of "Certificate Of Insurance"

Name: [name of each covered location]

Address: [address of each covered location]

Policy Number:

Period of Coverage [current policy period]:

Name of [Insurer or Risk Retention Group]:

Address of [Insurer or Risk Retention Group]:

Name of Insured:

Address of Insured:

1. [Name of Insurer or Risk Retention Group], [the "Insurer" or "Group"], as identified above, hereby certifies that it has issued liability insurance covering the following underground storage tank(s):

[List the number of tanks at each facility and the name(s) and address(es) of the facility(ies) where the tanks are located. If more than one instrument is used to assure different tanks at any one facility, for each tank covered by this instrument, list the tank identification number provided in the notification submitted pursuant to 40 CFR 280.22, or the corresponding state requirement, and the name and address of the facility.]

for [insert: "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "non-sudden accidental releases" or "accidental releases"; in accordance with and subject to the limits of liability, exclusions, conditions, and other terms of the policy; if coverage is different for different tanks or locations, indicate the type of coverage applicable to each tank or location] arising from operating the underground storage tank(s) identified above.

The limits of liability are [insert the dollar amount of the "per occurrence" and "annual aggregate" limits of the Insurer's or Group's liability; if the amount of coverage is different for different types of coverage or for different underground storage tanks or locations, indicate the amount of coverage for each type of coverage and/or for each underground storage tank or location], exclusive of legal defense costs, which are subject to a separate limit under the policy. This coverage is provided under [policy number]. The effective date of said policy is [date].

2. The ["Insurer" or "Group"] further certifies the following with respect to the insurance described in Paragraph 1:

a. Bankruptcy or insolvency of the insured shall not relieve the ["Insurer" or "Group"] of its obligations under the policy to which this certificate applies.

b. The ["Insurer" or "Group"] is liable for the payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third party,

with a right of reimbursement by the insured for any such payment made by the ["Insurer" or "Group"]. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in 40 CFR 280.95-280.102.

c. Whenever requested by [a Director of an Implementing Agency], the ["Insurer" or "Group"] agrees to furnish to [the Director] a signed duplicate original of the policy and all endorsements.

d. Cancellation or any other termination of the insurance by the ["Insurer" or "Group"], except for non-payment of premium or misrepresentation of insured, will be effective only upon written notice and only after the expiration of 60 days after a copy of such written notice is received by the insured. Cancellation for non-renewal of premium or misrepresentation by the insured will be effective only upon written notice and only after expiration of a minimum of 10 days after a copy of such written notice is received by the insured.

[Insert for claims-made policies:

a. The insurance covers claims otherwise covered by the policy that are reported to the ["Insurer" or "Group"] within six months of the effective date of cancellation or non-renewal of the policy except where the new or renewed policy has the same retroactive date or a retroactive date earlier than that of the prior policy, and which arises out of any covered occurrence that commenced after the policy retroactive date, if applicable, and prior to such policy renewal or termination date. Claims reported during such extended reporting periods are subject to the terms, conditions, limits, including limits of liability, and exclusions of the policy.]

I hereby certify that the wording of this instrument is identical to the wording in 40 CFR 280.97(b)(1) and that the ["Insurer" or "Group"] is ["licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in one or more states".]

[Signature of authorized representative of Insurer or Risk Retention Group]

[Printed name of person signing]

[Title of person signing]. Authorized Representative of [name of Insurer or Risk Retention Group]

[Address of Representative]

Model Of "Certification Of Financial Responsibility"

[Owner or operator] hereby certifies that it is in compliance with the requirements of Subpart H of 40 CFR Part 280.

The financial assurance mechanism(s) used to demonstrate financial responsibility under Subpart H of 40 CFR Part 280 is (are) as follows:

[For each mechanism, list the type of mechanism, name of issuer, mechanism number (if applicable), amount of coverage, effective period of coverage and whether the mechanism covers "taking corrective action" and/or "compensating third parties for bodily injury and property damage caused by" either "sudden accidental releases" or "non-sudden accidental releases" or "accidental releases."]

[Signature of owner or operator]

[Printed name of owner or operator]

[Title]

[Date]

[Signature of witness or notary]

[Printed name of witness or notary]

[Date]

The owner or operator must update this certification whenever the financial insurance mechanism(s) used to demonstrate financial responsibility change(s).

Publications And Videos About USTs

PUBLICATIONS

TITLE

AVAILABLE FREE FROM

Musts For USTs: A Summary Of The Federal Regulations For Underground Storage Tank Systems

Booklet clearly summarizes federal UST requirements for installation, release detection, spill, overfill, and corrosion protection, corrective action, closure, reporting and recordkeeping. (About 40 pages.)

You can call EPA's toll-free RCRA/Superfund Hotline at 800 424-9346 and order free copies. Just identify the titles you want. Or you can write and ask for titles by addressing your requests to:

Normas Y Procedimientos Para T.S.A.

Spanish translation of Musts For USTs. (About 40 pages.)

NCEPI
Box 42419
Cincinnati, OH 45242

Straight Talk On Tanks: Leak Detection Methods For Petroleum Underground Storage Tanks

Booklet explains federal regulatory requirements for leak detection and briefly describes allowable leak detection methods. (About 30 pages.)

Or you can fax your order to NCEPI at 513 891-6685.

Doing Inventory Control Right: For Underground Storage Tanks

Booklet describes how owners and operators of USTs can use inventory control and periodic tightness testing to meet federal leak detection requirements. Contains reporting forms. (About 16 pages.)

Manual Tank Gauging: For Small Underground Storage Tanks

Booklet provides simple, step-by-step directions for conducting manual tank gauging for tanks 2,000 gallons or smaller. Contains reporting forms. (About 12 pages.)

Don't Wait Until 1998: Spill, Overfill, And Corrosion Protection For Underground Storage Tanks

Information to help owners and operators of USTs meet the 1998 deadline for compliance with requirements to upgrade, replace, or close USTs installed before December 1988. (About 16 pages.)

An Overview Of Underground Storage Tank Remediation Options

Fact sheets provide information about technologies that can be used to remediate petroleum contamination in soil and groundwater. (About 26 pages.)

Controlling UST Cleanup Costs

Fact sheet series on the cleanup process includes: *Hiring a Contractor*, *Negotiating the Contract*, *Interpreting the Bill*, *Managing the Process*, and *Understanding Contractor Code Words*. (About 10 pages.)

Federal Register Reprints

Not simple summaries, these reprints are extensive records of the rulemaking process including technical information, explanatory preambles, and the rules as they appear in the Code of Federal Regulations. Reprints dated 9/23/88; 10/26/88; 11/9/89; 5/2/90; and 2/18/93. Over 300 pages.

Publications And Videos About USTs

VIDEOS

TITLE/COST

AVAILABLE FROM

Doing It Right

Illustrates proper installation of underground tanks and piping for installation crews. Part 1: Tanks (24 minutes); Part 2: Piping (16 minutes). Cost: \$25

Doing It Right II: Installing Required UST Equipment

Illustrates installation of spill and overfill equipment, observation wells, and piping leak detection (23 minutes). Cost: \$60

Doing It Right and Doing It Right II Set Cost: \$75

Keeping It Clean: Making Safe And Spill-Free Motor Fuel Deliveries

Making pollution-free deliveries to USTs. Includes Stage 1 vapor recovery, overfill prevention and spill containment. For fuel tanker drivers and UST owner/operators (25 minutes). Cost: \$60

Petroleum Leaks Underground

How liquids and vapors move in the subsurface and why early response to leaked petroleum is so important. Part 1: How Liquids Move (14 minutes); Part 2: How Vapors Move (15 minutes). Cost: \$75

Straight Talk On Leak Detection

Overview of the leak detection methods available for complying with federal regulations. Part 1: Straight Talk From Tank Owners (owners address the problems of UST compliance (5 minutes)); Part 2: Straight Talk On Leak Detection (30 minutes). Cost: \$40

Tank Closure Without Tears: An Inspector's Safety Guide

Focuses on explosive vapors and safe tank removal (30 minutes). Video and Booklet Cost: \$35; Booklet: \$5

What Do We Have Here?: An Inspector's Guide To Site Assessment At Tank Closure

Inspecting sites for contamination where tanks have been removed. Part 1: Site Assessment Overview (30 minutes); Part 2: Field Testing Instruments At A Glance (14 minutes); Part 3: Soil And Water Sampling At A Glance (7 minutes). Video and Booklet Cost: \$45; Booklet: \$5

Searching For The Honest Tank: A Guide To UST Facility Compliance Inspection

Covers major steps of UST inspections from protocols and equipment to enforcement and followup; from cathodic protection to leak detection. Directed at inspectors, yet also helpful to owners and operators (30 minutes). Video and Booklet Cost: \$40; Booklet: \$5

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New England Interstate Environmental
Training Center
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2 Fort Road
South Portland, ME 04106
207 767-2539

State UST/LUST Contacts

**Alabama Dept. of Env.
Management**
Groundwater Section/
Water Division
Box 301463
Montgomery, AL
36130-1463
UST phone:
334 271-7986
LUST phone:
334 271-7834

**Alaska Dept. of Env.
Conservation**
410 Willoughby Ave.
Juneau, AK
99801-1795
phone: 907 465-5203

**Arizona Dept. of Env.
Quality**
3033 N. Central Ave.
Phoenix, AZ 85012
phone: 602 207-4324

**Arkansas Dept. of
Pollution Control &
Ecology**
Regulated Storage
Tank Division
8001 National Dr.
Little Rock, AR
72209
phone: 501 570-2801

**California State Water
Resources Control Board**
Div. of Clean Water
Program
Box 944212
Sacramento, CA
94244-2120
phone: 916 227-4313

[UST contact]
**Colorado State Oil
Inspection Office**
1515 Arapahoe Street
Suite 525, Tower 3
Denver, CO
80202-2117
phone: 303 620-4300

[LUST contact]
Colorado Dept. of Health
Hazardous Materials &
Waste Mgt. Div.
UST Program
4300 Cherry Creek Dr. S.
Denver, CO 80220
phone: 303 692-3453

**Connecticut Dept. of Env.
Protection**
UST Program
State Office Bldg.
79 Elm Street
Hartford, CT 06106
phone: 203 424-3374

**DC Env. Regulatory
Administration**
Pesticides, Hazardous
Waste & UST Div.
2100 Martin Luther King
Ave. S.E., Suite 203
Washington, D.C. 20020
phone: 202 645-6080

**Delaware Dept. of Natural
Resources & Env. Control**
UST Branch
715 Grantham Lane
New Castle, DE 19720
phone: 302 323-4588

**Florida Dept. of Env.
Regulation**
Tank Section
Twin Towers Office
Bldg., Rm. 403
2600 Blair Stone Road
Tallahassee, FL
32399-2400
phone: 904 488-3935

**Georgia Dept. of Natural
Resources**
UST Mgt. Program
4244 Intl. Parkway,
Suite 100
Atlanta, GA 30354
phone: 404 362-2687

Hawaii Dept. of Health
Solid and Hazardous
Waste Branch
919 Ala Moana Blvd.,
Suite 212
Honolulu, HI 96814
phone: 808 586-4226

**Idaho Dept. of Health &
Welfare**
Div. of Env. Quality
1410 North Hilton
Boise, ID 83706
phone: 208 334-0542

[UST contact]
**Illinois Office of State Fire
Marshall**
Div. of Petroleum &
Chem. Safety
1035 Stevenson Dr.
Springfield, IL 62703
phone: 217 785-5878

[LUST contact]
Illinois EPA
Div. of Remediation Mgt.
LUST Section
Box 19276
Springfield, IL
62794-9276
phone: 217 782-6760

Indiana Dept. of Env. Mgt.
Office of Env. Response
Box 7015
Indianapolis, IN 46206
phone: 317 233-6418

**Iowa Dept. of Natural
Resources**
UST Section
Wallace State Office
Bldg.
900 East Grand
Des Moines, IA 50319
phone: 515 281-8135

**Kansas Dept. of Health &
Env.**
Bureau of Env.
Remediation
Storage Tank Section
Forbes Field, Bldg. 740
Topeka, KS 66620
phone: 913 296-1678

**Kentucky Div. of Waste
Mgt.**
UST Branch
14 Reilly Road
Frankfort, KY 40601
phone: 502 564-6716

**Louisiana Dept. of Env.
Quality**
UST Division
Box 82178
Baton Rouge, LA
70810
phone: 504 765-0243

**Maine Dept. of Env.
Protection**
State House, Station 17
Hospital St., Ray Bldg.
Augusta, ME 04333
phone: 207 287-2651

**Maryland Dept. of Env.
Waste Mgt. Adm.**
Oil Control Program
2500 Broening Highway
Baltimore, MD 21224
phone: 410 631-3442

[UST contact]
**Massachusetts Dept. of
Public Safety**
UST Program
1010 Commonwealth
Ave.
Boston, MA 02215
phone: 617-351-6000

[LUST contact]
**Massachusetts Dept. of
Env. Protection**
Bureau of Waste Site
Cleanup
One Winter St.
Boston, MA 02108
phone: 617 556-1044

**Michigan Dept. of Natural
Resources**
UST Division
Box 30157
Lansing, MI 48909
UST phone:
517 373-8168
MUSTFA (state fund):
517 373-6247

**Minnesota Pollution
Control Agency**
Tanks and Spills Section
520 Lafayette Road
North
St. Paul, MN
55155-3898
phone: 612 297-8609

State UST/LUST Contacts

Mississippi Dept. of Env.
Quality
Bureau of Pollution
Control, UST Section
Box 10385
Jackson, MS
39289-0385
phone: 601 961-5171

Missouri Dept. of Natural
Resources
Water Pollution Control
Program (UST)
Environmental Services
Program (LUST)
Box 176
Jefferson City, MO
65102-0176
UST phone:
314 751-7428
LUST phone:
314 526-3384

Montana Dept. of Health
& Env. Sciences
Solid & Hazardous
Waste Bureau
UST Program
Cogswell Bldg.
Helena, MT 59620
phone: 406 444-5970

[UST contact]
Nebraska State Fire
Marshal
Flammable Liquid
Storage
246 South 14th St.
Lincoln, NE 68508
phone: 402 471-9465

[LUST contact]
Nebraska Dept. of Env.
Control
LUST/ER Section
Box 98922
Lincoln, NE
68509-8922
phone: 402 471-4230

Nevada Dept. of Conserv.
& Natural Resources
Div. of Env. Protection
Capitol Complex
333 W. Nye Lane
Carson City, NV 89710
phone: 702 687-5872

New Hampshire Dept. of
Env. Services
Oil Compliance Section
Groundwater Protection
Bureau
Box 95
Concord, NH 03301
phone: 603 271-3644

New Jersey Dept. of Env.
Protection
Responsible Party Site
Remediation
401 E. State (CN-028)
Trenton, NJ
08625-0028
phone: 609 984-3156

New Mexico Env. Dept.
UST Bureau
Box 26110
Santa Fe, NM
87502
phone: 505 827-0188

New York Dept. of Env.
Conservation
Bulk Storage Section
50 Wolf Rd., Rm. 340
Albany, NY
12233-3750
phone: 518 457-4351

North Carolina Pollution
Control Branch
Div. of Env. Mgt.
Dept. of Env. Health &
Natural Resources
441 N. Harrington St.
Raleigh, NC
27603-1323
phone: 919 733-8486

North Dakota Div. of
Waste Mgt.
Dept. of Health and
Consolidated Lab.
Box 5520
Bismarck, ND
58502-5520
phone: 701 328-5166

Ohio Dept. of Commerce
Bureau of UST Regulations
8895 East Main St.
Box 687
Reynoldsburg, OH 43068
phone: 614 752-7938

Oklahoma Corporation
Commission
Fuel Storage Division
Box 52000-2000
Oklahoma City, OK
73152-2000
UST phone:
405 521-3107
LUST phone:
405 521-6575

[UST contact]
Oregon Dept. of Env.
Quality
UST Compliance Section
811 S.W. Sixth Ave.,
7th Floor
Portland, OR 97204
phone: 503 229-5774

[LUST contact]
Oregon Dept. of Env.
Quality
UST Cleanup Program
811 S.W. Sixth Ave.,
9th Floor
Portland, OR 97204
phone: 503 229-6642

Pennsylvania Dept. of
Env. Resources
Storage Tank Program
Box 8762
Harrisburg, PA
17101-2301
phone: 717 772-5599

Rhode Island Dept. of Env.
Mgt.
UST Section
291 Promenade St.
Providence, RI 02908
phone: 401 277-2234

South Carolina Dept. of
Health and Env. Control
Groundwater Protection
Division
2600 Bull St.
Columbia, SC 29201
UST phone:
803 734-5335
LUST phone:
803 734-5331

South Dakota Dept. of
Env. & Nat. Resources
UST Program
523 East Capitol
Pierre, SD 57501
phone: 605 773-3296

Tennessee Dept. of Env.
& Conservation
Div. of USTs
4th Floor, L&C Tower
401 Church St.
Nashville, TN
37243-1541
phone: 615 532-0945

Texas Natural Resources
Conservation Comm.
Petroleum Storage
Tank Div.
Box 13087
Austin, TX 78711-3087
phone: 512 239-2000

Utah Dept. of Env. Quality
Div. of Env. Response
and Remediation
UST Branch
168 North 1950 West,
1st Floor
Salt Lake City, UT 84116
phone: 801 536-4100

Vermont Dept. of Natural
Resources
UST Program
103 South Main St.,
West Bldg.
Waterbury, VT 05676
phone: 802 244-8702

[UST contact]
Virginia Dept. Env. Quality
Response Program
4951 Cox Road
Glen Allen, VA 23060
phone: 804 527-5189

[LUST contact]
Virginia Dept. Env. Quality
Groundwater Mgt.
Program
4951 Cox Road
Glen Allen, VA 23060
phone: 804 527-5189

State UST/LUST Contacts

Washington Dept. of Ecology

Box 47655
Olympia, WA
98504-7655

UST phone:

206 407-7211

LUST phone:

206 407-7218

West Virginia Div. of Env. Protection

Office of Waste Mgt.

UST Section

1356 Hansford St.

Charleston, WV 25301

phone: 304 858-6371

[LUST contact]

Wisconsin Dept. of

Industry, Labor & Human

Relations

Division of Safety and

Buildings

Box 7969

Madison, WI 53707

phone: 608 267-7605

[LUST contact]

Wisconsin Dept. of

Natural Resources

Bureau of Solid and

Hazardous Waste Mgt.

Box 7921

Madison, WI

53707-7921

phone: 608 267-7560

Wyoming Dept. of Env.

Quality

Water Quality Div.

Herschler Bldg.,

4th Floor

122 West 25th St.

Cheyenne, WY 82002

phone: 307 777-7096

U.S. TERRITORIES

American Samoa Env.

Protection Agency

Office of the Governor

American Samoa

Government

ATTN: UST Program

Pago Pago, American

Samoa 96799

phone: 684 633-2304

Commonwealth of

Northern Mariana Islands

Div. of Env. Quality

Box 1304

Dr. Torres Hospital

Saipan, MP 96950

phone: 607 234-6984

Guam Env. Protection

Agency

IT&E

Harmon Plaza,

Complex Unit D-107

130 Rojas St.

Harmon, Guam 96911

phone: 671 646-8863

Puerto Rico Env. Quality

Board

Box 11488

Commonwealth of

Puerto Rico

Sanjurjo, Puerto Rico

00910

phone: 809 767-8109

Virgin Islands Div. of Env.

Protection

Dept. of Planning and

Natural Resources

Nisky Center 231

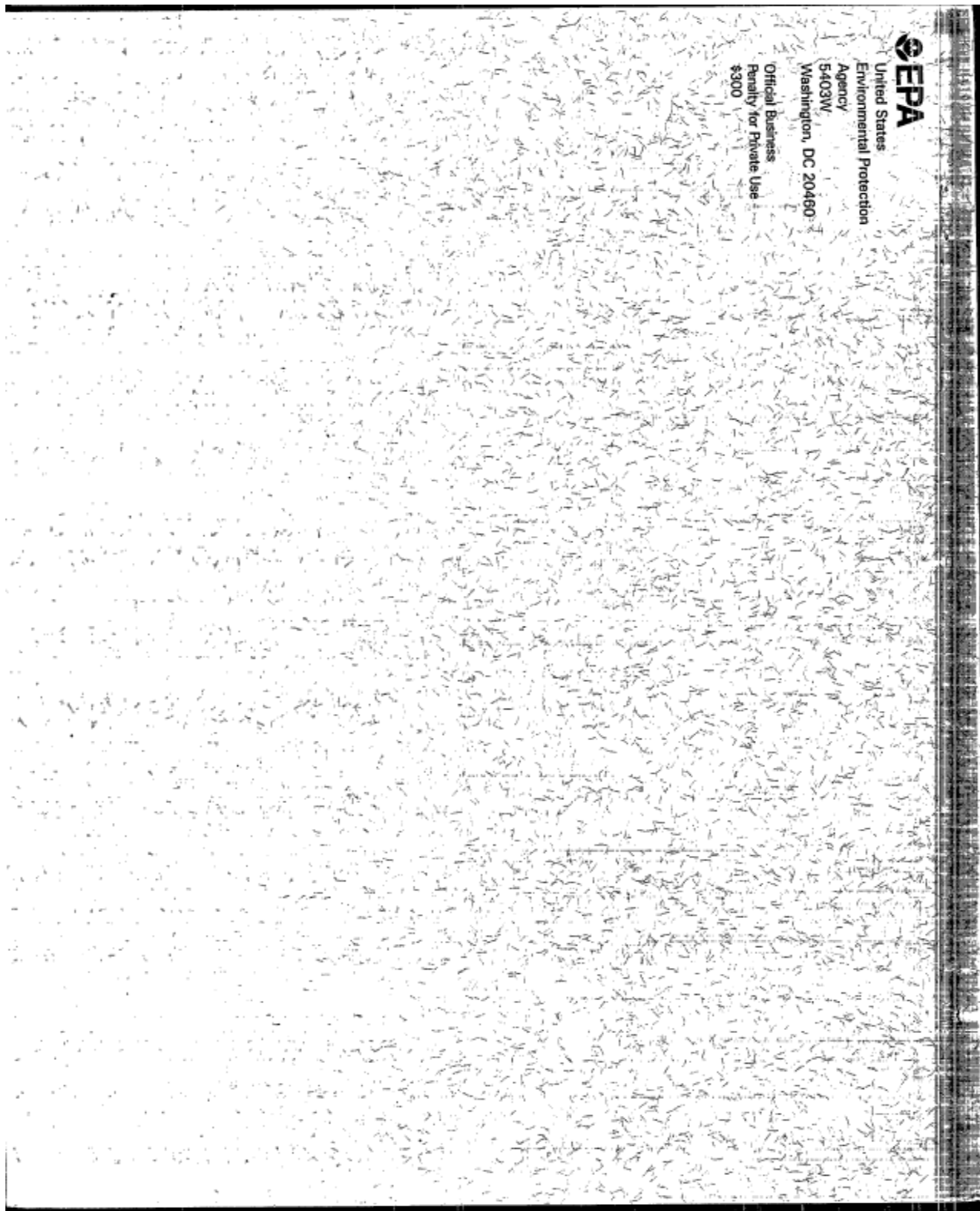
45A Estate Nisky

Charlotte Amalie

St. Thomas, Virgin

Islands 00802

phone: 809 774-3320



United States
Environmental Protection

Agency
6403W

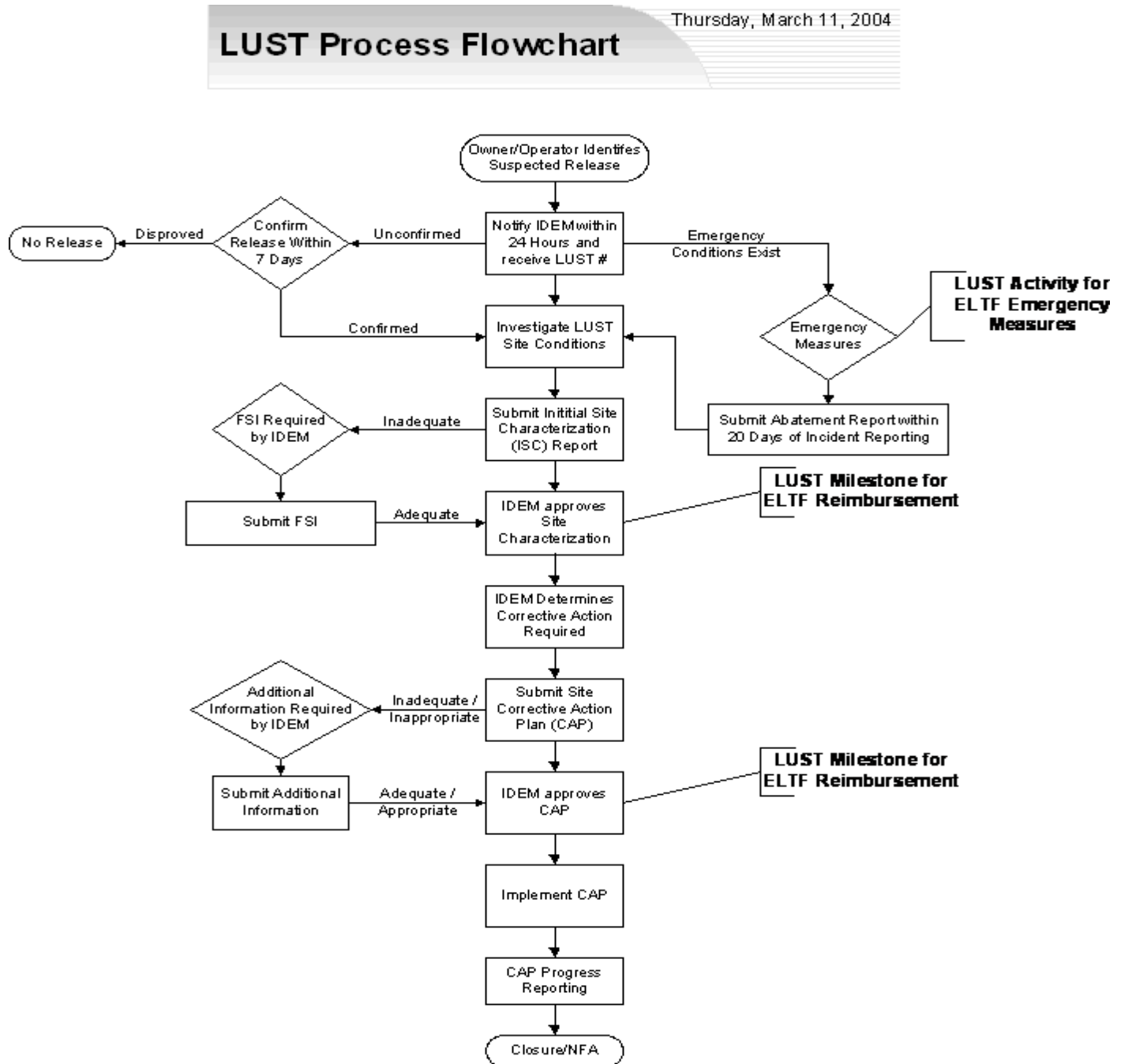
Washington, DC 20460

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Penalty for Private Use
\$300

CHAPTER 9 - ATTACHMENT 6
Leaking Underground Storage Tank and Spill Release Flow Chart

RISC Chapter 3 User's Guide Draft: Current contacts and the final version of the flowchart, once approved, can be accessed at the following IDEM website. <http://www.in.gov/idem/land/lust/index.html>

Figure 3-2: LUST Process Flowchart



Description:“LUST Process Flowchart” depicts the LUST Process from initial incident reporting through closure. Items presented in this figure are explained throughout the rest of this chapter.

CHAPTER 9 – ATTACHMENT 7
UST Leak Detection, Corrosion Protection, and
Spill/Overfill Prevention Requirements

WHAT DO YOU HAVE TO DO?

Minimum Requirements

You must have Leak Detection, Corrosion Protection, and Spill/Overfill Prevention.

LEAK DETECTION		
NEW TANKS <i>2 Choices</i>	<ul style="list-style-type: none">Monthly Monitoring*Monthly Inventory Control and Tank Tightness Testing Every 5 Years. (You can only use this choice for 10 years after installation.)	
EXISTING TANKS <i>3 Choices</i> <i>The chart at the bottom of the previous page displays these choices.</i>	<ul style="list-style-type: none">Monthly Monitoring*Monthly Inventory Control and Annual Tank Tightness Testing. (This choice can only be used until December 1998.)Monthly Inventory Control and Tank Tightness Testing Every 5 Years. (This choice can only be used for 10 years after adding corrosion protection and spill/overfill prevention or until December 1998, whichever date is later.)	
NEW & EXISTING PRESSURIZED PIPING <i>Choice of one from each set</i>	<ul style="list-style-type: none">Automatic Flow RestrictorAutomatic Shutoff DeviceContinuous Alarm System	<ul style="list-style-type: none">Annual Line TestingMonthly Monitoring* (except automatic tank gauging)
NEW & EXISTING SUCTION PIPING <i>3 Choices</i>	<ul style="list-style-type: none">Monthly Monitoring* (except automatic tank gauging)Line Testing Every 3 YearsNo Requirements (if the system has the characteristics described on page 11)	
CORROSION PROTECTION		
NEW TANKS <i>3 Choices</i>	<ul style="list-style-type: none">Coated and Cathodically Protected SteelFiberglassSteel Tank Clad with Fiberglass	
EXISTING TANKS <i>4 Choices</i>	<ul style="list-style-type: none">Same Options as for New TanksAdd Cathodic Protection SystemInterior LiningInterior Lining and Cathodic Protection	
NEW PIPING <i>2 Choices</i>	<ul style="list-style-type: none">Coated and Cathodically Protected SteelFiberglass	
EXISTING PIPING <i>2 Choices</i>	<ul style="list-style-type: none">Same Options as for New PipingCathodically Protected Steel	
SPILL/OVERFILL PREVENTION		
ALL TANKS	<ul style="list-style-type: none">Catchment Basins	<ul style="list-style-type: none">Automatic Shutoff Devices orOverfill Alarms orBall Float Valves
*Monthly Monitoring includes:	Automatic Tank Gauging Vapor Monitoring Interstitial Monitoring	Ground-Water Monitoring Other Approved Methods

CHAPTER 10

THE HAZARD COMMUNICATION STANDARD

INTRODUCTION

The Occupational Safety and Health Administration (OSHA) Hazard Communication standard (HCS), 29 CFR 1910.1200, was written “to ensure that the hazards of all chemicals...are evaluated, and that information concerning their hazards is transmitted to employers and employees” (paragraph (a)(1)). The Mine Safety and Health Administration (MSHA) published the final Hazard Communication standard (HazCom) on June 21, 2002. The MSHA HazCom is found at 30 CFR Part 47. Employees have both a need and a right to know the hazards of chemicals in their workplace. They also have a need and a right to know what they can do to protect themselves and the environment. Employers are responsible for providing this information to their employees. Manufacturers and importers are responsible for identifying the hazards of the chemicals they produce, and for giving this information to employers.

See Appendix A under “Hazard Communication” for Indiana OSHA contact information.

APPLICABILITY

The OSHA HCS requires chemical manufacturers or importers to identify the hazards of the chemicals they produce or import. The process of identifying the hazards of chemical is *hazard determination*. For all hazardous chemicals, the manufacturer or importer must prepare a *Material Safety Data Sheet* (MSDS). The MSDS answers the questions employees working with the chemical have a right to ask, specifically:

- What are the hazards associated with this chemical?
- What can I do to protect myself (safety precautions)?

Employers should receive a copy of the MSDS with the first shipment of a hazardous chemical. If it is not received, the employer should request it from the manufacturer. Employers have the right to obtain chemical hazard and safety precaution information, in the form of an MSDS, from the manufacturers of all hazardous chemical products used in their workplace.

Employers who use hazardous chemicals must make MSDSs and other health information available to their employees. The process of making this information available is *hazard communication*. Hazard communication means more than putting a binder of MSDSs in the office near the work site. Employers must write a *Hazard Communication Program*, which will include:

- A list of the hazardous chemicals present in the workplace.
- A plan to inform employees of the dangers of non-routine tasks (for example, the cleaning of process tanks).
- A plan to inform employees of the hazards of chemicals contained in unlabeled pipes in their work areas.
- A plan to safeguard the health of contractor employees (for example, truck drivers) while they are in the workplace.
- A plan to guarantee that each container of hazardous chemicals in the work place is correctly labeled.
- A plan to allow employees easy access to all MSDSs during the work shift.
- Details of the employee training program for hazardous chemicals in the workplace.

Not all of the requirements above apply to laboratories or warehouse operations where chemicals are handled only in sealed containers. Operations in which employees may be exposed under normal conditions of use, or in a foreseeable emergency, are subject to all of the requirements above. Each of the requirements will be discussed in more detail later in this chapter.

HAZARDOUS CHEMICAL LISTS

It is no accident that the first item in the Hazard Communication Program is a list of the hazardous chemicals that are present in a workplace. Until the employer identifies all of the hazardous chemicals in a workplace, none of the other items in the program can be completed in detail.

An inventory of the hazardous chemicals in a workplace should go beyond chemical storage cabinets and 55-gallon drums. Chemicals may be solids, liquids, gases, fumes, vapors, or mists. They may be in tanks, drums, or cylinders; in plastic, metal, or glass containers or pipes; or they may be uncontained. Welding fumes, vapors rising from an open-top tank, and dusts generated from process operations are examples of uncontained chemicals which may be hazardous. ***To prepare a Hazard Communication Program, the employer should first identify all of the chemicals found in the workplace.***

Next, the employer will need to determine whether all of the chemicals on the list are hazardous. OSHA defines a hazardous chemical as any chemical which is:

- a physical hazard, or
- a health hazard.

A chemical is a *physical hazard* if it has the potential to cause physical damage to the people or objects around it. In OSHA's technical definition, a chemical is a physical hazard if it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive), or water-reactive. ***So a chemical may be a physical hazard because of its own chemical properties (like an oxidizer), or because of the form in which it is found (like a compressed gas).***

A chemical is a *health hazard* if valid scientific evidence shows that employees who are exposed to it will suffer immediate or delayed health effects. The term "health hazard" includes chemicals which cause cancer; cause reproductive problems; cause an allergic reaction, or may cause damage to specific internal organs; are poisonous, are irritating to the skin, eyes or respiratory tract; or are corrosive.

The employer should direct any questions about the hazards of a specific chemical to the distributor or manufacturer. The manufacturer or distributor must answer those questions, by law.

Some hazardous chemicals and other hazardous substances are specifically excluded from the program. Employers should review the list of excluded substances, found in paragraphs (b)(6) to (b)(6)(xii) of the standard. Some of the *excluded* substances may seem surprising. For example:

- Hazardous wastes and CERCLA hazardous substances, which are regulated by the Environmental Protection Agency (EPA), are excluded from the OSHA HCS.
- Nuisance dusts, which are frequently the only hazards listed on an MSDS and **are subject to an OSHA permissible exposure limit**, are excluded from the HCS.
- Biological hazards, such as molds and bacteria, are not chemicals and are excluded from the standard.
- Hazardous substances manufactured for consumer use, such as strong cleaners, that are used in the workplace as they would be in the home, are excluded from the standard.

Eliminating these and other excluded items from the list of hazardous chemicals will help the employer to streamline the Hazard Communication Program and focus upon other workplace dangers.

The list, once completed, serves as a guide for the employer's MSDS program. The employer should have a current MSDS for each hazardous chemical in the workplace. If no MSDS is found, the employer should request one from the manufacturer. If an MSDS is found on an item not on the list, the reason should be noted. The employer should check before throwing the MSDS away. Perhaps the item is only at the workplace from time to time, but not continuously. Or, perhaps the item is a source of nuisance dust, in which case the manufacturer is required to provide an MSDS because there is a *Permissible Exposure Limit* (PEL) for nuisance dusts, but the employer is not required to address the chemical in the Hazard Communication Program. The decision to maintain or discard such MSDSs is up to the employer.

SHUTDOWNS AND OTHER NON-ROUTINE ACTIVITIES

Often at aggregate operations, large pieces of equipment will be shutdown and cleaned or serviced periodically. Such shutdowns may occur on a regular schedule, but they are not really part of the employee's routine. These non-routine tasks may expose employees to chemical hazards with which they are unfamiliar. It is the employer's responsibility to address any chemical hazards particular to such non-routine activities in the Hazard Communication Program.

MULTI-EMPLOYER WORKPLACES

If an employer produces, uses, or stores hazardous chemicals at a workplace and contractor employees may be exposed to those chemicals (for example, employees of a construction contractor working on-site, or a truck driver loading or unloading on-site), then the employer's Hazard Communication Program must ensure that:

- Contractor employees have access to MSDSs for each hazardous chemical to which they might be exposed;
- Contractor employees will be informed of anything they need to do while working at the site to protect themselves from chemical hazards; and
- Contractor employees will be trained to understand the labeling system used in the workplace.

The employer may use the existing Hazard Communication Program to meet these requirements. It is important to recognize that ***an employer has a responsibility not only to his own employees, but to every worker on site*** who maybe exposed to hazardous chemicals either as a part of that worker's normal operations or in a foreseeable emergency.

CHEMICAL LABELING

Every hazardous chemical that comes into an employer's workplace should already be correctively labeled. The employer must not remove or deface these labels, unless the container is immediately marked with the same information. The employer's duty is to *check every label* on every incoming container of hazardous chemicals to make certain that it meets all of the following conditions:

- It is in English (other languages *may* be included).
- It is legible.
- It is prominently displayed on the container, or readily available in the work area throughout each work shift.
- It gives the identity of the hazardous chemical.

- It has appropriate physical and health hazard warnings, in the form of words, pictures, symbols, or some combination thereof.
- It gives the name and address of the chemical manufacturer, importer or distributor.

If the label has all of the necessary information in the proper form, the employer is not required to attach another label.

Some hazardous chemicals have labeling alternatives, for example, treated wood items that will be cut, releasing hazardous dust. Individual labeling of these items is not necessary; instead, the manufacturer may transmit a label to the employer with the first shipment, and not submit another unless the information on the label changes. Likewise, employers are not required to label individual stationary process containers. They may instead choose to use signs, placards, process sheets, batch tickets, operating procedures or other such written information at their convenience.

MATERIAL SAFETY DATA SHEETS (MSDS)

An employer can decide what MSDSs to maintain at the workplace using the list of hazardous chemicals generated earlier. The section *Hazardous Chemical Lists* describes how to do so.

Employers may take the information in the MSDS at face value. They are not required to research the hazards of the chemicals they use to create an MSDS. If an MSDS sent by the manufacturer is missing required information, OSHA can assist the employer in obtaining more information. For information beyond the scope of the product label, including emergency, first aid, fire, and spill response recommendations, the employer should be able to consult the MSDS.

The employer may keep MSDSs in any convenient form, including electronic, as long as they are readily available to employees in the workplace at all times and in emergencies. In case of an accident or emergency, the information contained in the MSDS could become vital.

EMPLOYEE TRAINING

Employees who may be exposed to hazardous chemicals during normal operations or in foreseeable emergencies must receive information and training prior to initial assignment in an area. The *information* they receive must include:

- An *overview* of the requirements of the HCS.
- Any *operations* in their work area where hazardous chemicals are present.
- The *location(s)* of the written Hazard Communication Program, the hazardous chemical list(s), and MSDSs.

Employees must receive *training* that will teach them:

- What *methods* may be used to detect the presence or release of a hazardous chemical in the work area (odors, alarms, visible signs, monitoring devices).
- The *physical and health hazards* of the chemicals in their work area.
- The *measures they can take to protect themselves* from workplace hazardous chemicals, including correct work practices, emergency procedures and the use of personal protective equipment.
- How to understand the *labeling* system.
- How to understand and use a material *safety data sheet*.
- *Instructions* for obtaining and using hazard information.

Employees should receive additional training when a new hazard is introduced into the workplace, and when new information becomes available about hazardous chemicals already present in the workplace. The standard does not specifically require employers to document training, but records showing when each employee was trained, and what training was given, will be the easiest way to demonstrate to an inspector that training requirements have been fulfilled.

Keep in mind that the goal of training is for employees to understand the hazards to which they may be exposed, to know how to protect themselves from those hazards, and to know where to find additional information.

THE MINE SAFETY AND HEALTH ADMINISTRATION HAZARD COMMUNICATION STANDARD

The Mine Safety and Health Administration (MSHA) Hazard Communication Standard (HazCom), 30 CFR Part 47, for the coal and metal/nonmetal mining industries was published on June 21, 2002.

The MSHA HazCom standard is divided into 10 subparts. They include:

- Subpart A – Purpose, Scope, Applicability, and Initial Training
- Subpart B – Definitions
- Subpart C – Hazard Determination
- Subpart D – Hazard Communication Program
- Subpart E – Container Labels and Other Forms of Warning
- Subpart F – Material Safety Data Sheets (MSDSs)
- Subpart G – Reserved
- Subpart H – Making Hazard Communication Information Available
- Subpart I – Trade Secret Hazardous Chemical
- Subpart J – Exemptions

MSHA used the OSHA General Industry Hazard Communication Standard (HCS) as a basis for the MSHA standard, and the two standards are functionally similar. However, some of the provisions of the OSHA standard which were unsuitable to the mining industry were revised by

MSHA, along with some controversial aspects of the OSHA standard. The following table explains some of the differences between OSHA's and MSHA's Hazard Communication standards.

Table 1
MSHA and OSHA Hazard Communication Standards

MSHA's HazCom	OSHA's HCS and other OSHA Standards
More than one miner may use an unlabeled temporary, portable container.	Only one employee who transferred the chemical from a labeled container can use an unlabeled temporary, portable container.
EPA regulated "hazardous waste" is covered under the standard.	EPA regulated "hazardous waste" is excluded (is covered under Hazardous Waste Operations standard, 29 CFR 1910.120).
Raw materials are exempt from labeling.	Raw materials are not exempt from labeling.
Must provide MSDS and label to customer on request.	Must send MSDS and label with initial shipment to an employer.
Retain MSDS for 3 months after use of chemical is discontinued and notification of employees.	Retain MSDS for 30 years.
Training records covered under 30 CFR Part 46 and 48.	No training records.

The following is a brief discussion of how certain MSHA standards differ from OSHA.

One difference between the OSHA and MSHA standards is their coverage of laboratories. Laboratories are separately addressed by OSHA because the situation of laboratories regulated by OSHA was believed to be unique. Laboratories found in the mining industry will be subject to the full scope of the MSHA standard, because they are generally small-scale, devoted to quality control or process control, and staffed by individuals who have only received on-the-job training. Also, compared to research facilities or laboratories in the chemical manufacturing industry, laboratories in the mining industry use relatively few chemicals and analytical methods.

Hazard Determination

One of the major differences between MSHA and OSHA hazard communication standards is in the hazard determination requirements. OSHA requires employers to consult specified lists and to consider all available evidence on the hazardous nature of a product. This may require additional independent research and place a considerable burden on manufacturers. MSHA requires the operator to evaluate each chemical brought on mine property and each chemical produced on mine property to determine if it is hazardous as specified in Table 47.21 of the standard. MSHA's standard does not require operators to look beyond certain sources, specifically, the MSHA standards, the American Conference of Government Industrial Hygienists (ACGIH) Program's Annual Report, and the International Agency for Research on Cancer (IARC) Monographs.

HazCom Program

MSHA's requirements for a written Hazard Communication Program are essentially similar to OSHA's, although individuals reading the MSHA standard may notice that MSHA has rearranged the requirements somewhat. An employer's written program must include:

1. How the program is put into practice at the mine through the use of:
 - Hazard determination,
 - Labels and other forms or warning,
 - Material safety data sheets (MSDSs), and
 - Miner training.
2. A list of other records identifying all hazardous chemicals known to be at the mine. The list must:
 - Use a chemical identity that permits cross-referencing between the list, a chemical's label, and its MSDS; and
 - Be compiled for the whole mine or by individual work areas.
3. At mines with more than one operator, the methods for:
 - Providing other operators with access to MSDSs, and
 - Informing other operators about-
 - a. hazardous chemicals to which their miners can be exposed,
 - b. the labeling system on the containers of these chemicals, and
 - c. appropriate protective measures.

Training

The MSHA HazCom standard establishes training requirements in addition to those already promulgated under 30 CFR Part 48. These training requirements are similar to those in the OSHA standard, with a few additions. Specifically:

- MSHA operators would be required to train employees in the hazards of EPA-regulated hazardous wastes present in the workplace.
- MSHA operators would be required to train employees on the hazards of non-routine activities, unlabeled pipes, chemicals transported on conveyors, and raw materials transported in unlabeled containers while being mined or milled on mine property. The OSHA standard addresses non-routine activities and unlabeled pipes as part of the written Hazard Communication Program, rather than the training requirements.

If you conduct initial HazCom training separately from your existing MSHA training program (covered under 30 CFR 46 and 48), you do not need to make a record of it. If you integrate the initial HazCom training with your mine's existing training program, you must make a record as you would any other training conducted under parts 46 and 48.

Container Labels and Other Forms of Warning

For practical reasons, MSHA does not require the labeling of raw material being mined or milled while on mine property; however, hazard determination, training, and MSDS requirements would still apply. Labeling of temporary portable containers is not required when the contents are entirely emptied by the end of the shift and the user knows the identity of the chemical, its hazards, and any protective measures needed.

Material Safety Data Sheets (MSDS)

MSHA's MSDS development provisions are virtually identical to OSHA's. For practical reasons, MSHA does not require operators to maintain MSDSs in an employee's work area under all circumstances. MSHA feels it would place an undue burden on operators to require them to keep MSDSs available at the face in a coal mine, for example, or in work areas within a quarry or pit where there is no place to keep the MSDS. Instead, MSHA requires operators to make MSDSs available at a central location ("alternative location"), provided employees can access them at some time during their shift, and provided that MSDS information is immediately available in an emergency. MSHA requires operators to maintain MSDSs only as long as a hazardous chemical is present in the workplace, and that employees be given notice 3 months before a MSDS is discarded.

While the MSHA standard, like the OSHA standard, does not require hazardous wastes regulated by EPA to be labeled or covered by an MSDS, it does require operators to train employees on the hazards of such wastes which are present on the mine property. MSHA does not feel that EPA training requirements for hazardous waste training adequately inform employees who may be exposed, and feels that the additional training requirement is necessary.

Exemptions

MSHA's HazCom standard exempts certain chemicals and products from the standard. The following is a list of the chemicals and/or products that are exempt:

- Articles-products that release no significant amount of hazardous chemical and pose no physical or health risks;
- Biological hazards;
- Consumer products used in a manner typical of consumer usage;
- Cosmetics, drugs, food, food additive, drinks, alcoholic beverages, tobacco and tobacco products, or medical or veterinary device or product, including materials intended for use as ingredients in such products (such as flavors and fragrances);
- Radiation (ionizing and non-ionizing); and
- Wood or wood products, including lumber.

CONCLUSION

The underlying purpose of the Hazard Communication standard (HCS) is to reduce the number of illnesses, injuries and damage to the environment caused by hazardous chemicals in the workplace. It does so by creating an information network, in which manufacturers must tell a customer if a chemical is hazardous. That employer must then tell his employees of the chemical's hazards, and how they can protect themselves and the environment. That is why the HCS is often called the employee right-to-know standard.

The most visible result of the HCS is frequently the employer's MSDS program. It is important for employers to realize that simply putting all of the MSDSs received from suppliers in binders at the work-site does not bring them into compliance with the standard. That misconception may be why the HCS is the most frequently cited OSHA standard. Employee training, uncontained chemical hazards, hazards of non-routine tasks, hazards facing contractor employees, and

labeling requirements are also part of the standard. Each of these must be addressed in order for the employee to be properly and legally informed of the hazards in the workplace. The Hazard Communication Program at any one site is only as good as the training that is provided to the employees.

Employers are encouraged to consult the standard for more detail. In preparing a Hazard Communication Program, Appendix E to §1910.1200, *Guidelines for Employer Compliance*, may be especially helpful. Employers may also use the lists in this chapter as checklists, to determine the completeness of their programs and areas needing attention.

CHAPTER 11

SPILL/RELEASE REPORTING AND SPILL CONTROL

INTRODUCTION

This chapter is a guide to reporting responsibilities for a spill or release of oil, hazardous substances, objectionable substances, or an accidental air emission release. This chapter also contains information about spill prevention, storm water management and SARA Title III reporting requirements.

SPILL CONTROL PLAN REQUIREMENTS

There are several environmental compliance plans that are required to contain spill prevention and control provisions as well as release reporting information. An aggregate facility may or may not be required to have these compliance plans prepared depending on the applicability of various regulations to the facility's operations. A brief summary of each type of Plan follows.

SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN

The Clean Water Act requires a facility to create and implement a Spill Prevention Control and Countermeasure (SPCC) Plan, if the facility stores oil and/or oil products above specified threshold amounts, and if a spill from the facility could reasonably be expected to impact the navigable waters of the United States or adjoining shorelines.

Generally speaking, a facility in Indiana must have a SPCC Plan if:

1. The facility has more than 1,320 gallons of aboveground oil storage capacity, excluding containers that hold less than 55 gallons of oil.
2. The facility has more than 42,000 gallons of underground storage tank volume.

If a facility can answer "no" to both conditions, the reasons that an SPCC plan is not required should be documented in writing, and kept on file at the facility.

REQUIREMENTS OF A SPCC PLAN

If you store oil in excess of the above amounts, you should have an SPCC plan for your facility. The following items should be included in the Plan:

1. Description of controls that are necessary to prevent a discharge of oil from reaching water. For aboveground storage tanks, standard practice is to provide containment for the tank equivalent to 100% of the capacity of the tank plus sufficient free-board for a 25-year, 24-hour rainfall event (between 4.5-5 inches in Indiana depending on the location). If there is more than one tank in the containment area, you must provide 100% of the

capacity of the largest tank plus sufficient free-board for the 25-year, 24- hour rainfall event while subtracting the amount of containment volume taken up by the presence of the other tanks.

2. A Professional Engineer must certify that the plan has been prepared according to good engineering practices, in accordance with applicable industry standards and that the Plan is adequate for the facility.
3. The SPCC Plan must be reviewed a minimum of once every 5 years.
4. The Plan must be retained on-site.
5. The Plan must be approved by management personnel who have the authority to commit resources to implement the Plan.
6. The Plan must comply with 40 CFR Part 112 (see [Attachment 1](#) for SPCC requirements)
7. The Plan must identify where practical potentials for equipment failures may exist.
8. A review of the Plan must occur whenever changes in the facility happen that may impact the facility's chance to allow spills to reach navigable waters of the United States.

STORM WATER POLLUTION PREVENTION PLAN

Aggregate facilities that have a storm water point source discharge(s) to surface waters of the state are required to obtain an NPDES permit. This is usually accomplished via the State's NPDES General Permit Program found at 327 IAC 15-1. Aggregate facilities may be required to obtain NPDES General permits under Rule 5 for construction activities, under Rule 12 for Sand, Gravel, Dimension Stone or Crushed Stone Operations and/or under Rule 6 for Industrial Activities. See Chapter 6 for a more detailed discussion of the requirements for Storm Water discharge permitting. A requirement of these permits is to prepare a Storm Water Pollution Prevention Plan (SWPPP). Management practices for the potential pollutant sources including emergency contact information, a section concerning spill control and emergency response must be included in the SWPPP.

HAZARDOUS WASTE CONTINGENCY PLAN

Large Quantity Generators of hazardous waste are required to prepare a Hazardous Waste Contingency Plan for use in the event of a release of hazardous waste. The contingency plan must include identification of the waste materials and their characteristics, emergency contact information, emergency response information, an evacuation plan and a listing of emergency response equipment and resources. Most aggregate facilities will be classified as Small Quantity Generators of hazardous waste and therefore, will not be required to prepare a contingency plan.

RISK MANAGEMENT PROGRAM (RMP)

The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of the Clean Air Act (CAA) as a result of the amendments of 1990. As part of the CAA amendments, EPA was required to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The rule requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes the following information:

- Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases;
- Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and
- Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

By June 21, 1999, a summary of the facility's risk management program (known as a "Risk Management Plan" or "RMP") was to be submitted to EPA. The plans must be revised and resubmitted every five years.

The List of Regulated Substances under section 112(r) of the Clean Air Act is found in 40 CFR Part 68, Subpart F and lists the regulated substances, including their synonyms, and threshold quantities (in pounds) to help you assess if your process is subject to the RMP rule or the general duty clause.

States who have taken delegation of the Clean Air Act, Section 112(r) program may have additional requirements for the federally listed chemicals, and/or additional listed chemicals.

SPILL REPORTING

WHAT IS A SPILL?

A spill, as defined by 327 Indiana Administrative Code (IAC) 2-6.1, is any unexpected, unintended, abnormal, or unapproved dumping, leakage, drainage, seepage, discharge or other loss of oil, hazardous and/or otherwise objectionable substance which enters or threatens to enter the waters of the state.

Although a spill is defined in this regulation with particular emphasis toward the waters of the state, air emission releases must be reported in some instances. These will be discussed in the section of this chapter titled 'Indiana's Air Emission Malfunction Rule'. The current section only relates to spills impacting the waters of the state.

Good common sense should be used if a spill occurs on a facility's property which has the potential to injure or impact persons, neighbors, or the environment. If the spill presents an immediate danger to these entities, then the following steps should be implemented.

EMERGENCY SPILL REPORTING

Under 327 IAC 2-6.1-5 entitled "Reportable Spills; facility", the following spills from a facility must be reported:

- (1) Spills that damage the waters of the state so as to cause death or acute injury or illness to humans or animals.
- (2) Spills from a facility that has been notified in writing by a water utility that it is located in a delineated public water supply wellhead protection area as approved by the department under 327 IAC 8-4.1 that are:
 - (A) Spills of hazardous substances or extremely hazardous substances when the amount spilled exceeds one hundred (100) pounds or the reportable quantity, whichever is less;
 - (B) Spills of petroleum when the amount spilled exceeds fifty-five (55) gallons; or
 - (C) Spills of objectionable substances as defined in section 4(11) this rule.
- (3) Spills that damage waters of the state and that:
 - (A) Are located within fifty (50) feet of a known private drinking water well located beyond the facility property boundary; or
 - (B) Are located within 100 yards of:
 - (i) any high quality water designated as an outstanding state resource pursuant to 327 IAC 2-1-2(3), excluding Lake Michigan;
 - (ii) any water designated as exceptional use pursuant to 327 IAC 2-1-3(a)(6) and 327 IAC 2-1-11(b);
 - (iii) any water designated as capable of supporting a salmonid fishery pursuant to 327 IAC 2-1-6(c)(1), except Lake Michigan; or
 - (iv) any water that is a fish hatchery, fish and wildlife area, nature preserve, or recreational water owned by the department of natural resources or the federal government.
- (4) For any spill which does not meet the criteria in subdivisions (1) through (3), the following must be reported:
 - (A) Spills to surface waters:
 - (i) spills of hazardous substances or extremely hazardous substances when the amount spilled exceeds one hundred (100) pounds or the reportable quantity, whichever is less;
 - (ii) spills of petroleum of such quantity as to cause a sheen upon the waters; or
 - (iii) spills of objectionable substances as defined in section 4(11) of this rule.
 - (B) Spills to soil beyond the facility boundary:
 - (i) spills of hazardous substances or extremely hazardous substances when the amount spilled exceeds one hundred (100) pounds or the reportable quantity, whichever is less;
 - (ii) spills of petroleum when the amount spilled exceeds fifty-five (55) gallons; or
 - (iii) spills of objectionable substances as defined in section 4(11) of the rule.
 - (C) Spills to soil within the facility boundary:

- (i) spills of hazardous substances or extremely hazardous substances when the amount spilled exceeds the reportable quantity;
 - (ii) spills of petroleum when the spilled amount exceeds one thousand (1,000) gallons; or
 - (iii) spills of objectionable substances as defined in section 4(11) of this rule.
- (5) Any spill for which a spill response has not been done.

If the spill poses a fire hazard, threatens persons, or causes injury to persons, then the applicable SPCC Plan/Contingency Plan/RMP should immediately be activated. This may include calling:

1. 911
2. The local Fire Department
3. The local Police Department
4. The Local Emergency Planning Committee or County Health Department

Beyond the immediate concern of notifying the proper personnel, certain actions should be taken quickly once a spill occurs. These actions are described in 327 IAC 2-6.1-2, Indiana's requirements for Reporting of Spills, Containment and Clean-up. Requirements at the Federal level also exist and may need to be implemented in addition to Indiana's regulations. An explanation of these federal requirements will be discussed in the 'Federal Reporting Requirements' section of this chapter.

INDIANA'S SPILL REPORTING REQUIREMENTS

1. A reportable spill is one that causes a visible sheen on surface waters. Immediately report a spill that enters or threatens to enter waters of the state (including groundwater to the:

Environmental Response Section
Office of Land Quality
Department of Environmental Management
100 North Senate Avenue, Room N-1255
Indianapolis, Indiana 46204
(317) 233-7745

2. You should be prepared to provide the following information:
 - Location and time of the spill;
 - Identification of the substance spilled;
 - Quantity of substance that has been or may further be spilled;
 - Identification of the person making the spill report (name and title);
 - What measures have been or will be undertaken to contain and/or clean-up the spill.

3. Immediately notify the nearest downstream water user whenever possible and necessary.
4. Immediately contain the spill.
5. Clean up the spill as soon as possible using properly trained personnel.
6. Submit to the Environmental Response Section (ERS) written reports on the spill as required by a representative of the ERS.

There are also requirements for reporting releases from USTs. See Chapter 9 for details.

FEDERAL REPORTING REQUIREMENTS

As was mentioned previously, federal reporting requirements exist for regulated substances and hazardous substances spilled/released in excess of certain Reportable Quantities (RQ). These regulated substances are found at 40 CFR Section 302.4 (see [Attachment 2](#) for the list of substances and their RQs).

40 CFR Section 302 designates specific hazardous substances that, when spilled/released beyond a certain RQ, must be reported. The notification requirements of this report are as follows:

1. Any person in charge of a facility shall, as soon as he has knowledge of any release of a hazardous substance (other than a federally permitted release or application of a pesticide) from the facility in a quantity equal to or exceeding the reportable quantity (RQ) in any 24-hour period, immediately notify the:

National Response Center
1-800-424-8802

2. If a chemical that is a mixture is released, determine the quantity of the hazardous substance by estimating the percentage of the chemical that is a hazardous substance. For example: if you spill 5,000 gallons of a chemical that contains 10% toluene, first convert the gallons to pounds, using the Material Safety Data Sheet, then calculate the percentage that is toluene. If the chemical's density is 9 pounds/gallon, then:

$$\begin{aligned} 9 \text{ lbs/gal} \times 5,000 \text{ gal} &= 45,000 \text{ lbs} \\ 45,000 \text{ lbs} \times 0.10 (10\%) &= 4,500 \text{ lbs} \end{aligned}$$

So 4,500 pounds of toluene was released. Compare this to the RQ for toluene in [Attachment 2](#) to determine whether you must report this release.

REMEMBER: If the release is not reportable to the federal government, it still must be reported to the Office of Land Quality, Emergency Response Section (ERS) if the release enters or threatens to enter surface water or groundwater. For a spill of the size in the previous example, it

is highly likely it will enter surface or groundwater, and you should call. *If in doubt, make the call.*

Although the federal regulation has been cited for a complete perspective of spill reporting, it is believed that the most frequent spill/release reporting requirements will occur at the state level. A facility should, however, determine whether any substances they have on-site are found on the list in [Attachment 2](#). If it is observed that indeed a facility does have substances on-site above the thresholds on these lists, then they must be aware that stringent reporting and planning requirements are in effect at the federal level.

If it is possible that a large release could occur, it is strongly recommended that you enter into an agreement with a spill contractor that is able to respond to an emergency at your plant at any day or time. It is also strongly recommended that you coordinate emergency planning activities with your local fire department. Invite them to your plant and give them tours. Show them where your most hazardous areas are located.

EXAMPLE OF A PETROLEUM SPILL AT AN AGGREGATE PLANT

While refueling a truck with diesel fuel, a situation occurs where 75 gallons of diesel fuel are spilled onto the ground. Plant personnel could not act in time to prevent the spill from flowing into the stormwater drainage ditch. Some of the diesel fuel (approximately five gallons) made its way into the nearby creek. What actions should plant personnel take?

1. Assuming the flow has been stopped, one person should notify IDEM of the spill and report the required information, and at least two other individuals should take spill containment supplies (oil boom, absorbent mats) to the creek and soak up all the oil from the creek.
2. Any materials contaminated with fuel will be taken up and placed in containers (drums) for proper disposal.
3. A written report is made to IDEM if required.

INDIANA'S AIR EMISSION MALFUNCTION RULE

Earlier in this chapter a reference was made to air emission releases which also, like releases to land or water, have certain reporting requirements. These requirements are found within 326 IAC 1-6 and define the reporting requirements for malfunctions in Indiana. The regulation applies to the owner or operator of any facility required to obtain an air permit.

NOTICE OF MALFUNCTION

The rule requires the following items:

- Keep a record of all malfunctions, including startups or shutdowns, of any facility or emission control equipment which result in violations of applicable air pollution control regulations or applicable emission limitations.
- Records shall be retained for a period of three years.
- When a malfunction of any facility or emission control equipment occurs which lasts more than one hour, the malfunction shall be reported to the commissioner or his/her appointed representative. This will be the inspector assigned to your plant. Ask the inspector for his or her telephone number.
- Notification shall be made by telephone or fax, as soon as practicable, but in no event later than four daytime business hours after the beginning of the malfunction.

Be prepared to provide the following information:

1. Identification of the specific emission control device to be taken out of service.
2. The expected length of time that the emission control equipment will be out of service.
3. The nature and quantity of emissions of air contaminants likely to occur during the shutdown period.
4. Any measures, such as the use of off-shift labor or equipment, that will be utilized to minimize the length of the shutdown period.
5. Any reasons that shutdown of the operation during the maintenance period would be impossible, for example:
 - a. Continued operation is required to provide essential services, provided, however, that continued operations is not solely for the economic benefit of the owner or operator.
 - b. Continued operation is necessary to prevent injury to persons or severe damage to equipment.
6. A demonstration of interim control measures from the facility during the shutdown period.

RELEASE REPORTING UNDER THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) TITLE III

SARA Title III, also known as the Emergency Planning and Community Right-to-Know Act (EPCRA), contains requirements for emergency planning for facilities that manufacture, process, or otherwise use hazardous chemicals or extremely hazardous substances.

The following reporting requirements apply only to facilities regulated by OSHA. MSHA regulated facilities are exempt. However, many facilities file the reports in order to be good community citizens. Also, some counties are frequently adopting their own hazardous materials ordinances. These local jurisdictions may require reporting, planning, and secondary containment activities that exceed SPCC, EPCRA, or other state or federal regulations.

TIER I AND TIER II REPORTS

If a facility stores a chemical in the following quantities, that chemical will need to be included on the Tier II Report.

- 1.) Hazardous chemicals that are stored in excess of 10,000 lbs (pounds); and
- 2.) Extremely hazardous substances (EHSs) stored in excess of 500 lbs or the threshold planning quantity (TPQ), whichever is smaller. A list of all EHSs and their corresponding TPQ are included as [Attachment 2](#).

OSHA defines hazardous chemicals as those chemicals present in the workplace that are capable of causing harm. Hazardous chemicals are generally regarded as any material for which a MSDS is required.

The report is due on March 1 of **each** year and must include any chemical that was found on-site at any time in quantities exceeding these threshold quantities during the previous calendar year. Even if a chemical is no longer stored at the facility, it must be reported if it meets the reporting criteria and was on-site during the previous calendar year.

In the event that a mixture (i.e., paint) is reportable, there are two options:

- 1.) Calculating the quantity of hazardous chemicals in the mixture; or
- 2.) Report the total quantity of the mixture.

It is recommended that the total quantity of the mixture be reported, as a conservative approach. It also allows the local fire department to have a better idea of what is stored on site in the event of an emergency. As an example, assume that a facility stores 25,000 lbs of paint on-site. Also assume that the paint is comprised of 35% xylene and 30% toluene with the remainder being a mixture of chemicals (but no EHSs). This means that there are no chemicals on-site that exceed the 10,000 lb threshold (the paint would contain 8,750 lbs of xylene and 7,500 lbs of toluene). However, it is recommended that the paint mixture be reported since more than 10,000 lbs of paint is stored at the facility.

An inventory of all chemicals found on-site should be completed at the beginning of each year for the previous calendar year. Any chemical that was stored on-site in the past year in quantities exceeding the threshold quantity is a reportable chemical and must be included on the Tier II report.

After the reportable chemicals are identified, the following information must be obtained in order to complete the report:

- a. Is the chemical a solid, liquid or gas and is it pure or a mixture?
- b. Is the chemical an extremely hazardous substance?
- c. What are the physical and health hazards of the chemical? (i.e., fire, sudden release of pressure, reactivity, acute and/or chronic hazards?) This information can be obtained from the MSDS.
- d. What is the maximum daily amount of the chemical stored on-site?
- e. What is the average daily amount of the chemical stored on-site?
- f. How many days is the chemical stored on-site?
- g. In what type of container is the chemical stored (i.e., drum, tank, box, etc.)?
- h. What are the pressure and temperature conditions of the container (i.e., ambient, elevated, decreased, etc.)?
- i. Where is the material stored?

A site map showing the storage locations must also be prepared for submittal.

TOXIC RELEASE INVENTORY REPORTING

Section 313 of SARA Title III contains reporting requirements for “routine” emissions of toxic chemicals. Facilities that manufacture, process, or otherwise use chemicals on the list in excess of threshold planning quantities must file a report (Form R) by July 1 of every year. The report contains information about routine emissions of chemicals to the air, land, or water, and covers the previous calendar year.

You must submit a Form R if your plant:

1. Employs 10 or more people; and
2. Falls within SIC codes 20 through 39; and
3. Uses more than the threshold quantity of a listed toxic chemical during a calendar year.

Reports must be submitted to:

Via Regular Mail
TRI Data Processing Center
P.O. Box 1513
Lanham, MD 20703-1513
Attn: Toxic Chemical Release Inventory

or:

Via Certified or Overnight
TRI Data Processing Center
c/o Computer Sciences Corp.
Suite 300
8400 Corporate Drive
Landover, MD 20785-2294
Telephone: (301) 429-5005

and to:

IDEM
Office of Pollution Prevention and Technical Assistance
402 West Washington Street, Room W041
Indianapolis, IN 46204
Attn: TRI
1 (800) 988-7901

EPA's Form R and Instructions may be obtained by calling the RCRA hotline at 1-800-424-9346.

CONCLUSION

It is expected that the aggregates industry will deal primarily with spill reporting rules defined at the state level. Spill/release situations demand that good preparation (i.e., SPCC Plans) should already be in place before an emergency situation arises.

It is a good practice to identify all the different areas of your operation that could require notification of a regulatory agency. Once these are identified (air pollution equipment, oil tanks, oil/water separators), make a list of the areas, plan in advance who needs to be called and what needs to be done in an emergency.

CHAPTER 11 - ATTACHMENT 1
Requirements for an SPCC Plan

The following requirements for an SPCC plan are list in 40 CFR 112. Please note: as regulations are amended the e-CFR website is updated within a reasonable time period after publication in the Federal Register. For the most current version of the rule visit the following website <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=30ddf8732109f05385ae07d1c214f62c&rgn=div8&view=text&node=40:20.0.1.1.7.1.6.7&idno=40>

Data is current as of May 24, 2005.

§ 112.7 General requirements for Spill Prevention, Control, and Countermeasure Plans.

If you are the owner or operator of a facility subject to this part you must prepare a Plan in accordance with good engineering practices. The Plan must have the full approval of management at a level of authority to commit the necessary resources to fully implement the Plan. You must prepare the Plan in writing. If you do not follow the sequence specified in this section for the Plan, you must prepare an equivalent Plan acceptable to the Regional Administrator that meets all of the applicable requirements listed in this part, and you must supplement it with a section cross-referencing the location of requirements listed in this part and the equivalent requirements in the other prevention plan. If the Plan calls for additional facilities or procedures, methods, or equipment not yet fully operational, you must discuss these items in separate paragraphs, and must explain separately the details of installation and operational start-up. As detailed elsewhere in this section, you must also:

(a)(1) Include a discussion of your facility's conformance with the requirements listed in this part.

(2) Comply with all applicable requirements listed in this part. Your Plan may deviate from the requirements in paragraphs (g), (h)(2) and (3), and (i) of this section and the requirements in subparts B and C of this part, except the secondary containment requirements in paragraphs (c) and (h)(1) of this section, and §§112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), 112.12(c)(11), 112.13(c)(2), and 112.14(c), where applicable to a specific facility, if you provide equivalent environmental protection by some other means of spill prevention, control, or countermeasure. Where your Plan does not conform to the applicable requirements in paragraphs (g), (h)(2) and (3), and (i) of this section, or the requirements of subparts B and C of this part, except the secondary containment requirements in paragraphs (c) and (h)(1) of this section, and §§112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), 112.12(c)(11), 112.13(c)(2), and 112.14(c), you must state the reasons for nonconformance in your Plan and describe in detail alternate methods and how you will achieve equivalent environmental protection. If the Regional Administrator determines that the measures described in your Plan do not provide equivalent environmental protection, he may require that you amend your Plan, following the procedures in §112.4(d) and (e).

(3) Describe in your Plan the physical layout of the facility and include a facility diagram, which must mark the location and contents of each container. The facility diagram must include completely buried tanks that are otherwise exempted from the requirements of this part under §112.1(d)(4). The facility diagram must also include all transfer stations and connecting pipes. You must also address in your Plan:

- (i) The type of oil in each container and its storage capacity;
 - (ii) Discharge prevention measures including procedures for routine handling of products (loading, unloading, and facility transfers, *etc.*);
 - (iii) Discharge or drainage controls such as secondary containment around containers and other structures, equipment, and procedures for the control of a discharge;
 - (iv) Countermeasures for discharge discovery, response, and cleanup (both the facility's capability and those that might be required of a contractor);
 - (v) Methods of disposal of recovered materials in accordance with applicable legal requirements; and
 - (vi) Contact list and phone numbers for the facility response coordinator, National Response Center, cleanup contractors with whom you have an agreement for response, and all appropriate Federal, State, and local agencies who must be contacted in case of a discharge as described in §112.1(b).
- (4) Unless you have submitted a response plan under §112.20, provide information and procedures in your Plan to enable a person reporting a discharge as described in §112.1(b) to relate information on the exact address or location and phone number of the facility; the date and time of the discharge, the type of material discharged; estimates of the total quantity discharged; estimates of the quantity discharged as described in §112.1(b); the source of the discharge; a description of all affected media; the cause of the discharge; any damages or injuries caused by the discharge; actions being used to stop, remove, and mitigate the effects of the discharge; whether an evacuation may be needed; and, the names of individuals and/or organizations who have also been contacted.
- (5) Unless you have submitted a response plan under §112.20, organize portions of the Plan describing procedures you will use when a discharge occurs in a way that will make them readily usable in an emergency, and include appropriate supporting material as appendices.
- (b) Where experience indicates a reasonable potential for equipment failure (such as loading or unloading equipment, tank overflow, rupture, or leakage, or any other equipment known to be a source of a discharge), include in your Plan a prediction of the direction, rate of flow, and total quantity of oil which could be discharged from the facility as a result of each type of major equipment failure.
- (c) Provide appropriate containment and/or diversionary structures or equipment to prevent a discharge as described in §112.1(b). The entire containment system, including walls and floor, must be capable of containing oil and must be constructed so that any discharge from a primary containment system, such as a tank or pipe, will not escape the containment system before cleanup occurs. At a minimum, you must use one of the following prevention systems or its equivalent:

(1) For onshore facilities:

(i) Dikes, berms, or retaining walls sufficiently impervious to contain oil;

(ii) Curbing;

(iii) Culverting, gutters, or other drainage systems;

(iv) Weirs, booms, or other barriers;

(v) Spill diversion ponds;

(vi) Retention ponds; or

(vii) Sorbent materials.

(2) For offshore facilities:

(i) Curbing or drip pans; or

(ii) Sumps and collection systems.

(d) If you determine that the installation of any of the structures or pieces of equipment listed in paragraphs (c) and (h)(1) of this section, and §§112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), 112.12(c)(11), 112.13(c)(2), and 112.14(c) to prevent a discharge as described in §112.1(b) from any onshore or offshore facility is not practicable, you must clearly explain in your Plan why such measures are not practicable; for bulk storage containers, conduct both periodic integrity testing of the containers and periodic integrity and leak testing of the valves and piping; and, unless you have submitted a response plan under §112.20, provide in your Plan the following:

(1) An oil spill contingency plan following the provisions of part 109 of this chapter.

(2) A written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful.

(e) *Inspections, tests, and records.* Conduct inspections and tests required by this part in accordance with written procedures that you or the certifying engineer develop for the facility. You must keep these written procedures and a record of the inspections and tests, signed by the appropriate supervisor or inspector, with the SPCC Plan for a period of three years. Records of inspections and tests kept under usual and customary business practices will suffice for purposes of this paragraph.

(f) *Personnel, training, and discharge prevention procedures.* (1) At a minimum, train your oil-handling personnel in the operation and maintenance of equipment to prevent discharges;

discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and, the contents of the facility SPCC Plan.

(2) Designate a person at each applicable facility who is accountable for discharge prevention and who reports to facility management.

(3) Schedule and conduct discharge prevention briefings for your oil-handling personnel at least once a year to assure adequate understanding of the SPCC Plan for that facility. Such briefings must highlight and describe known discharges as described in §112.1(b) or failures, malfunctioning components, and any recently developed precautionary measures.

(g) *Security (excluding oil production facilities)*. (1) Fully fence each facility handling, processing, or storing oil, and lock and/or guard entrance gates when the facility is not in production or is unattended.

(2) Ensure that the master flow and drain valves and any other valves permitting direct outward flow of the container's contents to the surface have adequate security measures so that they remain in the closed position when in non-operating or non-standby status.

(3) Lock the starter control on each oil pump in the "off" position and locate it at a site accessible only to authorized personnel when the pump is in a non-operating or non-standby status.

(4) Securely cap or blank-flange the loading/unloading connections of oil pipelines or facility piping when not in service or when in standby service for an extended time. This security practice also applies to piping that is emptied of liquid content either by draining or by inert gas pressure.

(5) Provide facility lighting commensurate with the type and location of the facility that will assist in the:

(i) Discovery of discharges occurring during hours of darkness, both by operating personnel, if present, and by non-operating personnel (the general public, local police, etc.); and

(ii) Prevention of discharges occurring through acts of vandalism.

(h) *Facility tank car and tank truck loading/unloading rack (excluding offshore facilities)*. (1) Where loading/unloading area drainage does not flow into a catchment basin or treatment facility designed to handle discharges, use a quick drainage system for tank car or tank truck loading and unloading areas. You must design any containment system to hold at least the maximum capacity of any single compartment of a tank car or tank truck loaded or unloaded at the facility.

(2) Provide an interlocked warning light or physical barrier system, warning signs, wheel chocks, or vehicle break interlock system in loading/unloading areas to prevent vehicles from departing before complete disconnection of flexible or fixed oil transfer lines.

(3) Prior to filling and departure of any tank car or tank truck, closely inspect for discharges the lowermost drain and all outlets of such vehicles, and if necessary, ensure that they are tightened, adjusted, or replaced to prevent liquid discharge while in transit.

(i) If a field-constructed aboveground container undergoes a repair, alteration, reconstruction, or a change in service that might affect the risk of a discharge or failure due to brittle fracture or other catastrophe, or has discharged oil or failed due to brittle fracture failure or other catastrophe, evaluate the container for risk of discharge or failure due to brittle fracture or other catastrophe, and as necessary, take appropriate action.

(j) In addition to the minimal prevention standards listed under this section, include in your Plan a complete discussion of conformance with the applicable requirements and other effective discharge prevention and containment procedures listed in this part or any applicable more stringent State rules, regulations, and guidelines.

CHAPTER 11 - ATTACHMENT 2
List of Hazardous Substances and Reportable Quantities

The following List of Hazardous Substances and Reportable Quantities is available in 40 CFR 302.4. Please note: as regulations are amended the e-CFR website is updated within a reasonable time period after publication in the Federal Register. For the most current version of the rule and the List of Hazardous Substances and Reportable Quantities visit the following website <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=7fb8a39a841fcce3f16df502e2f89e2a&rgn=div8&view=text&node=40:26.0.1.1.2.0.1.4&idno=40>

Table 302.4 List of Hazardous Substances and Reportable Quantities

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous substance	CASRN	Statutory codedagger;	RCRA waste No.	Final RQ pounds (Kg)
Acenaphthene.....	83-32-9	2	.....	100 (45.4)
Acenaphthylene.....	208-96-8	2	.....	5000 (2270)
Acetaldehyde.....	75-07-0	1,3,4	U001	1000 (454)
Acetaldehyde, chloro-.....	107-20-0	4	P023	1000 (454)
Acetaldehyde, trichloro-.....	75-87-6	4	U034	5000 (2270)
Acetamide.....	60-35-5	3	.....	100 (45.4)
Acetamide, N-(aminothioxomethyl)-.....	591-08-2	4	P002	1000 (454)
Acetamide, N-(4-ethoxyphenyl)-.....	62-44-2	4	U187	100 (45.4)
Acetamide, N-9H-fluoren-2-yl-.....	53-96-3	3,4	U005	1 (0.454)
Acetamide, 2-fluoro-.....	640-19-7	4	P057	100 (45.4)
Acetic acid.....	64-19-7	1	.....	5000 (2270)
Acetic acid, (2,4-dichlorophenoxy)-, salts & esters.	94-75-7	1,3,4	U240	100 (45.4)
Acetic acid, ethyl ester.....	141-78-6	4	U112	5000 (2270)
Acetic acid, fluoro-, sodium salt.....	62-74-8	4	P058	10 (4.54)
Acetic acid, lead(2+) salt.....	301-04-2	1,4	U144	10 (4.54)
Acetic acid, thallium(1+) salt.....	563-68-8	4	U214	100 (45.4)
Acetic acid, (2,4,5-trichlorophenoxy)-.	93-76-5	1,4	See F027	1000 (454)
Acetic anhydride.....	108-24-7	1	.....	5000 (2270)
Acetone.....	67-64-1	4	U002	5000 (2270)
Acetone cyanohydrin.....	75-86-5	1,4	P069	10 (4.54)
Acetonitrile.....	75-05-8	3,4	U003	5000 (2270)
Acetophenone.....	98-86-2	3,4	U004	5000 (2270)
2-Acetylaminofluorene.....	53-96-3	3,4	U005	1 (0.454)
Acetyl bromide.....	506-96-7	1	.....	5000 (2270)
Acetyl chloride.....	75-36-5	1,4	U006	5000 (2270)
1-Acetyl-2-thiourea.....	591-08-2	4	P002	1000 (454)
Acrolein.....	107-02-8	1,2,3,4	P003	1 (0.454)

Acrylamide.....	79-06-1	3,4	U007	5000 (2270)
Acrylic acid.....	79-10-7	3,4	U008	5000 (2270)
Acrylonitrile.....	107-13-1	1,2,3,4	U009	100 (45.4)
Adipic acid.....	124-04-9	1	.....	5000 (2270)
Aldicarb.....	116-06-3	4	P070	1 (0.454)
Aldrin.....	309-00-2	1,2,4	P004	1 (0.454)
Allyl alcohol.....	107-18-6	1,4	P005	100 (45.4)
Allyl chloride.....	107-05-1	1,3	.....	1000 (454)
Aluminum phosphide.....	20859-73-8	4	P006	100 (45.4)
Aluminum sulfate.....	10043-01-3	1	.....	5000 (2270)
4-Aminobiphenyl.....	92-67-1	3	.....	1 (0.454)
5-(Aminomethyl)-3-isoxazolol.....	2763-96-4	4	P007	1000 (454)
4-Aminopyridine.....	504-24-5	4	P008	1000 (454)
Amitrole.....	61-82-5	4	U011	10 (4.54)
Ammonia.....	7664-41-7	1	.....	100 (45.4)
Ammonium acetate.....	631-61-8	1	.....	5000 (2270)
Ammonium benzoate.....	1863-63-4	1	.....	5000 (2270)
Ammonium bicarbonate.....	1066-33-7	1	.....	5000 (2270)
Ammonium bichromate.....	7789-09-5	1	.....	10 (4.54)
Ammonium bifluoride.....	1341-49-7	1	.....	100 (45.4)
Ammonium bisulfite.....	10192-30-0	1	.....	5000 (2270)
Ammonium carbamate.....	1111-78-0	1	.....	5000 (2270)
Ammonium carbonate.....	506-87-6	1	.....	5000 (2270)
Ammonium chloride.....	12125-02-9	1	.....	5000 (2270)
Ammonium chromate.....	7788-98-9	1	.....	10 (4.54)
Ammonium citrate, dibasic.....	3012-65-5	1	.....	5000 (2270)
Ammonium fluoborate.....	13826-83-0	1	.....	5000 (2270)
Ammonium fluoride.....	12125-01-8	1	.....	100 (45.4)
Ammonium hydroxide.....	1336-21-6	1	.....	1000 (454)
Ammonium oxalate.....	6009-70-7	1	.....	5000 (2270)
	5972-73-6			
	14258-49-2			
Ammonium picrate.....	131-74-8	4	P009	10 (4.54)
Ammonium silicofluoride.....	16919-19-0	1	.....	1000 (454)
Ammonium sulfamate.....	7773-06-0	1	.....	5000 (2270)
Ammonium sulfide.....	12135-76-1	1	.....	100 (45.4)
Ammonium sulfite.....	10196-04-0	1	.....	5000 (2270)
Ammonium tartrate.....	14307-43-8	1	.....	5000 (2270)
	3164-29-2			
Ammonium thiocyanate.....	1762-95-4	1	.....	5000 (2270)
Ammonium vanadate.....	7803-55-6	4	P119	1000 (454)

Amyl acetate.....	628-63-7	1	.....	5000 (2270)
iso-Amyl acetate.....	123-92-2			
sec-Amyl acetate.....	626-38-0			
tert-Amyl acetate.....	625-16-1			
Aniline.....	62-53-3	1,3,4	U012	5000 (2270)
o-Anisidine.....	90-04-0	3	.....	100 (45.4)
Anthracene.....	120-12-7	2	.....	5000 (2270)
Antimonydagger;dagger;.....	7440-36-0	2	.....	5000 (2270)
ANTIMONY AND COMPOUNDS.....	N.A.	2,3	.....	**
Antimony Compounds.....	N.A.	2,3	.....	**
Antimony pentachloride.....	7647-18-9	1	.....	1000 (454)
Antimony potassium tartrate.....	28300-74-5	1	.....	100 (45.4)
Antimony tribromide.....	7789-61-9	1	.....	1000 (454)
Antimony trichloride.....	10025-91-9	1	.....	1000 (454)
Antimony trifluoride.....	7783-56-4	1	.....	1000 (454)
Antimony trioxide.....	1309-64-4	1	.....	1000 (454)
Argentate(1-), bis(cyano-C)-, potassium	506-61-6	4	P099	1 (0.454)
Aroclor 1016.....	12674-11-2	1,2,3	.....	1 (0.454)
Aroclor 1221.....	11104-28-2	1,2,3	.....	1 (0.454)
Aroclor 1232.....	11141-16-5	1,2,3	.....	1 (0.454)
Aroclor 1242.....	53469-21-9	1,2,3	.....	1 (0.454)
Aroclor 1248.....	12672-29-6	1,2,3	.....	1 (0.454)
Aroclor 1254.....	11097-69-1	1,2,3	.....	1 (0.454)
Aroclor 1260.....	11096-82-5	1,2,3	.....	1 (0.454)
Aroclors.....	1336-36-3	1,2,3	.....	1 (0.454)
Arsenicdagger;dagger;.....	7440-38-2	2,3	.....	1 (0.454)
Arsenic acid H3AsO4.....	7778-39-4	4	P010	1 (0.454)
ARSENIC AND COMPOUNDS.....	N.A.	2,3	.....	**
Arsenic Compounds (inorganic including	N.A.	2,3	.....	**
arsine).				
Arsenic disulfide.....	1303-32-8	1	.....	1 (0.454)
Arsenic oxide As2O3.....	1327-53-3	1,4	P012	1 (0.454)
Arsenic oxide As2O5.....	1303-28-2	1,4	P011	1 (0.454)
Arsenic pentoxide.....	1303-28-2	1,4	P011	1 (0.454)
Arsenic trichloride.....	7784-34-1	1	.....	1 (0.454)
Arsenic trioxide.....	1327-53-3	1,4	P012	1 (0.454)
Arsenic trisulfide.....	1303-33-9	1	.....	1 (0.454)
Arsine, diethyl-.....	692-42-2	4	P038	1 (0.454)
Arsinic acid, dimethyl-.....	75-60-5	4	U136	1 (0.454)
Arsonous dichloride, phenyl-.....	696-28-6	4	P036	1 (0.454)
Asbestosdagger;dagger;dagger;.....	1332-21-4	2,3	.....	1 (0.454)

Auramine.....	492-80-8	4	U014	100 (45.4)
Azaserine.....	115-02-6	4	U015	1 (0.454)
Aziridine.....	151-56-4	3,4	P054	1 (0.454)
Aziridine, 2-methyl-.....	75-55-8	3,4	P067	1 (0.454)
Azirino[2',3':3,4]pyrrolo[1,2-a]indole- 4,7-dione, 6-amino-8-[[aminocarbonyl)oxy)methyl]- 1,1a,2,8,8a,8b- hexahydro-8a-methoxy-5- methyl-, [1aS- (1aalpha,8beta,8aalpha, 8balpha)]-.	50-07-7	4	U010	10 (4.54)
Barium cyanide.....	542-62-1	1,4	P013	10 (4.54)
Benz[j]aceanthrylene, 1,2-dihydro-3- methyl-.	56-49-5	4	U157	10 (4.54)
Benz[c]acridine.....	225-51-4	4	U016	100 (45.4)
Benzal chloride.....	98-87-3	4	U017	5000 (2270)
Benzamide, 3,5-dichloro-N-(1,1-dimethyl- 2propynyl)-.	23950-58-5	4	U192	5000 (2270)
Benz[a]anthracene.....	56-55-3	2,4	U018	10 (4.54)
1,2-Benzanthracene.....	56-55-3	2,4	U018	10 (4.54)
Benz[a]anthracene, 7,12-dimethyl-.....	57-97-6	4	U094	1 (0.454)
Benzenamine.....	62-53-3	1,3,4	U012	5000 (2270)
Benzenamine, 4,4'-carbonimidoylbis (N,N dimethyl-.	492-80-8	4	U014	100 (45.4)
Benzenamine, 4-chloro-.....	106-47-8	4	P024	1000 (454)
Benzenamine, 4-chloro-2-methyl-, hydrochloride.	3165-93-3	4	U049	100 (45.4)
Benzenamine, N,N-dimethyl-4-(phenylazo)- .	60-11-7	3,4	U093	10 (4.54)
Benzenamine, 2-methyl-.....	95-53-4	3,4	U328	100 (45.4)
Benzenamine, 4-methyl-.....	106-49-0	4	U353	100 (45.4)
Benzenamine, 4,4'-methylenebis [2- chloro-.	101-14-4	3,4	U158	10 (4.54)
Benzenamine, 2-methyl-,hydrochloride...	636-21-5	4	U222	100 (45.4)
Benzenamine, 2-methyl-5-nitro-.....	99-55-8	4	U181	100 (45.4)
Benzenamine, 4-nitro-.....	100-01-6	4	P077	5000 (2270)
Benzene a.....	71-43-2	1,2,3,4	U019	10 (4.54)
Benzenoacetic acid, 4-chloro- α -(4- chlorophenyl)- α -hydroxy-, ethyl ester.	510-15-6	3,4	U038	10 (4.54)
Benzene, 1-bromo-4-phenoxy-.....	101-55-3	2,4	U030	100 (45.4)
Benzenobutanoic acid, 4-[bis(2-	305-03-3	4	U035	10 (4.54)

chloroethyl) amino]-.				
Benzene, chloro-.....	108-90-7	1,2,3,4	U037	100 (45.4)
Benzene, (chloromethyl)-.....	100-44-7	1,3,4	P028	100 (45.4)
Benzenediamine, ar-methyl-.....	95-80-7	3,4	U221	10 (4.54)
	496-72-0			
	823-40-5			
	25376-45-8			
1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester.	117-81-7	2,3,4	U028	100 (45.4)
1,2-Benzenedicarboxylic acid, dibutyl ester.	84-74-2	1,2,3,4	U069	10 (4.54)
1,2-Benzenedicarboxylic acid, diethyl ester.	84-66-2	2,4	U088	1000 (454)
1,2-Benzenedicarboxylic acid, dimethyl ester.	131-11-3	2,3,4	U102	5000 (2270)
1,2-Benzenedicarboxylic acid, dioctyl ester.	117-84-0	2,4	U107	5000 (2270)
Benzene, 1,2-dichloro-.....	95-50-1	1,2,4	U070	100 (45.4)
Benzene, 1,3-dichloro-.....	541-73-1	2,4	U071	100 (45.4)
Benzene, 1,4-dichloro-.....	106-46-7	1,2,3,4	U072	100 (45.4)
Benzene, 1,1'-(2,2-dichloroethylidene) bis[4-chloro-.	72-54-8	1,2,4	U060	1 (0.454)
Benzene, (dichloromethyl)-.....	98-87-3	4	U017	5000 (2270)
Benzene, 1,3-diisocyanatomethyl-.....	91-08-7	3,4	U223	100 (45.4)
	584-84-9			
	26471-62-5			
Benzene, dimethyl-.....	1330-20-7	1,3,4	U239	100 (45.4)
1,3-Benzenediol.....	108-46-3	1,4	U201	5000 (2270)
1,2-Benzenediol, 4-[1-hydroxy-2-(methyl amino)ethyl]-.	51-43-4	4	P042	1000 (454)
Benzeneethanamine, alpha,alpha-dimethyl-	122-09-8	4	P046	5000 (2270)
.				
Benzene, hexachloro-.....	118-74-1	2,3,4	U127	10 (4.54)
Benzene, hexahydro-.....	110-82-7	1,4	U056	1000 (454)
Benzene, methyl-.....	108-88-3	1,2,3,4	U220	1000 (454)
Benzene, 1-methyl-2,4-dinitro-.....	121-14-2	1,2,3,4	U105	10 (4.54)
Benzene, 2-methyl-1,3-dinitro-.....	606-20-2	1,2,4	U106	100 (45.4)
Benzene, (1-methylethyl)-.....	98-82-8	3,4	U055	5000 (2270)
Benzene, nitro-.....	98-95-3	1,2,3,4	U169	1000 (454)
Benzene, pentachloro-.....	608-93-5	4	U183	10 (4.54)
Benzene, pentachloronitro-.....	82-68-8	3,4	U185	100 (45.4)

Benzenesulfonic acid chloride.....	98-09-9	4	U020	100 (45.4)
Benzenesulfonyl chloride.....	98-09-9	4	U020	100 (45.4)
Benzene,1,2,4,5-tetrachloro-.....	95-94-3	4	U207	5000 (2270)
Benzenethiol.....	108-98-5	4	P014	100 (45.4)
Benzene,1,1'-(2,2,2-trichloroethylidene) bis[4-chloro-.	50-29-3	1,2,4	U061	1 (0.454)
Benzene,1,1'-(2,2,2-trichloroethylidene) bis[4-methoxy-.	72-43-5	1,3,4	U247	1 (0.454)
Benzene, (trichloromethyl)-.....	98-07-7	3,4	U023	10 (4.54)
Benzene, 1,3,5-trinitro-.....	99-35-4	4	U234	10 (4.54)
Benzidine.....	92-87-5	2,3,4	U021	1 (0.454)
1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide, & salts.	81-07-2	4	U202	100 (45.4)
Benzo[a]anthracene.....	56-55-3	2,4	U018	10 (4.54)
1,3-Benzodioxole, 5-(1-propenyl)-1.....	120-58-1	4	U141	100 (45.4)
1,3-Benzodioxole, 5-(2-propenyl)-.....	94-59-7	4	U203	100 (45.4)
1,3-Benzodioxole, 5-propyl-.....	94-58-6	4	U090	10 (4.54)
1,3-Benzodioxol-4-ol, 2,2-dimethyl-, (Bendiocarb phenol).	22961-82-6	4	U364	##
1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate (Bendiocarb).	22781-23-3	4	U278	##
Benzo[b]fluoranthene.....	205-99-2	2	.....	1 (0.454)
Benzo(k)fluoranthene.....	207-08-9	2	.....	5000 (2270)
7-Benzofuranol, 2,3-dihydro-2,2-dimethyl- (Carbofuran phenol).	1563-38-8	4	U367	##
7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-, methylcarbamate.	1563-66-2	1,4	P127	10 (4.54)
Benzoic acid.....	65-85-0	1	.....	5000 (2270)
Benzoic acid, 2-hydroxy-, compd. with (3aS- cis)-1,2,3,3a,8,8a- hexahydro-1,3a,8- trimethylpyrrolo [2,3- b]indol-5-yl methylcarbamate ester (1:1) (Physostigmine salicylate).	57-64-7	4	P188	##
Benzonitrile.....	100-47-0	1	.....	5000 (2270)
Benzo[rs]pentaphene.....	189-55-9	4	U064	10 (4.54)
Benzo[ghi]perylene.....	191-24-2	2	.....	5000 (2270)
2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo- 1-phenylbutyl)-, & salts.	81-81-2	4	P001	100 (45.4)
			U248	
Benzo[a]pyrene.....	50-32-8	2,4	U022	1 (0.454)
3,4-Benzopyrene.....	50-32-8	2,4	U022	1 (0.454)
p-Benzoquinone.....	106-51-4	3,4	U197	10 (4.54)

Benzotrichloride.....	98-07-7	3,4	U023	10 (4.54)
Benzoyl chloride.....	98-88-4	1	.....	1000 (454)
Benzyl chloride.....	100-44-7	1,3,4	P028	100 (45.4)
Beryllium dagger;dagger;.....	7440-41-7	2,3,4	P015	10 (4.54)
BERYLLIUM AND COMPOUNDS.....	N.A.	2,3	.....	**
Beryllium chloride.....	7787-47-5	1	.....	1 (0.454)
Beryllium compounds.....	N.A.	2,3	.....	**
Beryllium fluoride.....	7787-49-7	1	.....	1 (0.454)
Beryllium nitrate.....	13597-99-4	1	.....	1 (0.454)
	7787-55-5			
Beryllium powder dagger;dagger;.....	7440-41-7	2,3,4	P015	10 (4.54)
alpha-BHC.....	319-84-6	2	.....	10 (4.54)
beta-BHC.....	319-85-7	2	.....	1 (0.454)
delta-BHC.....	319-86-8	2	.....	1 (0.454)
gamma-BHC.....	58-89-9	1,2,3,4	U129	1 (0.454)
2,2[prime]-Bioxirane.....	1464-53-5	4	U085	10 (4.54)
Biphenyl.....	92-52-4	3	.....	100 (45.4)
[1,1[prime]-Biphenyl]-4,4[prime]- diamine.	92-87-5	2,3,4	U021	1 (0.454)
[1,1[prime]-Biphenyl]-4,4[prime]- diamine,3,3[prime]-dichloro-.	91-94-1	2,3,4	U073	1 (0.454)
[1,1[prime]-Biphenyl]-4,4[prime]- diamine,3,3[prime]-dimethoxy-.	119-90-4	3,4	U091	100 (45.4)
[1,1[prime]-Biphenyl]-4,4[prime]- diamine,3,3[prime]-dimethyl-.	119-93-7	3,4	U095	10 (4.54)
Bis(2-chloroethoxy) methane.....	111-91-1	2,4	U024	1000 (454)
Bis(2-chloroethyl) ether.....	111-44-4	2,3,4	U025	10 (4.54)
Bis(chloromethyl) ether.....	542-88-1	2,3,4	P016	10 (4.54)
Bis(2-ethylhexyl) phthalate.....	117-81-7	3,4	U028	100 (45.4)
Bromoacetone.....	598-31-2	4	P017	1000 (454)
Bromoform.....	75-25-2	2,3,4	U225	100 (45.4)
Bromomethane.....	74-83-9	2,3,4	U029	1000 (454)
4-Bromophenyl phenyl ether.....	101-55-3	2,4	U030	100 (45.4)
Brucine.....	357-57-3	4	P018	100 (45.4)
1,3-Butadiene.....	106-99-0	3	.....	10 (4.54)
1,3-Butadiene, 1,1,2,3,4,4-hexachloro-.	87-68-3	2,3,4	U128	1 (0.454)
1-Butanamine, N-butyl-N-nitroso-.....	924-16-3	4	U172	10 (4.54)
1-Butanol.....	71-36-3	4	U031	5000 (2270)
2-Butanone.....	78-93-3	3,4	U159	5000 (2270)
2-Butanone, 3,3-dimethyl-1(methylthio)- , O-[(methylamino)carbonyl] oxime.	39196-18-4	4	P045	100 (45.4)

2-Butanone peroxide.....	1338-23-4	4	U160	10 (4.54)
2-Butenal.....	123-73-9	1,4	U053	100 (45.4)
	4170-30-3			
2-Butene, 1,4-dichloro-.....	764-41-0	4	U074	1 (0.454)
2-Butenoic acid, 2-methyl-, 7-[[2,3- dihydroxy-2-(1-methoxyethyl)-3- methyl- 1-oxobutoxy] methyl]-2,3, 5,7a- tetrahydro- 1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z), 7(2S*,3R*),7aalpha]]-.	303-34-4	4	U143	10 (4.54)
Butyl acetate.....	123-86-4	1	.....	5000 (2270)
iso-Butyl acetate.....	110-19-0			
sec-Butyl acetate.....	105-46-4			
tert-Butyl acetate.....	540-88-5			
n-Butyl alcohol.....	71-36-3	4	U031	5000 (2270)
Butylamine.....	109-73-9	1	.....	1000 (454)
iso-Butylamine.....	78-81-9			
sec-Butylamine.....	513-49-5			
	13952-84-6			
tert-Butylamine.....	75-64-9			
Butyl benzyl phthalate.....	85-68-7	2	.....	100 (45.4)
n-Butyl phthalate.....	84-74-2	1,2,3,4	U069	10 (4.54)
Butyric acid.....	107-92-6	1	.....	5000 (2270)
iso-Butyric acid.....	79-31-2			
Cacodylic acid.....	75-60-5	4	U136	1 (0.454)
Cadmium dagger;dagger;.....	7440-43-9	2	.....	10 (4.54)
Cadmium acetate.....	543-90-8	1	.....	10 (4.54)
CADMIUM AND COMPOUNDS.....	N.A.	2,3	.....	**
Cadmium bromide.....	7789-42-6	1	.....	10 (4.54)
Cadmium chloride.....	10108-64-2	1	.....	10 (4.54)
Cadmium compounds.....	N.A.	2,3	.....	**
Calcium arsenate.....	7778-44-1	1	.....	1 (0.454)
Calcium arsenite.....	52740-16-6	1	.....	1 (0.454)
Calcium carbide.....	75-20-7	1	.....	10 (4.54)
Calcium chromate.....	13765-19-0	1,4	U032	10 (4.54)
Calcium cyanamide.....	156-62-7	3	.....	1000 (454)
Calcium cyanide Ca(CN)2.....	592-01-8	1,4	P021	10 (4.54)
Calcium dodecylbenzenesulfonate.....	26264-06-2	1	.....	1000 (454)
Calcium hypochlorite.....	7778-54-3	1	.....	10 (4.54)
Captan.....	133-06-2	1,3	.....	10 (4.54)
Carbamic acid, 1H-benzimidazol-2-yl, methyl ester (Carbendazim).	10605-21-7	4	U372	##

Carbamic acid, [1- [(butylamino)carbonyl]-1H-benzimidazol- 2-yl]-, methyl ester (Benomyl).	17804-35-2	4	U271	##
Carbamic acid, (3-chlorophenyl)-, 4- chloro-2-butynyl ester (Barban).	101-27-9	4	U280	##
Carbamic acid, [(dibutylamino)thio]methyl-, 2,3- dihydro-2,2-dimethyl-7-benzofuranyl ester (Carbosulfan).	55285-14-8	4	P189	##
Carbamic acid, dimethyl-,1- [(dimethylamino)carbonyl]-5-methyl-1H- pyrazol-3-yl ester (Dimetilan).	644-64-4	4	P191	##
Carbamic acid, dimethyl-, 3-methyl-1-(1- methylethyl)-1H-pyrazol-5-yl ester (Isolan).	119-38-0	4	P192	##
Carbamic acid, ethyl ester.....	51-79-6	3,4	U238	100 (45.4)
Carbamic acid, methyl-, 3-methylphenyl ester (Metolcarb).	1129-41-5	4	P190	##
Carbamic acid, methylnitroso-, ethyl ester.	615-53-2	4	U178	1 (0.454)
Carbamic acid, [1,2- phenylenebis(iminocarbonothioyl)] bis- , dimethyl ester (Thiophanate-methyl).	23564-05-8	4	U409	##
Carbamic acid, phenyl-, 1-methylethyl ester (Propham).	122-42-9	4	U373	##
Carbamic chloride, dimethyl-.....	79-44-7	3,4	U097	1 (0.454)
Carbamodithioic acid, 1,2-ethanediybis- , salts & esters.	111-54-6	4	U114	5000 (2270)
Carbamothioic acid, bis(1-methylethyl)- , S-(2,3-dichloro-2-propenyl) ester.	2303-16-4	4	U062	100 (45.4)
Carbamothioic acid, bis(1-methylethyl)- , S-(2,3,3-trichloro-2-propenyl) ester (Triallate).	2303-17-5	4	U389	##
Carbamothioic acid, dipropyl-, S - (phenylmethyl) ester (Prosulfocarb).	52888-80-9	4	U387	##
Carbaryl.....	63-25-2	1,3,4	U279	100 (45.4)
Carbofuran.....	1563-66-2	1,4	P127	10 (4.54)
Carbon disulfide.....	75-15-0	1,3,4	P022	100 (45.4)
Carbonic acid, dithallium(1+) salt.....	6533-73-9	4	U215	100 (45.4)
Carbonic dichloride.....	75-44-5	1,3,4	P095	10 (4.54)
Carbonic difluoride.....	353-50-4	4	U033	1000 (454)

Carbonochloridic acid, methyl ester....	79-22-1	4	U156	1000 (454)
Carbon oxyfluoride.....	353-50-4	4	U033	1000 (454)
Carbon tetrachloride.....	56-23-5	1,2,3,4	U211	10 (4.54)
Carbonyl sulfide.....	463-58-1	3	.....	100 (45.4)
Catechol.....	120-80-9	3	.....	100 (45.4)
Chloral.....	75-87-6	4	U034	5000 (2270)
Chloramben.....	133-90-4	3	.....	100 (45.4)
Chlorambucil.....	305-03-3	4	U035	10 (4.54)
Chlordane.....	57-74-9	1,2,3,4	U036	1 (0.454)
Chlordane, alpha & gamma isomers...	57-74-9	1,2,3,4	U036	1 (0.454)
CHLORDANE (TECHNICAL MIXTURE AND METABOLITES) .	57-74-9	1,2,3,4	U036	1 (0.454)
CHLORINATED BENZENES.....	N.A.	2	.....	**
Chlorinated camphene.....	8001-35-2	1,2,3,4	P123	1 (0.454)
CHLORINATED ETHANES.....	N.A.	2	.....	**
CHLORINATED NAPHTHALENE.....	N.A.	2	.....	**
CHLORINATED PHENOLS.....	N.A.	2	.....	**
Chlorine.....	7782-50-5	1,3	.....	10 (4.54)
Chlornaphazine.....	494-03-1	4	U026	100 (45.4)
Chloroacetaldehyde.....	107-20-0	4	P023	1000 (454)
Chloroacetic acid.....	79-11-8	3	.....	100 (45.4)
2-Chloroacetophenone.....	532-27-4	3	.....	100 (45.4)
CHLOROALKYL ETHERS.....	N.A.	2	.....	**
p-Chloroaniline.....	106-47-8	4	P024	1000 (454)
Chlorobenzene.....	108-90-7	1,2,3,4	U037	100 (45.4)
Chlorobenzilate.....	510-15-6	3,4	U038	10 (4.54)
p-Chloro-m-cresol.....	59-50-7	2,4	U039	5000 (2270)
Chlorodibromomethane.....	124-48-1	2	.....	100 (45.4)
1-Chloro-2,3-epoxypropane.....	106-89-8	1,3,4	U041	100 (45.4)
Chloroethane.....	75-00-3	2,3	.....	100 (45.4)
2-Chloroethyl vinyl ether.....	110-75-8	2,4	U042	1000 (454)
Chloroform.....	67-66-3	1,2,3,4	U044	10 (4.54)
Chloromethane.....	74-87-3	2,3,4	U045	100 (45.4)
Chloromethyl methyl ether.....	107-30-2	3,4	U046	10 (4.54)
beta-Chloronaphthalene.....	91-58-7	2,4	U047	5000 (2270)
2-Chloronaphthalene.....	91-58-7	2,4	U047	5000 (2270)
2-Chlorophenol.....	95-57-8	2,4	U048	100 (45.4)
o-Chlorophenol.....	95-57-8	2,4	U048	100 (45.4)
4-Chlorophenyl phenyl ether.....	7005-72-3	2	.....	5000 (2270)
1-(o-Chlorophenyl) thiourea.....	5344-82-1	4	P026	100 (45.4)
Chloroprene.....	126-99-8	3	.....	100 (45.4)

3-Chloropropionitrile.....	542-76-7	4	P027	1000 (454)
Chlorosulfonic acid.....	7790-94-5	1	.....	1000 (454)
4-Chloro-o-toluidine, hydrochloride....	3165-93-3	4	U049	100 (45.4)
Chlorpyrifos.....	2921-88-2	1	.....	1 (0.454)
Chromic acetate.....	1066-30-4	1	.....	1000 (454)
Chromic acid.....	11115-74-5	1	.....	10 (4.54)
	7738-94-5			
Chromic acid H2CrO4, calcium salt.....	13765-19-0	1,4	U032	10 (4.54)
Chromic sulfate.....	10101-53-8	1	.....	1000 (454)
Chromium dagger;dagger;.....	7440-47-3	2	.....	5000 (2270)
CHROMIUM AND COMPOUNDS.....	N.A.	2,3	.....	**
Chromium Compounds.....	N.A.	2,3	.....	**
Chromous chloride.....	10049-05-5	1	.....	1000 (454)
Chrysene.....	218-01-9	2,4	U050	100 (45.4)
Cobalt Compounds.....	N.A.	3	.....	**
Cobaltous bromide.....	7789-43-7	1	.....	1000 (454)
Cobaltous formate.....	544-18-3	1	.....	1000 (454)
Cobaltous sulfamate.....	14017-41-5	1	.....	1000 (454)
Coke Oven Emissions.....	N.A.	3	.....	1 (0.454)
Copper dagger;dagger;.....	7440-50-8	2	.....	5000 (2270)
COPPER AND COMPOUNDS.....	N.A.	2	.....	**
Copper cyanide Cu(CN).....	544-92-3	4	P029	10 (4.54)
Coumaphos.....	56-72-4	1	.....	10 (4.54)
Creosote.....	N.A.	4	U051	1 (0.454)
Cresol (cresylic acid).....	1319-77-3	1,3,4	U052	100 (45.4)
m-Cresol.....	108-39-4	3	.....	100 (45.4)
o-Cresol.....	95-48-7	3	.....	100 (45.4)
p-Cresol.....	106-44-5	3	.....	100 (45.4)
Cresols (isomers and mixture).....	1319-77-3	1,3,4	U052	100 (45.4)
Cresylic acid (isomers and mixture)....	1319-77-3	1,3,4	U052	100 (45.4)
Crotonaldehyde.....	123-73-9	1,4	U053	100 (45.4)
	4170-30-3			
Cumene.....	98-82-8	3,4	U055	5000 (2270)
Cupric acetate.....	142-71-2	1	.....	100 (45.4)
Cupric acetoarsenite.....	12002-03-8	1	.....	1 (0.454)
Cupric chloride.....	7447-39-4	1	.....	10 (4.54)
Cupric nitrate.....	3251-23-8	1	.....	100 (45.4)
Cupric oxalate.....	5893-66-3	1	.....	100 (45.4)
Cupric sulfate.....	7758-98-7	1	.....	10 (4.54)
Cupric sulfate, ammoniated.....	10380-29-7	1	.....	100 (45.4)
Cupric tartrate.....	815-82-7	1	.....	100 (45.4)

Cyanide Compounds.....	N.A.	2, 3	.....	**
CYANIDES.....	N.A.	2, 3	.....	**
Cyanides (soluble salts and complexes) not otherwise specified.	N.A.	4	P030	10 (4.54)
Cyanogen.....	460-19-5	4	P031	100 (45.4)
Cyanogen bromide (CN)Br.....	506-68-3	4	U246	1000 (454)
Cyanogen chloride (CN)Cl.....	506-77-4	1, 4	P033	10 (4.54)
2,5-Cyclohexadiene-1,4-dione.....	106-51-4	3, 4	U197	10 (4.54)
Cyclohexane.....	110-82-7	1, 4	U056	1000 (454)
Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1 α , 2 α , 3 β -, 4 α , 5 α , 6 β).	58-89-9	1, 2, 3, 4	U129	1 (0.454)
Cyclohexanone.....	108-94-1	4	U057	5000 (2270)
2-Cyclohexyl-4,6-dinitrophenol.....	131-89-5	4	P034	100 (45.4)
1,3-Cyclopentadiene, 1,2,3,4,5,5- hexachloro-.	77-47-4	1, 2, 3, 4	U130	10 (4.54)
Cyclophosphamide.....	50-18-0	4	U058	10 (4.54)
2,4-D Acid.....	94-75-7	1, 3, 4	U240	100 (45.4)
2,4-D Ester.....	94-11-1	1	.....	100 (45.4)
	94-79-1			
	94-80-4			
	1320-18-9			
	1928-38-7			
	1928-61-6			
	1929-73-3			
	2971-38-2			
	25168-26-7			
	53467-11-1			
2,4-D, salts and esters.....	94-75-7	1, 3, 4	U240	100 (45.4)
Daunomycin.....	20830-81-3	4	U059	10 (4.54)
DDD.....	72-54-8	1, 2, 4	U060	1 (0.454)
4,4[prime]-DDD.....	72-54-8	1, 2, 4	U060	1 (0.454)
DDE b.....	72-55-9	2	.....	1 (0.454)
DDE b.....	3547-04-4	3	.....	5000 (2270)
4,4[prime]-DDE.....	72-55-9	2	.....	1 (0.454)
DDT.....	50-29-3	1, 2, 4	U061	1 (0.454)
4,4[prime]-DDT.....	50-29-3	1, 2, 4	U061	1 (0.454)
DDT AND METABOLITES.....	N.A.	2	.....	**
DEHP.....	117-81-7	2, 3, 4	U028	100 (45.4)
Diallate.....	2303-16-4	4	U062	100 (45.4)
Diazinon.....	333-41-5	1	.....	1 (0.454)

Diazomethane.....	334-88-3	3	.....	100 (45.4)
Dibenz[a,h]anthracene.....	53-70-3	2,4	U063	1 (0.454)
1,2:5,6-Dibenzanthracene.....	53-70-3	2,4	U063	1 (0.454)
Dibenzo[a,h]anthracene.....	53-70-3	2,4	U063	1 (0.454)
Dibenzofuran.....	132-64-9	3	.....	100 (45.4)
Dibenzo[a,i]pyrene.....	189-55-9	4	U064	10 (4.54)
1,2-Dibromo-3-chloropropane.....	96-12-8	3,4	U066	1 (0.454)
Dibromoethane.....	106-93-4	1,3,4	U067	1 (0.454)
Dibutyl phthalate.....	84-74-2	1,2,3,4	U069	10 (4.54)
Di-n-butyl phthalate.....	84-74-2	1,2,3,4	U069	10 (4.54)
Dicamba.....	1918-00-9	1	.....	1000 (454)
Dichlobenil.....	1194-65-6	1	.....	100 (45.4)
Dichlone.....	117-80-6	1	.....	1 (0.454)
Dichlorobenzene.....	25321-22-6	1	.....	100 (45.4)
1,2-Dichlorobenzene.....	95-50-1	1,2,4	U070	100 (45.4)
1,3-Dichlorobenzene.....	541-73-1	2,4	U071	100 (45.4)
1,4-Dichlorobenzene.....	106-46-7	1,2,3,4	U072	100 (45.4)
m-Dichlorobenzene.....	541-73-1	2,4	U071	100 (45.4)
o-Dichlorobenzene.....	95-50-1	1,2,4	U070	100 (45.4)
p-Dichlorobenzene.....	106-46-7	1,2,3,4	U072	100 (45.4)
DICHLOROBENZIDINE.....	N.A.	2	.....	**
3,3[prime]-Dichlorobenzidine.....	91-94-1	2,3,4	U073	1 (0.454)
Dichlorobromomethane.....	75-27-4	2	.....	5000 (2270)
1,4-Dichloro-2-butene.....	764-41-0	4	U074	1 (0.454)
Dichlorodifluoromethane.....	75-71-8	4	U075	5000 (2270)
1,1-Dichloroethane.....	75-34-3	2,3,4	U076	1000 (454)
1,2-Dichloroethane.....	107-06-2	1,2,3,4	U077	100 (45.4)
1,1-Dichloroethylene.....	75-35-4	1,2,3,4	U078	100 (45.4)
1,2-Dichloroethylene.....	156-60-5	2,4	U079	1000 (454)
Dichloroethyl ether.....	111-44-4	2,3,4	U025	10 (4.54)
Dichloroisopropyl ether.....	108-60-1	2,4	U027	1000 (454)
Dichloromethane.....	75-09-2	2,3,4	U080	1000 (454)
Dichloromethoxyethane.....	111-91-1	2,4	U024	1000 (454)
Dichloromethyl ether.....	542-88-1	2,3,4	P016	10 (4.54)
2,4-Dichlorophenol.....	120-83-2	2,4	U081	100 (45.4)
2,6-Dichlorophenol.....	87-65-0	4	U082	100 (45.4)
Dichlorophenylarsine.....	696-28-6	4	P036	1 (0.454)
Dichloropropane.....	26638-19-7	1	.....	1000 (454)
1,1-Dichloropropane.....	78-99-9			
1,3-Dichloropropane.....	142-28-9			
1,2-Dichloropropane.....	78-87-5	1,2,3,4	U083	1000 (454)

Dichloropropane_Dichloropropene (mixture).	8003-19-8	1	.....	100 (45.4)
Dichloropropene.....	26952-23-8	1	.....	100 (45.4)
2,3-Dichloropropene.....	78-88-6			
1,3-Dichloropropene.....	542-75-6	1,2,3,4	U084	100 (45.4)
2,2-Dichloropropionic acid.....	75-99-0	1	.....	5000 (2270)
Dichlorvos.....	62-73-7	1,3	.....	10 (4.54)
Dicofol.....	115-32-2	1	.....	10 (4.54)
Dieldrin.....	60-57-1	1,2,4	P037	1 (0.454)
1,2:3,4-Diepoxybutane.....	1464-53-5	4	U085	10 (4.54)
Diethanolamine.....	111-42-2	3	.....	100 (45.4)
Diethylamine.....	109-89-7	1	.....	100 (45.4)
N,N-Diethylaniline.....	91-66-7	3	.....	1000 (454)
Diethylarsine.....	692-42-2	4	P038	1 (0.454)
1,4-Diethyleneoxide.....	123-91-1	3,4	U108	100 (45.4)
Diethylhexyl phthalate.....	117-81-7	2,3,4	U028	100 (45.4)
N,N[prime]-Diethylhydrazine.....	1615-80-1	4	U086	10 (4.54)
O,O-Diethyl S-methyl dithiophosphate...	3288-58-2	4	U087	5000 (2270)
Diethyl-p-nitrophenyl phosphate.....	311-45-5	4	P041	100 (45.4)
Diethyl phthalate.....	84-66-2	2,4	U088	1000 (454)
O,O-Diethyl O-pyrazinyl phosphorothioate.	297-97-2	4	P040	100 (45.4)
Diethylstilbestrol.....	56-53-1	4	U089	1 (0.454)
Diethyl sulfate.....	64-67-5	3	.....	10 (4.54)
Dihydrosafrole.....	94-58-6	4	U090	10 (4.54)
Diisopropylfluorophosphate (DFP).....	55-91-4	4	P043	100 (45.4)
1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a- hexahydro-, (1alpha,4alpha,4abeta,5alpha, 8alpha,8abeta)-.	309-00-2	1,2,4	P004	1 (0.454)
1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro- 1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta, 5beta,8beta,8abeta)-.	465-73-6	4	P060	1 (0.454)
2,7:3,6-Dimethanonaphth[2,3- b]oxirene,3,4,5,6,9,9- hexachloro- 1a,2,2a,3,6,6a,7,7a- octahydro- , (1aalpha,2beta, 2aalpha,3beta,6beta,6aalpha,	60-57-1	1,2,4	P037	1 (0.454)

7beta,7aalpha)-.				
2,7:3,6-Dimethanonaphth[2, 3-b]oxirene,3,4,5,6,9,9- hexachloro-1a,2,2a,3,6,6a,7,7a- octahydro-, (1aalpha,2beta, 2abeta,3alpha,6alpha,6abeta,7beta,7aalpha)-, & metabolites.	72-20-8	1,2,4	P051	1 (0.454)
Dimethoate.....	60-51-5	4	P044	10 (4.54)
3,3[prime]-Dimethoxybenzidine.....	119-90-4	3,4	U091	100 (45.4)
Dimethylamine.....	124-40-3	1,4	U092	1000 (454)
Dimethyl aminoazobenzene.....	60-11-7	3,4	U093	10 (4.54)
p-Dimethylaminoazobenzene.....	60-11-7	3,4	U093	10 (4.54)
N,N-Dimethylaniline.....	121-69-7	3	.....	100 (45.4)
7,12-Dimethylbenz[a]anthracene.....	57-97-6	4	U094	1 (0.454)
3,3[prime]-Dimethylbenzidine.....	119-93-7	3,4	U095	10 (4.54)
alpha,alpha-Dimethylbenzylhydroperoxide	80-15-9	4	U096	10 (4.54)
Dimethylcarbamoyl chloride.....	79-44-7	3,4	U097	1 (0.454)
Dimethylformamide.....	68-12-2	3	.....	100 (45.4)
1,1-Dimethylhydrazine.....	57-14-7	3,4	U098	10 (4.54)
1,2-Dimethylhydrazine.....	540-73-8	4	U099	1 (0.454)
alpha,alpha-Dimethylphenethylamine.....	122-09-8	4	P046	5000 (2270)
2,4-Dimethylphenol.....	105-67-9	2,4	U101	100 (45.4)
Dimethyl phthalate.....	131-11-3	2,3,4	U102	5000 (2270)
Dimethyl sulfate.....	77-78-1	3,4	U103	100 (45.4)
Dinitrobenzene (mixed).....	25154-54-5	1	.....	100 (45.4)
m-Dinitrobenzene.....	99-65-0			
o-Dinitrobenzene.....	528-29-0			
p-Dinitrobenzene.....	100-25-4			
4,6-Dinitro-o-cresol, and salts.....	534-52-1	2,3,4	P047	10 (4.54)
Dinitrophenol.....	25550-58-7	1	.....	10 (4.54)
2,5-Dinitrophenol.....	329-71-5			
2,6-Dinitrophenol.....	573-56-8			
2,4-Dinitrophenol.....	51-28-5	1,2,3,4	P048	10 (4.54)
Dinitrotoluene.....	25321-14-6	1,2	.....	10 (4.54)
3,4-Dinitrotoluene.....	610-39-9			
2,4-Dinitrotoluene.....	121-14-2	1,2,3,4	U105	10 (4.54)
2,6-Dinitrotoluene.....	606-20-2	1,2,4	U106	100 (45.4)
Dinoseb.....	88-85-7	4	P020	1000 (454)
Di-n-octyl phthalate.....	117-84-0	2,4	U107	5000 (2270)
1,4-Dioxane.....	123-91-1	3,4	U108	100 (45.4)
DIPHENYLHYDRAZINE.....	N.A.	2	.....	**

1,2-Diphenylhydrazine.....	122-66-7	2,3,4	U109	10 (4.54)
Diphosphoramidate, octamethyl-.....	152-16-9	4	P085	100 (45.4)
Diphosphoric acid, tetraethyl ester....	107-49-3	1,4	P111	10 (4.54)
Dipropylamine.....	142-84-7	4	U110	5000 (2270)
Di-n-propylnitrosamine.....	621-64-7	2,4	U111	10 (4.54)
Diquat.....	85-00-7	1	.....	1000 (454)
	2764-72-9			
Disulfoton.....	298-04-4	1,4	P039	1 (0.454)
Dithiobiuret.....	541-53-7	4	P049	100 (45.4)
1,3-Dithiolane-2- carboxaldehyde, 2,4- dimethyl-O- [(methylamino)carbonyl] oxime (Tirpate).	26419-73-8	4	P185	##
Diuron.....	330-54-1	1	.....	100 (45.4)
Dodecylbenzenesulfonic acid.....	27176-87-0	1	.....	1000 (454)
Endosulfan.....	115-29-7	1,2,4	P050	1 (0.454)
alpha-Endosulfan.....	959-98-8	2	.....	1 (0.454)
beta-Endosulfan.....	33213-65-9	2	.....	1 (0.454)
ENDOSULFAN AND METABOLITES.....	N.A.	2	.....	**
Endosulfan sulfate.....	1031-07-8	2	.....	1 (0.454)
Endothall.....	145-73-3	4	P088	1000 (454)
Endrin.....	72-20-8	1,2,4	P051	1 (0.454)
Endrin aldehyde.....	7421-93-4	2	.....	1 (0.454)
ENDRIN AND METABOLITES.....	N.A.	2	.....	**
Endrin, & metabolites.....	72-20-8	1,2,4	P051	1 (0.454)
Epichlorohydrin.....	106-89-8	1,3,4	U041	100 (45.4)
Epinephrine.....	51-43-4	4	P042	1000 (454)
1,2-Epoxybutane.....	106-88-7	3	.....	100 (45.4)
Ethanal.....	75-07-0	1,3,4	U001	1000 (454)
Ethanamine, N,N-diethyl-.....	121-44-8	1,3,4	U404	5000 (2270)
Ethanamine, N-ethyl-N-nitroso-.....	55-18-5	4	U174	1 (0.454)
1,2-Ethanediamine, N,N-dimethyl- N[prime]-2- pyridinyl-N[prime]-(2- thienylmethyl)-.	91-80-5	4	U155	5000 (2270)
Ethane, 1,2-dibromo-.....	106-93-4	1,3,4	U067	1 (0.454)
Ethane, 1,1-dichloro-.....	75-34-3	2,3,4	U076	1000 (454)
Ethane, 1,2-dichloro-.....	107-06-2	1,2,3,4	U077	100 (45.4)
Ethanedinitrile.....	460-19-5	4	P031	100 (45.4)
Ethane, hexachloro-.....	67-72-1	2,3,4	U131	100 (45.4)
Ethane, 1,1[prime]- [methylenebis(oxy)]bis[2- chloro-.	111-91-1	2,4	U024	1000 (454)
Ethane, 1,1[prime]-oxybis-.....	60-29-7	4	U117	100 (45.4)

Ethane, 1,1[prime]-oxybis[2-chloro-....	111-44-4	2,3,4	U025	10 (4.54)
Ethane, pentachloro-.....	76-01-7	4	U184	10 (4.54)
Ethane, 1,1,1,2-tetrachloro-.....	630-20-6	4	U208	100 (45.4)
Ethane, 1,1,2,2-tetrachloro-.....	79-34-5	2,3,4	U209	100 (45.4)
Ethanethioamide.....	62-55-5	4	U218	10 (4.54)
Ethane, 1,1,1-trichloro-.....	71-55-6	2,3,4	U226	1000 (454)
Ethane, 1,1,2-trichloro-.....	79-00-5	2,3,4	U227	100 (45.4)
Ethanimidothioic acid, 2- (dimethylamino)-N-hydroxy-2-oxo-, methyl ester (A2213).	30558-43-1	4	U394	##
Ethanimidothioic acid, 2- (dimethylamino)-N- [[(methylamino) carbonyl]oxy]-2-oxo-, methyl ester (Oxamyl).	23135-22-0	4	P194	##
Ethanimidothioic acid, N- [[(methylamino) carbonyl]oxy]-, methyl ester.	16752-77-5	4	P066	100 (45.4)
Ethanimidothioic acid, N,N[prime][thiobis[(methylimino) carbonyloxy]]bis-, dimethyl ester (Thiodicarb).	59669-26-0	4	U410	##
Ethanol, 2-ethoxy-.....	110-80-5	4	U359	1000 (454)
Ethanol, 2,2[prime]-(nitrosoimino)bis-.	1116-54-7	4	U173	1 (0.454)
Ethanol, 2,2[prime]-oxybis-, dicarbamate (Diethylene glycol, dicarbamate).	5952-26-1	4	U395	##
Ethanone, 1-phenyl-.....	98-86-2	3,4	U004	5000 (2270)
Ethene, chloro-.....	75-01-4	2,3,4	U043	1 (0.454)
Ethene, (2-chloroethoxy)-.....	110-75-8	2,4	U042	1000 (454)
Ethene, 1,1-dichloro-.....	75-35-4	1,2,3,4	U078	100 (45.4)
Ethene, 1,2-dichloro-(E).....	156-60-5	2,4	U079	1000 (454)
Ethene, tetrachloro-.....	127-18-4	2,3,4	U210	100 (45.4)
Ethene, trichloro-.....	79-01-6	1,2,3,4	U228	100 (45.4)
Ethion.....	563-12-2	1	.....	10 (4.54)
Ethyl acetate.....	141-78-6	4	U112	5000 (2270)
Ethyl acrylate.....	140-88-5	3,4	U113	1000 (454)
Ethylbenzene.....	100-41-4	1,2,3	.....	1000 (454)
Ethyl carbamate.....	51-79-6	3,4	U238	100 (45.4)
Ethyl chloride.....	75-00-3	2,3	.....	100 (45.4)
Ethyl cyanide.....	107-12-0	4	P101	10 (4.54)
Ethylenebisdithiocarbamic acid, salts	111-54-6	4	U114	5000 (2270)

& esters.

Ethylenediamine.....	107-15-3	1	.....	5000 (2270)
Ethylenediamine-tetraacetic acid (EDTA)	60-00-4	1	.....	5000 (2270)
Ethylene dibromide.....	106-93-4	1,3,4	U067	1 (0.454)
Ethylene dichloride.....	107-06-2	1,2,3,4	U077	100 (45.4)
Ethylene glycol.....	107-21-1	3	.....	5000 (2270)
Ethylene glycol monoethyl ether.....	110-80-5	4	U359	1000 (454)
Ethylene oxide.....	75-21-8	3,4	U115	10 (4.54)
Ethylenethiourea.....	96-45-7	3,4	U116	10 (4.54)
Ethylenimine.....	151-56-4	3,4	P054	1 (0.454)
Ethyl ether.....	60-29-7	4	U117	100 (45.4)
Ethylidene dichloride.....	75-34-3	2,3,4	U076	1000 (454)
Ethyl methacrylate.....	97-63-2	4	U118	1000 (454)
Ethyl methanesulfonate.....	62-50-0	4	U119	1 (0.454)
Famphur.....	52-85-7	4	P097	1000 (454)
Ferric ammonium citrate.....	1185-57-5	1	.....	1000 (454)
Ferric ammonium oxalate.....	2944-67-4	1	.....	1000 (454)
	55488-87-4			
Ferric chloride.....	7705-08-0	1	.....	1000 (454)
Ferric fluoride.....	7783-50-8	1	.....	100 (45.4)
Ferric nitrate.....	10421-48-4	1	.....	1000 (454)
Ferric sulfate.....	10028-22-5	1	.....	1000 (454)
Ferrous ammonium sulfate.....	10045-89-3	1	.....	1000 (454)
Ferrous chloride.....	7758-94-3	1	.....	100 (45.4)
Ferrous sulfate.....	7720-78-7	1	.....	1000 (454)
	7782- 63-0			
Fine mineral fibers c.....	N.A.	3	.....	**
Fluoranthene.....	206-44-0	2,4	U120	100 (45.4)
Fluorene.....	86-73-7	2	.....	5000 (2270)
Fluorine.....	7782-41-4	4	P056	10 (4.54)
Fluoroacetamide.....	640-19-7	4	P057	100 (45.4)
Fluoroacetic acid, sodium salt.....	62-74-8	4	P058	10 (4.54)
Formaldehyde.....	50-00-0	1,3,4	U122	100 (45.4)
Formic acid.....	64-18-6	1,4	U123	5000 (2270)
Fulminic acid, mercury(2+) salt.....	628-86-4	4	P065	10 (4.54)
Fumaric acid.....	110-17-8	1	.....	5000 (2270)
Furan.....	110-00-9	4	U124	100 (45.4)
2-Furancarboxaldehyde.....	98-01-1	1,4	U125	5000 (2270)
2,5-Furandione.....	108-31-6	1,3,4	U147	5000 (2270)
Furan, tetrahydro.....	109-99-9	4	U213	1000 (454)
Furfural.....	98-01-1	1,4	U125	5000 (2270)

Furfuran.....	110-00-9	4	U124	100 (45.4)
Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-, D-.	18883-66-4	4	U206	1 (0.454)
D-Glucose, 2-deoxy-2- [[(methylnitrosoamino)-carbonyl]amino]-	18883-66-4	4	U206	1 (0.454)
Glycidylaldehyde.....	765-34-4	4	U126	10 (4.54)
Glycol ethers d.....	N.A.	3	.....	**
Guanidine, N-methyl-N'-nitro-N-nitroso-	70-25-7	4	U163	10 (4.54)
Guthion.....	86-50-0	1	.....	1 (0.454)
HALOETHERS.....	N.A.	2	.....	**
HALOMETHANES.....	N.A.	2	.....	**
Heptachlor.....	76-44-8	1,2,3,4	P059	1 (0.454)
HEPTACHLOR AND METABOLITES.....	N.A.	2	.....	**
Heptachlor epoxide.....	1024-57-3	2	.....	1 (0.454)
Hexachlorobenzene.....	118-74-1	2,3,4	U127	10 (4.54)
Hexachlorobutadiene.....	87-68-3	2,3,4	U128	1 (0.454)
HEXACHLOROCYCLOHEXANE (all isomers)....	608-73-1	2	.....	**
Hexachlorocyclopentadiene.....	77-47-4	1,2,3,4	U130	10 (4.54)
Hexachloroethane.....	67-72-1	2,3,4	U131	100 (45.4)
Hexachlorophene.....	70-30-4	4	U132	100 (45.4)
Hexachloropropene.....	1888-71-7	4	U243	1000 (454)
Hexaethyl tetraphosphate.....	757-58-4	4	P062	100 (45.4)
Hexamethylene-1,6-diisocyanate.....	822-06-0	3	.....	100 (45.4)
Hexamethylphosphoramidate.....	680-31-9	3	.....	1 (0.454)
Hexane.....	110-54-3	3	.....	5000 (2270)
Hexone.....	108-10-1	3,4	U161	5000 (2270)
Hydrazine.....	302-01-2	3,4	U133	1 (0.454)
Hydrazinecarbothioamide.....	79-19-6	4	P116	100 (45.4)
Hydrazine, 1,2-diethyl-.....	1615-80-1	4	U086	10 (4.54)
Hydrazine, 1,1-dimethyl-.....	57-14-7	3,4	U098	10 (4.54)
Hydrazine, 1,2-dimethyl-.....	540-73-8	4	U099	1 (0.454)
Hydrazine, 1,2-diphenyl-.....	122-66-7	2,3,4	U109	10 (4.54)
Hydrazine, methyl-.....	60-34-4	3,4	P068	10 (4.54)
Hydrochloric acid.....	7647-01-0	1,3	.....	5000 (2270)
Hydrocyanic acid.....	74-90-8	1,4	P063	10 (4.54)
Hydrofluoric acid.....	7664-39-3	1,3,4	U134	100 (45.4)
Hydrogen chloride.....	7647-01-0	1,3	.....	5000 (2270)
Hydrogen cyanide.....	74-90-8	1,4	P063	10 (4.54)
Hydrogen fluoride.....	7664-39-3	1,3,4	U134	100 (45.4)
Hydrogen phosphide.....	7803-51-2	3,4	P096	100 (45.4)

Hydrogen sulfide H ₂ S.....	7783-06-4	1, 4	U135	100 (45.4)
Hydroperoxide, 1-methyl-1-phenylethyl-.	80-15-9	4	U096	10 (4.54)
Hydroquinone.....	123-31-9	3	.....	100 (45.4)
2-Imidazolidinethione.....	96-45-7	3, 4	U116	10 (4.54)
Indeno(1,2,3-cd)pyrene.....	193-39-5	2, 4	U137	100 (45.4)
Iodomethane.....	74-88-4	3, 4	U138	100 (45.4)
1,3-Isobenzofurandione.....	85-44-9	3, 4	U190	5000 (2270)
Isobutyl alcohol.....	78-83-1	4	U140	5000 (2270)
Isodrin.....	465-73-6	4	P060	1 (0.454)
Isophorone.....	78-59-1	2, 3	.....	5000 (2270)
Isoprene.....	78-79-5	1	.....	100 (45.4)
Isopropanolamine	42504-46-1	1	.....	1000 (454)
dodecylbenzenesulfonate.				
Isosafrole.....	120-58-1	4	U141	100 (45.4)
3(2H)-Isoxazolone, 5-(aminomethyl)-....	2763-96-4	4	P007	1000 (454)
Kepone.....	143-50-0	1, 4	U142	1 (0.454)
Lasiocarpine.....	303-34-4	4	U143	10 (4.54)
Lead††.....	7439-92-1	2	.....	10 (4.54)
Lead acetate.....	301-04-2	1, 4	U144	10 (4.54)
LEAD AND COMPOUNDS.....	N.A.	2, 3	.....	**
Lead arsenate.....	7784-40-9	1	.....	1 (0.454)
	7645-25-2			
	10102-48-4			
Lead, bis(acetato-O)tetrahydroxytri-...	1335-32-6	4	U146	10 (4.54)
Lead chloride.....	7758-95-4	1	.....	10 (4.54)
Lead compounds.....	N.A.	2, 3	.....	**
Lead fluoborate.....	13814-96-5	1	.....	10 (4.54)
Lead fluoride.....	7783-46-2	1	.....	10 (4.54)
Lead iodide.....	10101-63-0	1	.....	10 (4.54)
Lead nitrate.....	10099-74-8	1	.....	10 (4.54)
Lead phosphate.....	7446-27-7	4	U145	10 (4.54)
Lead stearate.....	1072-35-1	1	.....	10 (4.54)
	7428-48-0			
	52652-59-2			
	56189-09-4			
Lead subacetate.....	1335-32-6	4	U146	10 (4.54)
Lead sulfate.....	7446-14-2	1	.....	10 (4.54)
	15739-80-7			
Lead sulfide.....	1314-87-0	1	.....	10 (4.54)
Lead thiocyanate.....	592-87-0	1	.....	10 (4.54)
Lindane.....	58-89-9	1, 2, 3, 4	U129	1 (0.454)

Lindane (all isomers).....	58-89-9	1,2,3,4	U129	1 (0.454)
Lithium chromate.....	14307-35-8	1	.....	10 (4.54)
Malathion.....	121-75-5	1	.....	100 (45.4)
Maleic acid.....	110-16-7	1	.....	5000 (2270)
Maleic anhydride.....	108-31-6	1,3,4	U147	5000 (2270)
Maleic hydrazide.....	123-33-1	4	U148	5000 (2270)
Malononitrile.....	109-77-3	4	U149	1000 (454)
Manganese, bis(dimethylcarbamodithioato- S,S[prime])-Manganese dimethyldithio- carbamate).	15339-36-3	4	P196	##
Manganese Compounds.....	N.A.	3	.....	**
MDI.....	101-68-8	3	.....	5000 (2270)
MEK.....	78-93-3	3,4	U159	5000 (2270)
Melphalan.....	148-82-3	4	U150	1 (0.454)
Mercaptodimethur.....	2032-65-7	1,4	P199	10 (4.54)
Mercuric cyanide.....	592-04-1	1	.....	1 (0.454)
Mercuric nitrate.....	10045-94-0	1	.....	10 (4.54)
Mercuric sulfate.....	7783-35-9	1	.....	10 (4.54)
Mercuric thiocyanate.....	592-85-8	1	.....	10 (4.54)
Mercurous nitrate.....	10415-75-5	1	.....	10 (4.54)
Mercury.....	7439-97-6	2,3,4	U151	1 (0.454)
MERCURY AND COMPOUNDS.....	N.A.	2,3	.....	**
Mercury, (acetato-O)phenyl-.....	62-38-4	4	P092	100 (45.4)
Mercury Compounds.....	N.A.	2,3	.....	**
Mercury fulminate.....	628-86-4	4	P065	10 (4.54)
Methacrylonitrile.....	126-98-7	4	U152	1000 (454)
Methanamine, N-methyl-.....	124-40-3	1,4	U092	1000 (454)
Methanamine, N-methyl-N-nitroso-.....	62-75-9	2,3,4	P082	10 (4.54)
Methane, bromo-.....	74-83-9	2,3,4	U029	1000 (454)
Methane, chloro-.....	74-87-3	2,3,4	U045	100 (45.4)
Methane, chloromethoxy-.....	107-30-2	3,4	U046	10 (4.54)
Methane, dibromo-.....	74-95-3	4	U068	1000 (454)
Methane, dichloro-.....	75-09-2	2,3,4	U080	1000 (454)
Methane, dichlorodifluoro-.....	75-71-8	4	U075	5000 (2270)
Methane, iodo-.....	74-88-4	3,4	U138	100 (45.4)
Methane, isocyanato-.....	624-83-9	3,4	P064	10 (4.54)
Methane, oxybis(chloro-.....	542-88-1	2,3,4	P016	10 (4.54)
Methanesulfenyl chloride, trichloro-...	594-42-3	4	P118	100 (45.4)
Methanesulfonic acid, ethyl ester.....	62-50-0	4	U119	1 (0.454)
Methane, tetrachloro-.....	56-23-5	1,2,3,4	U211	10 (4.54)
Methane, tetranitro-.....	509-14-8	4	P112	10 (4.54)

Methanethiol.....	74-93-1	1, 4	U153	100 (45.4)
Methane, tribromo-.....	75-25-2	2, 3, 4	U225	100 (45.4)
Methane, trichloro-.....	67-66-3	1, 2, 3, 4	U044	10 (4.54)
Methane, trichlorofluoro-.....	75-69-4	4	U121	5000 (2270)
Methanimidamide, N,N-dimethyl-N[prime]- [3-[[(methylamino) carbonyl] oxy] phenyl]- , monohydrochloride (Formetanate hydrochloride).	23422-53-9	4	P198	##
Methanimidamide, N,N-dimethyl-N[prime]- [2-methyl-4- [[(methylamino) carbonyl] oxy] phenyl]- (Formparanate).	17702-57-7	4	P197	##
6, 9-Methano-2, 4, 3-benzodioxathiepin, 6, 7, 8, 9, 10, 10-hexachloro- 1, 5, 5a, 6, 9, 9a-hexahydro-, 3-oxide.	115-29-7	1, 2, 4	P050	1 (0.454)
4, 7-Methano-1H-indene, 1, 4, 5, 6, 7, 8, 8- heptachloro-3a, 4, 7, 7a-tetrahydro-.	76-44-8	1, 2, 3, 4	P059	1 (0.454)
4, 7-Methano-1H-indene, 1, 2, 4, 5, 6, 7, 8, 8- octachloro- 2, 3, 3a, 4, 7, 7a-hexahydro-.	57-74-9	1, 2, 3, 4	U036	1 (0.454)
Methanol.....	67-56-1	3, 4	U154	5000 (2270)
Methapyrilene.....	91-80-5	4	U155	5000 (2270)
1, 3, 4-Metheno-2H-cyclobuta[cd]pentalen- 2-one, 1, 1a, 3, 3a, 4, 5, 5, 5a, 5b, 6- decachlorooctahydro-.	143-50-0	1, 4	U142	1 (0.454)
Methiocarb.....	2032-65-7	1, 4	P199	10 (4.54)
Methomyl.....	16752-77-5	4	P066	100 (45.4)
Methoxychlor.....	72-43-5	1, 3, 4	U247	1 (0.454)
Methyl alcohol.....	67-56-1	3, 4	U154	5000 (2270)
2-Methyl aziridine.....	75-55-8	3, 4	P067	1 (0.454)
Methyl bromide.....	74-83-9	2, 3, 4	U029	1000 (454)
1-Methylbutadiene.....	504-60-9	4	U186	100 (45.4)
Methyl chloride.....	74-87-3	2, 3, 4	U045	100 (45.4)
Methyl chlorocarbonate.....	79-22-1	4	U156	1000 (454)
Methyl chloroform.....	71-55-6	2, 3, 4	U226	1000 (454)
3-Methylcholanthrene.....	56-49-5	4	U157	10 (4.54)
4, 4[prime]-Methylenebis (2- chloroaniline).	101-14-4	3, 4	U158	10 (4.54)
Methylene bromide.....	74-95-3	4	U068	1000 (454)
Methylene chloride.....	75-09-2	2, 3, 4	U080	1000 (454)
4, 4[prime]-Methylenedianiline.....	101-77-9	3	.....	10 (4.54)
Methylene diphenyl diisocyanate.....	101-68-8	3	.....	5000 (2270)

Methyl ethyl ketone.....	78-93-3	3,4	U159	5000	(2270)
Methyl ethyl ketone peroxide.....	1338-23-4	4	U160	10	(4.54)
Methyl hydrazine.....	60-34-4	3,4	P068	10	(4.54)
Methyl iodide.....	74-88-4	3,4	U138	100	(45.4)
Methyl isobutyl ketone.....	108-10-1	3,4	U161	5000	(2270)
Methyl isocyanate.....	624-83-9	3,4	P064	10	(4.54)
2-Methyl lactonitrile.....	75-86-5	1,4	P069	10	(4.54)
Methyl mercaptan.....	74-93-1	1,4	U153	100	(45.4)
Methyl methacrylate.....	80-62-6	1,3,4	U162	1000	(454)
Methyl parathion.....	298-00-0	1,4	P071	100	(45.4)
4-Methyl-2-pentanone.....	108-10-1	3,4	U161	5000	(2270)
Methyl tert-butyl ether.....	1634-04-4	3	.....	1000	(454)
Methylthiouracil.....	56-04-2	4	U164	10	(4.54)
Mevinphos.....	7786-34-7	1	.....	10	(4.54)
Mexacarbate.....	315-18-4	1,4	P128	1000	(454)
Mitomycin C.....	50-07-7	4	U010	10	(4.54)
MNNG.....	70-25-7	4	U163	10	(4.54)
Monoethylamine.....	75-04-7	1	.....	100	(45.4)
Monomethylamine.....	74-89-5	1	.....	100	(45.4)
Naled.....	300-76-5	1	.....	10	(4.54)
5,12-Naphthacenedione, 8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L-lyxohexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-	20830-81-3	4	U059	10	(4.54)
1-Naphthalenamine.....	134-32-7	4	U167	100	(45.4)
2-Naphthalenamine.....	91-59-8	4	U168	10	(4.54)
Naphthalenamine, N,N'-bis(2-chloroethyl)-.	494-03-1	4	U026	100	(45.4)
Naphthalene.....	91-20-3	1,2,3,4	U165	100	(45.4)
Naphthalene, 2-chloro-.....	91-58-7	2,4	U047	5000	(2270)
1,4-Naphthalenedione.....	130-15-4	4	U166	5000	(2270)
2,7-Naphthalenedisulfonic acid, 3,3[prime]-[(3,3[prime]-dimethyl-(1,1[prime]-biphenyl)-4,4[prime]-diyl)-bis(azo)]bis(5-amino-4-hydroxy)-tetrasodium salt.	72-57-1	4	U236	10	(4.54)
1-Naphthalenol, methylcarbamate.....	63-25-2	1,3,4	U279	100	(45.4)
Naphthenic acid.....	1338-24-5	1	.....	100	(45.4)
1,4-Naphthoquinone.....	130-15-4	4	U166	5000	(2270)
alpha-Naphthylamine.....	134-32-7	4	U167	100	(45.4)

beta-Naphthylamine.....	91-59-8	4	U168	10 (4.54)
alpha-Naphthylthiourea.....	86-88-4	4	P072	100 (45.4)
Nickel††.....	7440-02-0	2	.....	100 (45.4)
Nickel ammonium sulfate.....	15699-18-0	1	.....	100 (45.4)
NICKEL AND COMPOUNDS.....	N.A.	2,3	.....	**
Nickel carbonyl Ni(CO)4, (T-4)-.....	13463-39-3	4	P073	10 (4.54)
Nickel chloride.....	7718-54-9	1	.....	100 (45.4)
	37211-05-5			
Nickel compounds.....	N.A.	2,3	.....	**
Nickel cyanide Ni(CN)2.....	557-19-7	4	P074	10 (4.54)
Nickel hydroxide.....	12054-48-7	1	.....	10 (4.54)
Nickel nitrate.....	14216-75-2	1	.....	100 (45.4)
Nickel sulfate.....	7786-81-4	1	.....	100 (45.4)
Nicotine, & salts.....	54-11-5	4	P075	100 (45.4)
Nitric acid.....	7697-37-2	1	.....	1000 (454)
Nitric acid, thallium (1+) salt.....	10102-45-1	4	U217	100 (45.4)
Nitric oxide.....	10102-43-9	4	P076	10 (4.54)
p-Nitroaniline.....	100-01-6	4	P077	5000 (2270)
Nitrobenzene.....	98-95-3	1,2,3,4	U169	1000 (454)
4-Nitrobiphenyl.....	92-93-3	3	.....	10 (4.54)
Nitrogen dioxide.....	10102-44-0	1,4	P078	10 (4.54)
	10544-72-6			
Nitrogen oxide NO.....	10102-43-9	4	P076	10 (4.54)
Nitrogen oxide NO2.....	10102-44-0	1,4	P078	10 (4.54)
	10544-72-6			
Nitroglycerine.....	55-63-0	4	P081	10 (4.54)
Nitrophenol (mixed).....	25154-55-6	1	.....	100 (45.4)
m-Nitrophenol.....	554-84-7	.....	.....	.....
o-Nitrophenol.....	88-75-5	1,2	.....	100 (45.4)
p-Nitrophenol.....	100-02-7	1,2,3,4	U170	100 (45.4)
2-Nitrophenol.....	88-75-5	1,2	.....	100 (45.4)
4-Nitrophenol.....	100-02-7	1,2,3,4	U170	100 (45.4)
NITROPHENOLS.....	N.A.	2	.....	**
2-Nitropropane.....	79-46-9	3,4	U171	10 (4.54)
NITROSAMINES.....	N.A.	2	.....	**
N-Nitrosodi-n-butylamine.....	924-16-3	4	U172	10 (4.54)
N-Nitrosodiethanolamine.....	1116-54-7	4	U173	1 (0.454)
N-Nitrosodiethylamine.....	55-18-5	4	U174	1 (0.454)
N-Nitrosodimethylamine.....	62-75-9	2,3,4	P082	10 (4.54)
N-Nitrosodiphenylamine.....	86-30-6	2	.....	100 (45.4)
N-Nitroso-N-ethylurea.....	759-73-9	4	U176	1 (0.454)

N-Nitroso-N-methylurea.....	684-93-5	3,4	U177	1 (0.454)
N-Nitroso-N-methylurethane.....	615-53-2	4	U178	1 (0.454)
N-Nitrosomethylvinylamine.....	4549-40-0	4	P084	10 (4.54)
N-Nitrosomorpholine.....	59-89-2	3	.....	1 (0.454)
N-Nitrosopiperidine.....	100-75-4	4	U179	10 (4.54)
N-Nitrosopyrrolidine.....	930-55-2	4	U180	1 (0.454)
Nitrotoluene.....	1321-12-6	1	.....	1000 (454)
m-Nitrotoluene.....	99-08-1	.....	.....	.....
o-Nitrotoluene.....	88-72-2	.....	.....	.....
p-Nitrotoluene.....	99-99-0	.....	.....	.....
5-Nitro-o-toluidine.....	99-55-8	4	U181	100 (45.4)
Octamethylpyrophosphoramid.....	152-16-9	4	P085	100 (45.4)
Osmium oxide OsO4, (T-4)-.....	20816-12-0	4	P087	1000 (454)
Osmium tetroxide.....	20816-12-0	4	P087	1000 (454)
7-Oxabicyclo[2.2.1]heptane-2,3- dicarboxylic acid.	145-73-3	4	P088	1000 (454)
1,2-Oxathiolane, 2,2-dioxide.....	1120-71-4	3,4	U193	10 (4.54)
2H-1,3,2-Oxazaphosphorin-2-amine, N,N- bis(2-chloroethyl)tetrahydro-, 2-oxide.	50-18-0	4	U058	10 (4.54)
Oxirane.....	75-21-8	3,4	U115	10 (4.54)
Oxiranecarboxyaldehyde.....	765-34-4	4	U126	10 (4.54)
Oxirane, (chloromethyl)-.....	106-89-8	1,3,4	U041	100 (45.4)
Paraformaldehyde.....	30525-89-4	1	.....	1000 (454)
Paraldehyde.....	123-63-7	4	U182	1000 (454)
Parathion.....	56-38-2	1,3,4	P089	10 (4.54)
PCBs.....	1336-36-3	1,2,3	.....	1 (0.454)
PCNB.....	82-68-8	3,4	U185	100 (45.4)
Pentachlorobenzene.....	608-93-5	4	U183	10 (4.54)
Pentachloroethane.....	76-01-7	4	U184	10 (4.54)
Pentachloronitrobenzene.....	82-68-8	3,4	U185	100 (45.4)
Pentachlorophenol.....	87-86-5	1,2,3,4	See F027	10 (4.54)
1,3-Pentadiene.....	504-60-9	4	U186	100 (45.4)
Perchloroethylene.....	127-18-4	2,3,4	U210	100 (45.4)
Phenacetin.....	62-44-2	4	U187	100 (45.4)
Phenanthrene.....	85-01-8	2	.....	5000 (2270)
Phenol.....	108-95-2	1,2,3,4	U188	1000 (454)
Phenol, 2-chloro-.....	95-57-8	2,4	U048	100 (45.4)
Phenol, 4-chloro-3-methyl-.....	59-50-7	2,4	U039	5000 (2270)
Phenol, 2-cyclohexyl-4,6-dinitro-.....	131-89-5	4	P034	100 (45.4)
Phenol, 2,4-dichloro-.....	120-83-2	2,4	U081	100 (45.4)
Phenol, 2,6-dichloro-.....	87-65-0	4	U082	100 (45.4)

Phenol, 4,4[prime]-(1,2-diethyl-1,2-ethenediyl)bis-, (E).	56-53-1	4	U089	1 (0.454)
Phenol, 2,4-dimethyl-.....	105-67-9	2,4	U101	100 (45.4)
Phenol, 4-(dimethylamino)-3,5-dimethyl-, 4 methylcarbamate (ester).	315-18-4	1,4	P128	1000 (454)
Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate.	2032-65-7	1,4	P199	10 (4.54)
Phenol, 2,4-dinitro-.....	51-28-5	1,2,3,4	P048	10 (4.54)
Phenol, methyl-.....	1319-77-3	1,3,4	U052	100 (45.4)
Phenol, 2-methyl-4,6-dinitro-, & salts.	534-52-1	2,3,4	P047	10 (4.54)
Phenol, 2,2[prime]-methylenebis[3,4,6-trichloro-.	70-30-4	4	U132	100 (45.4)
Phenol, 2-(1-methylethoxy)-, methylcarbamate.	114-26-1	3,4	U411	100 (45.4)
Phenol, 3-(1-methylethyl)-, methyl carbamate (m-Cumenyl methylcarbamate).	64-00-6	4	P202	##
Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate (Promecarb).	2631-37-0	4	P201	##
Phenol, 2-(1-methylpropyl)-4,6-dinitro-	88-85-7	4	P020	1000 (454)
Phenol, 4-nitro-.....	100-02-7	1,2,3,4	U170	100 (45.4)
Phenol, pentachloro-.....	87-86-5	1,2,3,4	See F027	10 (4.54)
Phenol, 2,3,4,6-tetrachloro-.....	58-90-2	4	See F027	10 (4.54)
Phenol, 2,4,5-trichloro-.....	95-95-4	1,3,4	See F027	10 (4.54)
Phenol, 2,4,6-trichloro-.....	88-06-2	1,2,3,4	See F027	10 (4.54)
Phenol, 2,4,6-trinitro-, ammonium salt.	131-74-8	4	P009	10 (4.54)
L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-.	148-82-3	4	U150	1 (0.454)
p-Phenylenediamine.....	106-50-3	3	.....	5000 (2270)
Phenylmercury acetate.....	62-38-4	4	P092	100 (45.4)
Phenylthiourea.....	103-85-5	4	P093	100 (45.4)
Phorate.....	298-02-2	4	P094	10 (4.54)
Phosgene.....	75-44-5	1,3,4	P095	10 (4.54)
Phosphine.....	7803-51-2	3,4	P096	100 (45.4)
Phosphoric acid.....	7664-38-2	1	.....	5000 (2270)
Phosphoric acid, diethyl 4-nitrophenyl ester.	311-45-5	4	P041	100 (45.4)
Phosphoric acid, lead(2+) salt (2:3)...	7446-27-7	4	U145	10 (4.54)
Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester.	298-04-4	1,4	P039	1 (0.454)
Phosphorodithioic acid, O,O-diethyl S-	298-02-2	4	P094	10 (4.54)

[(ethylthio)methyl] ester.				
Phosphorodithioic acid, O,O-diethyl S-methyl ester.	3288-58-2	4	U087	5000 (2270)
Phosphorodithioic acid, O,O-dimethyl S-[2(methylamino)-2-oxoethyl] ester.	60-51-5	4	P044	10 (4.54)
Phosphorofluoridic acid, bis(1-methylethyl) ester.	55-91-4	4	P043	100 (45.4)
Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester.	56-38-2	1,3,4	P089	10 (4.54)
Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester.	297-97-2	4	P040	100 (45.4)
Phosphorothioic acid, O-[4-((dimethylamino) sulfonyl)phenyl] O,O-dimethyl ester.	52-85-7	4	P097	1000 (454)
Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester.	298-00-0	1,4	P071	100 (45.4)
Phosphorus.....	7723-14-0	1,3	.....	1 (0.454)
Phosphorus oxychloride.....	10025-87-3	1	.....	1000 (454)
Phosphorus pentasulfide.....	1314-80-3	1,4	U189	100 (45.4)
Phosphorus sulfide.....	1314-80-3	1,4	U189	100 (45.4)
Phosphorus trichloride.....	7719-12-2	1	.....	1000 (454)
PHTHALATE ESTERS.....	N.A.	2	.....	**
Phthalic anhydride.....	85-44-9	3,4	U190	5000 (2270)
2-Picoline.....	109-06-8	4	U191	5000 (2270)
Piperidine, 1-nitroso-.....	100-75-4	4	U179	10 (4.54)
Plumbane, tetraethyl-.....	78-00-2	1,4	P110	10 (4.54)
POLYCHLORINATED BIPHENYLS.....	1336-36-3	1,2,3	.....	1 (0.454)
Polycyclic Organic Matter e.....	N.A.	3	.....	**
POLYNUCLEAR AROMATIC HYDROCARBONS.....	N.A.	2	.....	**
Potassium arsenate.....	7784-41-0	1	.....	1 (0.454)
Potassium arsenite.....	10124-50-2	1	.....	1 (0.454)
Potassium bichromate.....	7778-50-9	1	.....	10 (4.54)
Potassium chromate.....	7789-00-6	1	.....	10 (4.54)
Potassium cyanide K(CN).....	151-50-8	1,4	P098	10 (4.54)
Potassium hydroxide.....	1310-58-3	1	.....	1000 (454)
Potassium permanganate.....	7722-64-7	1	.....	100 (45.4)
Potassium silver cyanide.....	506-61-6	4	P099	1 (0.454)
Pronamide.....	23950-58-5	4	U192	5000 (2270)
Propanal, 2-methyl-2-(methylsulfonyl)-, O-[(methylamino)carbonyl] oxime (Aldicarb sulfone).	1646-88-4	4	P203	##

Propanal, 2-methyl-2-(methylthio)-, O- [(methylamino)carbonyl]oxime.	116-06-3	4	P070	1 (0.454)
1-Propanamine.....	107-10-8	4	U194	5000 (2270)
1-Propanamine, N-propyl-.....	142-84-7	4	U110	5000 (2270)
1-Propanamine, N-nitroso-N-propyl-.....	621-64-7	2,4	U111	10 (4.54)
Propane, 1,2-dibromo-3-chloro-.....	96-12-8	3,4	U066	1 (0.454)
Propane, 1,2-dichloro-.....	78-87-5	1,2,3,4	U083	1000 (454)
Propanedinitrile.....	109-77-3	4	U149	1000 (454)
Propanenitrile.....	107-12-0	4	P101	10 (4.54)
Propanenitrile, 3-chloro-.....	542-76-7	4	P027	1000 (454)
Propanenitrile, 2-hydroxy-2-methyl-	75-86-5	1,4	P069	10 (4.54)
Propane, 2-nitro-.....	79-46-9	3,4	U171	10 (4.54)
Propane, 2,2'-oxybis[2-chloro-.....	108-60-1	2,4	U027	1000 (454)
1,3-Propane sultone.....	1120-71-4	3,4	U193	10 (4.54)
1,2,3-Propanetriol, trinitrate.....	55-63-0	4	P081	10 (4.54)
Propanoic acid, 2-(2,4,5- trichlorophenoxy)-	93-72-1	1,4	See F027	100 (45.4)
1-Propanol, 2,3-dibromo-, phosphate (3:1).	126-72-7	4	U235	10 (4.54)
1-Propanol, 2-methyl-.....	78-83-1	4	U140	5000 (2270)
2-Propanone.....	67-64-1	4	U002	5000 (2270)
2-Propanone, 1-bromo-.....	598-31-2	4	P017	1000 (454)
Propargite.....	2312-35-8	1	.....	10 (4.54)
Propargyl alcohol.....	107-19-7	4	P102	1000 (454)
2-Propenal.....	107-02-8	1,2,3,4	P003	1 (0.454)
2-Propenamide.....	79-06-1	3,4	U007	5000 (2270)
1-Propene, 1,3-dichloro-.....	542-75-6	1,2,3,4	U084	100 (45.4)
1-Propene, 1,1,2,3,3,3-hexachloro-	1888-71-7	4	U243	1000 (454)
2-Propenenitrile.....	107-13-1	1,2,3,4	U009	100 (45.4)
2-Propenenitrile, 2-methyl-.....	126-98-7	4	U152	1000 (454)
2-Propenoic acid.....	79-10-7	3,4	U008	5000 (2270)
2-Propenoic acid, ethyl ester.....	140-88-5	3,4	U113	1000 (454)
2-Propenoic acid, 2-methyl-, ethyl ester.	97-63-2	4	U118	1000 (454)
2-Propenoic acid, 2-methyl-, methyl ester.	80-62-6	1,3,4	U162	1000 (454)
2-Propen-1-ol.....	107-18-6	1,4	P005	100 (45.4)
beta-Propiolactone.....	57-57-8	3	.....	10 (4.54)
Propionaldehyde.....	123-38-6	3	1000 (454)	
Propionic acid.....	79-09-4	1	.....	5000 (2270)
Propionic anhydride.....	123-62-6	1	.....	5000 (2270)

Propoxur (Baygon).....	114-26-1	3,4	U411	100 (45.4)
n-Propylamine.....	107-10-8	4	U194	5000 (2270)
Propylene dichloride.....	78-87-5	1,2,3,4	U083	1000 (454)
Propylene oxide.....	75-56-9	1,3	.....	100 (45.4)
1,2-Propylenimine.....	75-55-8	3,4	P067	1 (0.454)
2-Propyn-1-ol.....	107-19-7	4	P102	1000 (454)
Pyrene.....	129-00-0	2	.....	5000 (2270)
Pyrethrins.....	121-29-9	1	.....	1 (0.454)
	121-21-1			
	8003-34-7			
3,6-Pyridazinedione, 1,2-dihydro-.....	123-33-1	4	U148	5000 (2270)
4-Pyridinamine.....	504-24-5	4	P008	1000 (454)
Pyridine.....	110-86-1	4	U196	1000 (454)
Pyridine, 2-methyl-.....	109-06-8	4	U191	5000 (2270)
Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-, & salts.	54-11-5	4	P075	100 (45.4)
2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2- chloroethyl)amino]-.	66-75-1	4	U237	10 (4.54)
4(1H)-Pyrimidinone, 2,3-dihydro-6- methyl-2-thioxo-.	56-04-2	4	U164	10 (4.54)
Pyrrolidine, 1-nitroso-.....	930-55-2	4	U180	1 (0.454)
Pyrrolo[2,3-b] indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8- trimethyl-, methylcarbamate (ester), (3aS-cis)-(Physostigmine).	57-47-6	4	P204	##
Quinoline.....	91-22-5	1,3	.....	5000 (2270)
Quinone.....	106-51-4	3,4	U197	10 (4.54)
Quintobenzene.....	82-68-8	3,4	U185	100 (45.4)
Radionuclides (including radon).....	N.A.	3	.....	\$
Reserpine.....	50-55-5	4	U200	5000 (2270)
Resorcinol.....	108-46-3	1,4	U201	5000 (2270)
Saccharin, & salts.....	81-07-2	4	U202	100 (45.4)
Safrole.....	94-59-7	4	U203	100 (45.4)
Selenious acid.....	7783-00-8	4	U204	10 (4.54)
Selenious acid, dithallium (1+) salt...	12039-52-0	4	P114	1000 (454)
Seleniumdagger;dagger;.....	7782-49-2	2	.....	100 (45.4)
SELENIUM AND COMPOUNDS.....	N.A.	2,3	.....	**
Selenium Compounds.....	N.A.	2,3	.....	**
Selenium dioxide.....	7446-08-4	1,4	U204	10 (4.54)
Selenium oxide.....	7446-08-4	1,4	U204	10 (4.54)
Selenium sulfide SeS2.....	7488-56-4	4	U205	10 (4.54)

Selenourea.....	630-10-4	4	P103	1000 (454)
L-Serine, diazoacetate (ester).....	115-02-6	4	U015	1 (0.454)
Silver dagger;dagger;.....	7440-22-4	2	.....	1000 (454)
SILVER AND COMPOUNDS.....	N.A.	2	.....	**
Silver cyanide Ag(CN).....	506-64-9	4	P104	1 (0.454)
Silver nitrate.....	7761-88-8	1	.....	1 (0.454)
Silvex (2,4,5-TP).....	93-72-1	1,4	See F027	100 (45.4)
Sodium.....	7440-23-5	1	.....	10 (4.54)
Sodium arsenate.....	7631-89-2	1	.....	1 (0.454)
Sodium arsenite.....	7784-46-5	1	.....	1 (0.454)
Sodium azide.....	26628-22-8	4	P105	1000 (454)
Sodium bichromate.....	10588-01-9	1	.....	10 (4.54)
Sodium bifluoride.....	1333-83-1	1	.....	100 (45.4)
Sodium bisulfite.....	7631-90-5	1	.....	5000 (2270)
Sodium chromate.....	7775-11-3	1	.....	10 (4.54)
Sodium cyanide Na(CN).....	143-33-9	1,4	P106	10 (4.54)
Sodium dodecylbenzenesulfonate.....	25155-30-0	1	.....	1000 (454)
Sodium fluoride.....	7681-49-4	1	.....	1000 (454)
Sodium hydrosulfide.....	16721-80-5	1	.....	5000 (2270)
Sodium hydroxide.....	1310-73-2	1	.....	1000 (454)
Sodium hypochlorite.....	7681-52-9	1	.....	100 (45.4)
	10022-70-5			
Sodium methylate.....	124-41-4	1	.....	1000 (454)
Sodium nitrite.....	7632-00-0	1	.....	100 (45.4)
Sodium phosphate, dibasic.....	7558-79-4	1	.....	5000 (2270)
	10039-32-4			
	10140-65-5			
Sodium phosphate, tribasic.....	7601-54-9	1	.....	5000 (2270)
	7758-29-4			
	7785-84-4			
	10101-89-0			
	10124-56-8			
	10361-89-4			
Sodium selenite.....	7782-82-3	1	.....	100 (45.4)
	10102-18-8			
Streptozotocin.....	18883-66-4	4	U206	1 (0.454)
Strontium chromate.....	7789-06-2	1	.....	10 (4.54)
Strychnidin-10-one, & salts.....	57-24-9	1,4	P108	10 (4.54)
Strychnidin-10-one, 2,3-dimethoxy-.....	357-57-3	4	P018	100 (45.4)
Strychnine, & salts.....	57-24-9	1,4	P108	10 (4.54)
Styrene.....	100-42-5	1,3	.....	1000 (454)

Styrene oxide.....	96-09-3	3	.....	100 (45.4)
Sulfuric acid.....	7664-93-9	1	.....	1000 (454)
	8014-95-7			
Sulfuric acid, dimethyl ester.....	77-78-1	3,4	U103	100 (45.4)
Sulfuric acid, dithallium (1+) salt....	7446-18-6	1,4	P115	100 (45.4)
	10031-59-1			
Sulfur monochloride.....	12771-08-3	1	.....	1000 (454)
Sulfur phosphide.....	1314-80-3	1,4	U189	100 (45.4)
2,4,5-T.....	93-76-5	1,4	See F027	1000 (454)
2,4,5-T acid.....	93-76-5	1,4	See F027	1000 (454)
2,4,5-T amines.....	2008-46-0	1	.....	5000 (2270)
	1319-72-8			
	3813-14-7			
	6369-96-6			
	6369-97-7			
2,4,5-T esters.....	93-79-8	1	.....	1000 (454)
	1928-47-8			
	2545-59-7			
	25168-15-4			
	61792-07-2			
2,4,5-T salts.....	13560-99-1	1	.....	1000 (454)
TCDD.....	1746-01-6	2,3	.....	1 (0.454)
TDE.....	72-54-8	1,2,4	U060	1 (0.454)
1,2,4,5-Tetrachlorobenzene.....	95-94-3	4	U207	5000 (2270)
2,3,7,8-Tetrachlorodibenzo-p-dioxin....	1746-01-6	2,3	.....	1 (0.454)
1,1,1,2-Tetrachloroethane.....	630-20-6	4	U208	100 (45.4)
1,1,2,2-Tetrachloroethane.....	79-34-5	2,3,4	U209	100 (45.4)
Tetrachloroethylene.....	127-18-4	2,3,4	U210	100 (45.4)
2,3,4,6-Tetrachlorophenol.....	58-90-2	4	See F027	10 (4.54)
Tetraethyl pyrophosphate.....	107-49-3	1,4	P111	10 (4.54)
Tetraethyl lead.....	78-00-2	1,4	P110	10 (4.54)
Tetraethyldithiopyrophosphate.....	3689-24-5	4	P109	100 (45.4)
Tetrahydrofuran.....	109-99-9	4	U213	1000 (454)
Tetranitromethane.....	509-14-8	4	P112	10 (4.54)
Tetraphosphoric acid, hexaethyl ester..	757-58-4	4	P062	100 (45.4)
Thallic oxide.....	1314-32-5	4	P113	100 (45.4)
Thallium dagger;dagger;.....	7440-28-0	2	.....	1000 (454)
THALLIUM AND COMPOUNDS.....	N.A.	2	.....	**
Thallium (I) acetate.....	563-68-8	4	U214	100 (45.4)
Thallium (I) carbonate.....	6533-73-9	4	U215	100 (45.4)
Thallium chloride TlCl.....	7791-12-0	4	U216	100 (45.4)

Thallium (I) nitrate.....	10102-45-1	4	U217	100 (45.4)
Thallium oxide Tl ₂ O ₃	1314-32-5	4	P113	100 (45.4)
Thallium (I) selenite.....	12039-52-0	4	P114	1000 (454)
Thallium (I) sulfate.....	7446-18-6	1,4	P115	100 (45.4)
	10031-59-1			
Thioacetamide.....	62-55-5	4	U218	10 (4.54)
Thiodiphosphoric acid, tetraethyl ester	3689-24-5	4	P109	100 (45.4)
Thiofanox.....	39196-18-4	4	P045	100 (45.4)
Thioimidodicarbonic diamide [(H ₂ N)C(S)] 2NH.	541-53-7	4	P049	100 (45.4)
Thiomethanol.....	74-93-1	1,4	U153	100 (45.4)
Thioperoxydicarbonic diamide [(H ₂ N)C(S)] ₂ S ₂ , tetramethyl-	137-26-8	4	U244	10 (4.54)
Thiophenol.....	108-98-5	4	P014	100 (45.4)
Thiosemicarbazide.....	79-19-6	4	P116	100 (45.4)
Thiourea.....	62-56-6	4	U219	10 (4.54)
Thiourea, (2-chlorophenyl)-.....	5344-82-1	4	P026	100 (45.4)
Thiourea, 1-naphthalenyl-.....	86-88-4	4	P072	100 (45.4)
Thiourea, phenyl-.....	103-85-5	4	P093	100 (45.4)
Thiram.....	137-26-8	4	U244	10 (4.54)
Titanium tetrachloride.....	7550-45-0	3	.....	1,2,41000 (454)
Toluene.....	108-88-3	1,2,3,4	U220	1000 (454)
Toluenediamine.....	95-80-7	3,4	U221	10 (4.54)
	496-72-0			
	823-40-5			
	25376-45-8			
2,4-Toluene diamine.....	95-80-7	3,4	U221	10 (4.54)
	496-72-0			
	823-40-5			
	25376-45-8			
Toluene diisocyanate.....	91-08-7	3,4	U223	100 (45.4)
	584-84-9			
	26471-62-5			
2,4-Toluene diisocyanate.....	91-08-7	3,4	U223	100 (45.4)
	584-84-9			
	26471-62-5			
o-Toluidine.....	95-53-4	3,4	U328	100 (45.4)
p-Toluidine.....	106-49-0	4	U353	100 (45.4)
o-Toluidine hydrochloride.....	636-21-5	4	U222	100 (45.4)
Toxaphene.....	8001-35-2	1,2,3,4	P123	1 (0.454)

2,4,5-TP acid.....	93-72-1	1,4	See F027	100 (45.4)
2,4,5-TP esters.....	32534-95-5	1	.....	100 (45.4)
1H-1,2,4-Triazol-3-amine.....	61-82-5	4	U011	10 (4.54)
Trichlorfon.....	52-68-6	1	.....	100 (45.4)
1,2,4-Trichlorobenzene.....	120-82-1	2,3	.....	100 (45.4)
1,1,1-Trichloroethane.....	71-55-6	2,3,4	U226	1000 (454)
1,1,2-Trichloroethane.....	79-00-5	2,3,4	U227	100 (45.4)
Trichloroethylene.....	79-01-6	1,2,3,4	U228	100 (45.4)
Trichloromethanesulfenyl chloride.....	594-42-3	4	P118	100 (45.4)
Trichloromonofluoromethane.....	75-69-4	4	U121	5000 (2270)
Trichlorophenol.....	25167-82-2	1	.....	10 (4.54)
2,3,4-Trichlorophenol.....	15950-66-0			
2,3,5-Trichlorophenol.....	933-78-8			
2,3,6-Trichlorophenol.....	933-75-5			
3,4,5-Trichlorophenol.....	609-19-8			
2,4,5-Trichlorophenol.....	95-95-4	1,3,4	See F027	10 (4.54)
2,4,6-Trichlorophenol.....	88-06-2	1,2,3,4	See F027	10 (4.54)
Triethanolamine dodecylbenzenesulfonate	27323-41-7	1	.....	1000 (454)
Triethylamine.....	121-44-8	1,3,4	U404	5000 (2270)
Trifluralin.....	1582-09-8	3	.....	10 (4.54)
Trimethylamine.....	75-50-3	1	.....	100 (45.4)
2,2,4-Trimethylpentane.....	540-84-1	3	.....	1000 (454)
1,3,5-Trinitrobenzene.....	99-35-4	4	U234	10 (4.54)
1,3,5-Trioxane, 2,4,6-trimethyl-.....	123-63-7	4	U182	1000 (454)
Tris(2,3-dibromopropyl) phosphate.....	126-72-7	4	U235	10 (4.54)
Trypan blue.....	72-57-1	4	U236	10 (4.54)
Unlisted Hazardous Wastes	N.A.	4	D002	100 (45.4)
Characteristic of Corrosivity.				
Unlisted Hazardous Wastes	N.A.	4	D001	100 (45.4)
Characteristic of Ignitability.				
Unlisted Hazardous Wastes	N.A.	4	D003	100 (45.4)
Characteristic of Reactivity.				
Unlisted Hazardous Wastes				
Characteristic of Toxicity:				
Arsenic (D004).....	N.A.	4	D004	1 (0.454)
Barium (D005).....	N.A.	4	D005	1000 (454)
Benzene (D018).....	N.A.	1,2,3,4	D018	10 (4.54)
Cadmium (D006).....	N.A.	4	D006	10 (4.54)
Carbon tetrachloride (D019).....	N.A.	1,2,4	D019	10 (4.54)
Chlordane (D020).....	N.A.	1,2,4	D020	1 (0.454)
Chlorobenzene (D021).....	N.A.	1,2,4	D021	100 (45.4)

Chloroform (D022).....	N.A.	1,2,4	D022	10 (4.54)
Chromium (D007).....	N.A.	4	D007	10 (4.54)
o-Cresol (D023).....	N.A.	4	D023	100 (45.4)
m-Cresol (D024).....	N.A.	4	D024	100 (45.4)
p-Cresol (D025).....	N.A.	4	D025	100 (45.4)
Cresol (D026).....	N.A.	4	D026	100 (45.4)
2,4-D (D016).....	N.A.	1,4	D016	100 (45.4)
1,4-Dichlorobenzene (D027).....	N.A.	1,2,4	D027	100 (45.4)
1,2-Dichloroethane (D028).....	N.A.	1,2,4	D028	100 (45.4)
1,1-Dichloroethylene (D029).....	N.A.	1,2,4	D029	100 (45.4)
2,4-Dinitrotoluene (D030).....	N.A.	1,2,4	D030	10 (4.54)
Endrin (D012).....	N.A.	1,4	D012	1 (0.454)
Heptachlor (and epoxide) (D031)....	N.A.	1,2,4	D031	1 (0.454)
Hexachlorobenzene (D032).....	N.A.	2,4	D032	10 (4.54)
Hexachlorobutadiene (D033).....	N.A.	2,4	D033	1 (0.454)
Hexachloroethane (D034).....	N.A.	2,4	D034	100 (45.4)
Lead (D008).....	N.A.	4	D008	10 (4.54)
Lindane (D013).....	N.A.	1,4	D013	1 (0.454)
Mercury (D009).....	N.A.	4	D009	1 (0.454)
Methoxychlor (D014).....	N.A.	1,4	D014	1 (0.454)
Methyl ethyl ketone (D035).....	N.A.	4	D035	5000 (2270)
Nitrobenzene (D036).....	N.A.	1,2,4	D036	1000 (454)
Pentachlorophenol (D037).....	N.A.	1,2,4	D037	10 (4.54)
Pyridine (D038).....	N.A.	4	D038	1000 (454)
Selenium (D010).....	N.A.	4	D010	10 (4.54)
Silver (D011).....	N.A.	4	D011	1 (0.454)
Tetrachloroethylene (D039).....	N.A.	2,4	D039	100 (45.4)
Toxaphene (D015).....	N.A.	1,4	D015	1 (0.454)
Trichloroethylene (D040).....	N.A.	1,2,4	D040	100 (45.4)
2,4,5-Trichlorophenol (D041).....	N.A.	1,4	D041	10 (4.54)
2,4,6-Trichlorophenol (D042).....	N.A.	1,2,4	D042	10 (4.54)
2,4,5-TP (D017).....	N.A.	1,4	D017	100 (45.4)
Vinyl chloride (D043).....	N.A.	2,3,4	D043	1 (0.454)
Uracil mustard.....	66-75-1	4	U237	10 (4.54)
Uranyl acetate.....	541-09-3	1	.....	100 (45.4)
Uranyl nitrate.....	10102-06-4	1	.....	100 (45.4)
	36478-76-9			
Urea, N-ethyl-N-nitroso-.....	759-73-9	4	U176	1 (0.454)
Urea, N-methyl-N-nitroso-.....	684-93-5	3,4	U177	1 (0.454)
Urethane.....	51-79-6	3,4	U238	100 (45.4)
Vanadic acid, ammonium salt.....	7803-55-6	4	P119	1000 (454)

Vanadium oxide V2O5.....	1314-62-1	1,4	P120	1000 (454)
Vanadium pentoxide.....	1314-62-1	1,4	P120	1000 (454)
Vanadyl sulfate.....	27774-13-6	1	.....	1000 (454)
Vinyl acetate.....	108-05-4	1,3	.....	5000 (2270)
Vinyl acetate monomer.....	108-05-4	1,3	.....	5000 (2270)
Vinylamine, N-methyl-N-nitroso-.....	4549-40-0	4	P084	10 (4.54)
Vinyl bromide.....	593-60-2	3	.....	100 (45.4)
Vinyl chloride.....	75-01-4	2,3,4	U043	1 (0.454)
Vinylidene chloride.....	75-35-4	1,2,3,4	U078	100 (45.4)
Warfarin, & salts.....	81-81-2	4	P001, U248	100 (45.4)
Xylene.....	1330-20-7	1,3,4	U239	100 (45.4)
m-Xylene.....	108-38-3	3	.....	1000 (454)
o-Xylene.....	95-47-6	3	.....	1000 (454)
p-Xylene.....	106-42-3	3	.....	100 (45.4)
Xylene (mixed).....	1330-20-7	1,3,4	U239	100 (45.4)
Xylenes (isomers and mixture).....	1330-20-7	1,3,4	U239	100 (45.4)
Xylenol.....	1300-71-6	1	.....	1000 (454)
Yohimban-16-carboxylic acid,11,17- dimethoxy-18-[(3,4,5- trimethoxybenzoyl)oxy]-, methyl ester (3beta,16beta,17alpha, 18beta,20alpha) .	50-55-54	4	U200	5000 (2270)
Zinc dagger;dagger;.....	7440-66-6	2	.....	1000 (454)
ZINC AND COMPOUNDS.....	N.A.	2	.....	**
Zinc acetate.....	557-34-6	1	.....	1000 (454)
Zinc ammonium chloride.....	52628-25-8	1	.....	1000 (454)
	14639-97-5			
	14639-98-6			
Zinc, bis(dimethylcarbamodithioato- S,S')-, (Ziram) .	137-30-4	4	P205	##
Zinc borate.....	1332-07-6	1	.....	1000 (454)
Zinc bromide.....	7699-45-8	1	.....	1000 (454)
Zinc carbonate.....	3486-35-9	1	.....	1000 (454)
Zinc chloride.....	7646-85-7	1	.....	1000 (454)
Zinc cyanide Zn(CN)2.....	557-21-1	1,4	P121	10 (4.54)
Zinc fluoride.....	7783-49-5	1	.....	1000 (454)
Zinc formate.....	557-41-5	1	.....	1000 (454)
Zinc hydrosulfite.....	7779-86-4	1	.....	1000 (454)
Zinc nitrate.....	7779-88-6	1	.....	1000 (454)
Zinc phenolsulfonate.....	127-82-2	1	.....	5000 (2270)
Zinc phosphide Zn3P2.....	1314-84-7	1,4	P122, U249	100 (45.4)
Zinc silicofluoride.....	16871-71-9	1	.....	5000 (2270)

Zinc sulfate.....	7733-02-0	1	.....	1000 (454)
Zirconium nitrate.....	13746-89-9	1	.....	5000 (2270)
Zirconium potassium fluoride.....	16923-95-8	1	.....	1000 (454)
Zirconium sulfate.....	14644-61-2	1	.....	5000 (2270)
Zirconium tetrachloride.....	10026-11-6	1	.....	5000 (2270)
F001.....	.....	4	F001	10 (4.54)

The following spent halogenated solvents used in degreasing; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the halogenated solvents listed below or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

(a) Tetrachloroethylene.....	127-18-4	2, 3, 4	U210	100 (45.4)
(b) Trichloroethylene.....	79-01-6	1, 2, 3, 4	U228	100 (45.4)
(c) Methylene chloride.....	75-09-2	2, 3, 4	U080	1000 (454)
(d) 1,1,1-Trichloroethane.....	71-55-6	2, 3, 4	U226	1000 (454)
(e) Carbon tetrachloride.....	56-23-5	1, 2, 3, 4	U211	10 (4.54)
(f) Chlorinated fluorocarbons.....	N.A.	.....	.....	5000 (2270)
F002.....	.....	4	F002	10 (4.54)

The following spent halogenated solvents; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the halogenated solvents listed below or those solvents listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

(a) Tetrachloroethylene.....	127-18-4	2, 3, 4	U210	100 (45.4)
(b) Methylene chloride.....	75-09-2	2, 3, 4	U080	1000 (454)
(c) Trichloroethylene.....	79-01-6	1, 2, 3, 4	U228	100 (45.4)
(d) 1,1,1-Trichloroethane.....	71-55-6	2, 3, 4	U226	1000 (454)
(e) Chlorobenzene.....	108-90-7	1, 2, 3, 4	U037	100 (45.4)
(f) 1,1,2-Trichloro-1,2,2-trifluoroethane.	76-13-1	.....	.....	5000 (2270)

(g) o-Dichlorobenzene.....	95-50-1	1,2,4	U070	100 (45.4)
(h) Trichlorofluoromethane.....	75-69-4	4	U121	5000 (2270)
(i) 1,1,2-Trichloroethane.....	79-00-5	2,3,4	U227	100 (45.4)
F003.....		4	F003	100 (45.4)

The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents.

(a) Xylene.....	1330-20-7			1000 (454)
(b) Acetone.....	67-64-1			5000 (2270)
(c) Ethyl acetate.....	141-78-6			5000 (2270)
(d) Ethylbenzene.....	100-41-4			1000 (454)
(e) Ethyl ether.....	60-29-7			100 (45.4)
(f) Methyl isobutyl ketone.....	108-10-1			5000 (2270)
(g) n-Butyl alcohol.....	71-36-3			5000 (2270)
(h) Cyclohexanone.....	108-94-1			5000 (2270)
(i) Methanol.....	67-56-1			5000 (2270)
F004.....		4	F004	100 (45.4)

The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents:

(a) Cresols/Cresylic acid.....	1319-77-3	1,3,4	U052	100 (45.4)
(b) Nitrobenzene.....	98-95-3	1,2,3,4	U169	1000 (454)
F005.....		4	F005	100 (45.4)

The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents:

(a) Toluene.....	108-88-3	1,2,3,4	U220	1000 (454)
(b) Methyl ethyl ketone.....	78-93-3	3,4	U159	5000 (2270)
(c) Carbon disulfide.....	75-15-0	1,3,4	P022	100 (45.4)
(d) Isobutanol.....	78-83-1	4	U140	5000 (2270)
(e) Pyridine.....	110-86-1	4	U196	1000 (454)
F006.....		4	F006	10 (4.54)

Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum, (2) tin plating on carbon steel, (3) zinc plating (segregated basis) on carbon steel, (4) aluminum or zinc-aluminum plating on carbon steel, (5) cleaning/stripping associated with tin, zinc

and aluminum plating on carbon steel,
and (6) chemical etching and milling
of aluminum.

F007.....	4	F007	10 (4.54)
Spent cyanide plating bath solutions from electroplating operations.			
F008.....	4	F008	10 (4.54)
Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.			
F009.....	4	F009	10 (4.54)
Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.			
F010.....	4	F010	10 (4.54)
Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.			
F011.....	4	F011	10 (4.54)
Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.			
F012.....	4	F012	10 (4.54)
Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.			
F019.....	4	F019	10 (4.54)
Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.			
F020.....	4	F020	1 (0.454)
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or			

manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- or tetrachlorophenol or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of hexachlorophene from highly purified 2,4,5-trichlorophenol.)

F021.....	4	F021	1 (0.454)
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Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol or of intermediates used to produce its derivatives.

F022.....	4	F022	1 (0.454)
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Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.

F023.....	4	F023	1 (0.454)
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Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or a component in a formulating process) of tri- and tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of hexachlorophene from highly purified 2,4,5-trichlorophenol.)

F024.....	4	F024	1 (0.454)
<p>Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in 40 CFR 261.31 or 261.32.)</p>			
F025.....	4	F025	1 (0.454)
<p>Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.</p>			
F026.....	4	F026	1 (0.454)
<p>Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions.</p>			
F027.....	4	F027	1 (0.454)
<p>Discarded unused formulations</p>			

containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5- trichlorophenol as the sole component.)

F028.....	4	F028	1 (0.454)
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Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027.

F032.....	4	F032	1 (0.454)
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Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with § 261.35 of this chapter or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes (i.e., F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.

F034.....	4	F034	1 (0.454)
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Wastewaters (except those that have not

come into contact with process
contaminants), process residuals,
preservative drippage, and spent
formulations from wood preserving
processes generated at plants that use
creosote formulations. This listing
does not include K001 bottom sediment
sludge from the treatment of
wastewater from wood preserving
processes that use creosote and/or
pentachlorophenol.

F035.....

4 F035

1 (0.454)

Wastewaters (except those that have not
come into contact with process
contaminants), process residuals,
preservative drippage, and spent
formulations from wood preserving
processes generated at plants that use
inorganic preservatives containing
arsenic or chromium. This listing does
not include K001 bottom sediment
sludge from the treatment of
wastewater from wood preserving
processes that use creosote and/or
pentachlorophenol.

F037.....

4 F037

1 (0.454)

Petroleum refinery primary oil/water/
solids separation sludge-Any sludge
generated from the gravitational
separation of oil/water/solids during
the storage or treatment of process
wastewaters and oily cooling
wastewaters from petroleum refineries.
Such sludges include, but are not
limited to those generated in oil/
water/solids separators; tanks and
impoundments; ditches and other
conveyances; sumps; and stormwater
units receiving dry weather flow.
Sludges generated in stormwater units
that do not receive dry weather flow,

sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in § 261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials excluded under § 261.4(a)(12)(i), if those residuals are to be disposed of.

F038.....

4 F038

1 (0.454)

Petroleum refinery secondary (emulsified) oil/water/solids separation sludge-Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in § 261.31(b)(2) (including sludges and

floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes are not included in this listing.

F039.....	4	F039	1 (0.454)
Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of 40 CFR part 261. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other hazardous wastes retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028.)			
K001.....	4	K001	1 (0.454)
Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.			
K002.....	4	K002	10 (4.54)
Wastewater treatment sludge from the production of chrome yellow and orange pigments.			
K003.....	4	K003	10 (4.54)
Wastewater treatment sludge from the production of molybdate orange pigments.			
K004.....	4	K004	10 (4.54)
Wastewater treatment sludge from the production of zinc yellow pigments.			
K005.....	4	K005	10 (4.54)
Wastewater treatment sludge from the production of chrome green pigments.			
K006.....	4	K006	10 (4.54)
Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).			

K007.....	4	K007	10 (4.54)
Wastewater treatment sludge from the production of iron blue pigments.			
K008.....	4	K008	10 (4.54)
Oven residue from the production of chrome oxide green pigments.			
K009.....	4	K009	10 (4.54)
Distillation bottoms from the production of acetaldehyde from ethylene.			
K010.....	4	K010	10 (4.54)
Distillation side cuts from the production of acetaldehyde from ethylene.			
K011.....	4	K011	10 (4.54)
Bottom stream from the wastewater stripper in the production of acrylonitrile.			
K013.....	4	K013	10 (4.54)
Bottom stream from the acetonitrile column in the production of acrylonitrile.			
K014.....	4	K014	5000 (2270)
Bottoms from the acetonitrile purification column in the production of acrylonitrile.			
K015.....	4	K015	10 (4.54)
Still bottoms from the distillation of benzyl chloride.			
K016.....	4	K016	1 (0.454)
Heavy ends or distillation residues from the production of carbon tetrachloride.			
K017.....	4	K017	10 (4.54)
Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.			
K018.....	4	K018	1 (0.454)
Heavy ends from the fractionation column in ethyl chloride production.			
K019.....	4	K019	1 (0.454)

Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.	4	K020	1 (0.454)
K020.....			
Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.	4	K021	10 (4.54)
K021.....			
Aqueous spent antimony catalyst waste from fluoromethanes production.	4	K022	1 (0.454)
K022.....			
Distillation bottom tars from the production of phenol/acetone from cumene.	4	K023	5000 (2270)
K023.....			
Distillation light ends from the production of phthalic anhydride from naphthalene.	4	K024	5000 (2270)
K024.....			
Distillation bottoms from the production of phthalic anhydride from naphthalene.	4	K025	10 (4.54)
K025.....			
Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	4	K026	1000 (454)
K026.....			
Stripping still tails from the production of methyl ethyl pyridines.	4	K027	10 (4.54)
K027.....			
Centrifuge and distillation residues from toluene diisocyanate production.	4	K028	1 (0.454)
K028.....			
Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	4	K029	1 (0.454)
K029.....			
Waste from the product steam stripper in the production of 1,1,1-trichloroethane.	4	K030	1 (0.454)
K030.....			

Column bottoms or heavy ends from the
combined production of
trichloroethylene and
perchloroethylene.

K031.....	4	K031	1 (0.454)
By-product salts generated in the production of MSMA and cacodylic acid.			
K032.....	4	K032	10 (4.54)
Wastewater treatment sludge from the production of chlordane.			
K033.....	4	K033	10 (4.54)
Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.			
K034.....	4	K034	10 (4.54)
Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.			
K035.....	4	K035	1 (0.454)
Wastewater treatment sludges generated in the production of creosote.			
K036.....	4	K036	1 (0.454)
Still bottoms from toluene reclamation distillation in the production of disulfoton.			
K037.....	4	K037	1 (0.454)
Wastewater treatment sludges from the production of disulfoton.			
K038.....	4	K038	10 (4.54)
Wastewater from the washing and stripping of phorate production.			
K039.....	4	K039	10 (4.54)
Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.			
K040.....	4	K040	10 (4.54)
Wastewater treatment sludge from the production of phorate.			
K041.....	4	K041	1 (0.454)
Wastewater treatment sludge from the production of toxaphene.			

K042.....	4	K042	10 (4.54)
Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.			
K043.....	4	K043	10 (4.54)
2,6-Dichlorophenol waste from the production of 2,4-D.			
K044.....	4	K044	10 (4.54)
Wastewater treatment sludges from the manufacturing and processing of explosives.			
K045.....	4	K045	10 (4.54)
Spent carbon from the treatment of wastewater containing explosives.			
K046.....	4	K046	10 (4.54)
Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.			
K047.....	4	K047	10 (4.54)
Pink/red water from TNT operations.			
K048.....	4	K048	10 (4.54)
Dissolved air flotation (DAF) float from the petroleum refining industry.			
K049.....	4	K049	10 (4.54)
Slop oil emulsion solids from the petroleum refining industry.			
K050.....	4	K050	10 (4.54)
Heat exchanger bundle cleaning sludge from the petroleum refining industry.			
K051.....	4	K051	10 (4.54)
API separator sludge from the petroleum refining industry.			
K052.....	4	K052	10 (4.54)
Tank bottoms (leaded) from the petroleum refining industry.			
K060.....	4	K060	1 (0.454)
Ammonia still lime sludge from coking operations.			
K061.....	4	K061	10 (4.54)
Emission control dust/sludge from the			

primary production of steel in electric furnaces.			
K062.....	4	K062	10 (4.54)
Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).			
K064.....	4	K064	10 (4.54)
Acid plant blowdown slurry/sludge resulting from the thickening of blowdown slurry from primary copper production.			
K065.....	4	K065	10 (4.54)
Surface impoundment solids contained in and dredged from surface impoundments at primary lead smelting facilities.			
K066.....	4	K066	10 (4.54)
Sludge from treatment of process wastewater and/or acid plant blowdown from primary zinc production.			
K069.....	4	K069	10 (4.54)
Emission control dust/sludge from secondary lead smelting. (Note: This listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further administrative action is taken. If EPA takes further action effecting the stay, EPA will publish a notice of the action in the Federal Register.)			
K071.....	4	K071	1 (0.454)
Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.			
K073.....	4	K073	10 (4.54)
Chlorinated hydrocarbon waste from the purification step of the diaphragm cellprocess using graphite anodes in chlorine production.			

K083.....	4	K083	100 (45.4)
Distillation bottoms from aniline production.			
K084.....	4	K084	1 (0.454)
Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.			
K085.....	4	K085	10 (4.54)
Distillation or fractionation column bottoms from the production of chlorobenzenes.			
K086.....	4	K086	10 (4.54)
Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.			
K087.....	4	K087	100 (45.4)
Decanter tank tar sludge from coking operations.			
K088.....	4	K088	10 (4.54)
Spent potliners from primary aluminum reduction.			
K090.....	4	K090	10 (4.54)
Emission control dust or sludge from ferrochromiumsilicon production.			
K091.....	4	K091	10 (4.54)
Emission control dust or sludge from ferrochromium production.			
K093.....	4	K093	5000 (2270)
Distillation light ends from the production of phthalic anhydride from ortho-xylene.			
K094.....	4	K094	5000 (2270)
Distillation bottoms from the production of phthalic anhydride from ortho-xylene.			
K095.....	4	K095	100 (45.4)

Distillation bottoms from the production of 1,1,1-trichloroethane.			
K096.....	4	K096	100 (45.4)
Heavy ends from the heavy ends column from the production of 1,1,1- trichloroethane.			
K097.....	4	K097	1 (0.454)
Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.			
K098.....	4	K098	1 (0.454)
Untreated process wastewater from the production of toxaphene.			
K099.....	4	K099	10 (4.54)
Untreated wastewater from the production of 2,4-D.			
K100.....	4	K100	10 (4.54)
Waste leaching solution from acid leaching of emission control dust/ sludge from secondary lead smelting.			
K101.....	4	K101	1 (0.454)
Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.			
K102.....	4	K102	1 (0.454)
Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo- arsenic compounds.			
K103.....	4	K103	100 (45.4)
Process residues from aniline extraction from the production of aniline.			
K104.....	4	K104	10 (4.54)
Combined wastewater streams generated from nitrobenzene/aniline production.			
K105.....	4	K105	10 (4.54)
Separated aqueous stream from the			

reactor product washing step in the production of chlorobenzenes.			
K106.....	4	K106	1 (0.454)
Wastewater treatment sludge from the mercury cell process in chlorine production.			
K107.....	4	K107	10 (4.54)
Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazines.			
K108.....	4	K108	10 (4.54)
Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.			
K109.....	4	K109	10 (4.54)
Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.			
K110.....	4	K110	10 (4.54)
Condensed column overheads from intermediate separation from the production of 1,1- dimethylhydrazine (UDMH) from carboxylic acid hydrazides.			
K111.....	4	K111	10 (4.54)
Product washwaters from the production of dinitrotoluene via nitration of toluene.			
K112.....	4	K112	10 (4.54)
Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.			
K113.....	4	K113	10 (4.54)
Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via			

hydrogenation of dinitrotoluene.			
K114.....	4	K114	10 (4.54)
Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.			
K115.....	4	K115	10 (4.54)
Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.			
K116.....	4	K116	10 (4.54)
Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.			
K117.....	4	K117	1 (0.454)
Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.			
K118.....	4	K118	1 (0.454)
Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.			
K123.....	4	K123	10 (4.54)
Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salts.			
K124.....	4	K124	10 (4.54)
Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.			
K125.....	4	K125	10 (4.54)
Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its			

salts.			
K126.....	4	K126	10 (4.54)
Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.			
K131.....	4	K131	100 (45.4)
Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.			
K132.....	4	K132	1000 (454)
Spent absorbent and wastewater separator solids from the production of methyl bromide.			
K136.....	4	K136	1 (0.454)
Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.			
K141.....	4	K141	1 (0.454)
Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludges from coking operations).			
K142.....	4	K142	1 (0.454)
Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.			
K143.....	4	K143	1 (0.454)
Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanter, and wash oil recovery units from the recovery of coke by- products produced from coal.			

K144.....	4	K144	1 (0.454)
Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.			
K145.....	4	K145	1 (0.454)
Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.			
K147.....	4	K147	1 (0.454)
Tar storage tank residues from coal tar refining.			
K148.....	4	K148	1 (0.454)
Residues from coal tar distillation, including, but not limited to, still bottoms.			
K149.....	4	K149	10 (4.54)
Distillation bottoms from the production of alpha-(or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. [This waste does not include still bottoms from the distillation of benzyl chloride.]			
K150.....	4	K150	10 (4.54)
Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.			
K151.....	4	K151	10 (4.54)
Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of			

waste-waters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.			
K156.....	4	K156	##
Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyle oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n- butylcarbamate.)			
K157.....	4	K157	##
Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyle oximes. (This listing does not apply to wastes generated from the manufacture of 3- iodo-2-propynyl n-butylcarbamate.)			
K158.....	4	K158	##
Bag house dusts and filter/separation solids from the production of carbamates and carbamoyle oximes. (This listing does not apply to wastes generated from the manufacture of 3- iodo-2-propynyl n-butylcarbamate.)			
K159.....	4	K159	##
Organics from the treatment of thiocarbamate wastes.			
K161.....	4	K161	##
Purification solids (including filtration, evaporation, and centrifugation solids), baghouse dust and floor sweepings from the production of dithiocarbamate acids and their salts. (This does not include K125 or K126.)			
K169f.....	4	K169	10 (4.54)

Crude oil storage tank sediment from petroleum refining operations.			
K170f.....	4	K170	1 (0.454)
Clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations.			
K171f.....	4	K171	1 (0.454)
Spent hydrotreating catalyst from petroleum refining operations. (This listing does not include inert support media.)			
K172f.....	4	K172	1 (0.454)
Spent hydrorefining catalyst from petroleum refining operations. (This listing does not include inert support media.)			
K174f.....	4	K174	1 (0.454)
K175f.....	4	K175	1 (0.454)
K176.....		.....
Baghouse filters from the production of antimony oxide, including filters from the production of intermediates (e.g., antimony metal or crude antimony oxide)	4	K176	1 (0.454)
K177.....		.....
Slag from the production of antimony oxide that is speculatively accumulated or disposed, including slag from the production of intermediates (e.g., antimony metal or crude antimony oxide)	4	K177	5,000 (2270)
K178.....		.....
Residues from manufacturing and manufacturing-site storage of ferric chloride from acids formed during the production of titanium dioxide using the chloride ilmenite process	4	K178	1 (0.454)

dagger; Indicates the statutory source defined by 1,2,3, and 4, as described in the note preceding Table 302.4.
dagger;dagger; No reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers (0.004 inches).

dagge;dagge;dagge; The RQ for asbestos is limited to friable forms only.

The Agency may adjust the statutory RQ for this hazardous substance in a future rulemaking; until then the statutory one-pound RQ applies.

\$ The adjusted RQs for radionuclides may be found in Appendix B to this table.

** Indicates that no RQ is being assigned to the generic or broad class.

a Benzene was already a CERCLA hazardous substance prior to the CAA Amendments of 1990 and received an adjusted 10-pound RQ based on potential carcinogenicity in an August 14, 1989, final rule (54 FR 33418). The CAA Amendments specify that ``benzene (including benzene from gasoline)'' is a hazardous air pollutant and, thus, a CERCLA hazardous substance.

b The CAA Amendments of 1990 list DDE (3547-04-4) as a CAA hazardous air pollutant. The CAS number, 3547-04-4, is for the chemical, p,p'-dichlorodiphenylethane. DDE or p,p'-dichlorodiphenyldichloroethylene, CAS number 72-55-9, is already listed in Table 302.4 with a final RQ of 1 pound. The substance identified by the CAS number 3547-04-4 has been evaluated and listed as DDE to be consistent with the CAA section 112 listing, as amended.

c Includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less.

d Includes mono- and di-ethers of ethylene glycol, diethylene glycol, and triethylene glycol $R-(OCH_2CH_2)_n-OR'$ where:

n = 1, 2, or 3;

R = alkyl C7 or less; or

R = phenyl or alkyl substituted phenyl;

R' = H or alkyl C7 or less; or

OR' consisting of carboxylic acid ester, sulfate, phosphate, nitrate, or sulfonate.

e Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100 °C.

f See 40 CFR 302.6(b)(1) for application of the mixture rule to this hazardous waste.

CHAPTER 12

REGULATION OF WASTE DISPOSAL IN THE AGGREGATE INDUSTRY

INTRODUCTION

Solid and hazardous waste disposal in Indiana is regulated by the Indiana Department of Environmental Management, Office of Land Quality (OLQ). Appendix A under ‘Waste Disposal’ contains contact information for the OLQ. The IDEM has full authority from the U.S. EPA to regulate solid and hazardous waste disposal. Some counties also have ordinances that specify disposal of solid waste. Check with your county offices to determine whether it has regulations for solid waste disposal.

SOLID WASTE DISPOSAL REQUIREMENTS

SOLID WASTE

The Indiana solid waste regulations state that “solid waste” means any garbage, refuse, sludges and solid residue from a waste treatment plant or water supply treatment plant or air pollution control system, discarded material, including solid, liquid, semisolid or contained gaseous material resulting from industrial, commercial, mining, or agricultural operations as well as wastes from community activities such as household wastes. The term solid waste also includes those wastes deemed to be “hazardous wastes”. The rule (329 IAC 2-2-1(12)) also lists materials that are not considered solid waste. These exceptions do not generally apply to the aggregate industry. There are general exclusions of certain waste types and waste disposal activities contained in the rules at 329 IAC 2-3-1, such as disposing of uncontaminated rocks or dirt, that should be consulted when considering disposal of any solid waste. See [Attachment 1](#) to see the flow chart for the definition of solid waste.

Generators of solid waste must determine the type of solid waste, and whether the waste is hazardous, or otherwise regulated. You must review the rules applicable for the type of solid waste generated and whether you need an EPA identification number, necessary for the disposal of hazardous waste.

Facilities that operate disposal facilities must have a permit from the IDEM to do so, and it is required that only facilities with permits be used to dispose of solid waste. Certain industrial on-site activities also require permits. For example, Rule 329 IAC 2-5-1 applies to a facility that disposes of solid waste, including special waste, in a location that is owned and operated by the same facility, and is operated for its exclusive use. The facility must apply for a solid waste permit for the facility, providing detailed information regarding the solid waste facility’s location and the type of waste that is to be deposited there. There are fees associated with the application. Owners of solid waste disposal facilities must prove financial responsibility to close and care for the facility once it is no longer used. An application for a solid waste disposal facility permit is

an extensive, technical, and time-consuming effort which should not be undertaken without appropriate legal technical assistance.

SOLID WASTE TYPES

There are several categories of solid wastes. Each of these categories has distinct guidelines regarding waste management and disposal criteria. Several solid waste categories are listed below:

- Construction/Demolition Debris
- Municipal Solid Waste
- Vegetative Waste
- Restricted Waste
- Industrial Process Waste
- Asbestos-Containing Waste
- PCB-Containing Waste
- Pesticide-Containing Waste
- Conditionally Exempt Small Quantity Generator Hazardous Waste
- Wastes Generating Fugitive Dust
- Hot Waste
- Infectious Waste
- Lead-Acid Batteries
- Used Tires
- Used Oil
- Universal Waste

Additional information for each of these solid waste categories is included below.

CONSTRUCTION/DEMOLITION DEBRIS

CONSTRUCTION DEBRIS

Construction Debris Renovation and building sites usually generate scrap building materials. Although such construction debris may be disposed of at almost any solid waste landfill, it may be less expensive to haul it to a permitted construction/demolition (C/D) debris landfill rather than dispose of it at a municipal solid waste landfill. Anyone considering burying or burning construction debris should first read the material below.

BURYING CONSTRUCTION DEBRIS

Uncontaminated rocks, bricks, concrete, road demolition debris, and dirt are not subject to solid waste regulations (329 IAC 10-3-1), and therefore do not have to be disposed of in a landfill. Such debris may be left or buried on-site, or may be used off-site as fill, so long as it is not placed in a wetland or floodway. However, no other types of construction debris may be buried

or left on-site. Some building materials can compress or decay over time such that structures built on unknown burial sites could, at some future date, be subject to subsidence.

BURNING CONSTRUCTION DEBRIS

Open burning also is not generally an allowable or safe alternative. In particular, builders should keep in mind that state rules allowing private residential burning **do not** apply to open burning construction debris on residential building sites. Open burning of waste that is generated on a regular basis as part of routine business operations is prohibited.

Even when burning for heating purposes – which is allowed only from October 1 to May 15 – builders must conform to the state open burning rules, some of which include that:

1. fires must be in a noncombustible container that is sufficiently vented to induce adequate combustion and has enclosed sides and a bottom (no fires on the ground),
2. only clean wood products and paper may be burned (for example; no tar paper, shingles, plastic pipe, empty containers, etc.)
3. burning must be done during safe weather conditions,
4. fires must be attended,
5. fires must be extinguished if they create a hazard, nuisance, pollution problem or threat to public health,
6. adequate fire fighting equipment must be nearby, and
7. burning activities also must comply with all other federal, state and local laws, rules and ordinances (For example, branches and twigs are the only wood products that may be open burned in those portions of Marion County incorporated into Indianapolis).

Furthermore, burning treated lumber – which has been saturated or coated with arsenic, chromium, copper, creosote, or other wood preservatives – is prohibited under all circumstances. No other open burning of construction waste is allowed without first obtaining a variance from IDEM.

GRINDING CONSTRUCTION DEBRIS

IDEM also allows clean (untreated) lumber, card board, and gypsum wallboard to be ground (wood must be ground into pieces of 2 inches or less, gypsum into pieces of 1 inch or less) and incorporated into the soil as mulch, as a soil amendment, or to facilitate erosion control or drainage.

DEMOLITION DEBRIS

Renovation and demolition sites usually generate demolition debris. As with construction debris, disposal of demolition debris may be less expensive at a permitted construction and demolition debris landfill than at a municipal solid waste landfill. Anyone considering burying or burning demolition debris should first read the material below.

BURYING DEMOLITION DEBRIS

Uncontaminated rocks, bricks, concrete, road demolition debris, and dirt are not subject to solid waste regulations (see 329 IAC 10-3-1), and therefore do not have to be disposed of in a landfill. Such debris may be left or buried on-site, or may be used off-site as fill, so long as it is not placed in a wetland or floodway. However, no other types of demolition debris may be buried or left on-site. It can include materials that can compress or decay over time such that structures built on unknown burial sites could, at some future date, be subject to subsidence.

ALLOWABLE OPEN BURNING OF CERTAIN "WOODEN STRUCTURES" OR DEMOLITION DEBRIS

The open burning of certain "wooden structures," such as barns, out buildings, sheds, garages, corn cribs, outhouses, etc. is allowable, but only under the following circumstances:

1. The burning must take place in an unincorporated area and on the site where the structure is located (A person may not demolish a "wooden structure" and haul it outside the city limits to burn).
2. If the "wooden structure" has an asphalt roof, vinyl or asphalt siding, wiring, or any material other than wood, concrete, brick, glass, or metal, that material should be removed so that the structure can be considered a "wooden structure."
3. All asbestos containing materials and treated lumber must be removed, and not burned.
4. All such burning of "wooden structures" must conform to specific state guidelines and any local ordinances on open burning.

The debris remaining from burning a wooden structure must be properly disposed at either a permitted municipal solid waste landfill or a permitted construction/demolition debris landfill. No other open burning of demolition waste is allowed without first obtaining a variance from IDEM. For further information on, or contact persons with whom to discuss, open burning issues, please visit the Open Burning page of the IDEM Permit Guide.

MUNICIPAL SOLID WASTE

Municipal solids wastes are waste generated by households and commercial establishments. This includes wastes from single and multiple-family residences, motels, hotels, camps, parks and recreational areas.

VEGETATIVE WASTES

Leaf, brush, and woody wastes from land clearing are banned from disposal at solid waste landfills under Indiana Code, IC 13-20-9. Persons involved in land clearing activities are allowed to bury any vegetative wastes; such as leaves, twigs, branches, limbs, tree trunks and stumps onsite. However, because of the potential for future ground subsidence where large quantities of such material have been buried, the IDEM Office of Land Quality recommends that operators consider one of the options listed immediately below.

Vegetative and naturally occurring woody wastes can instead be taken to a registered yard waste composting facility. Vegetative wastes and chipped, ground, or shredded woody vegetative wastes could be composted onsite (although a registration process is required if more than 2000 pounds is to be composted) and the finished compost used onsite as a mulch, or worked into the soil as a soil amendment.

It also may be possible to burn the woody vegetation on site provided prior approval is obtained from the IDEM Office of Air Quality.

RESTRICTED WASTES

Many commercial or industrial facilities generate large quantities of industrial process waste. Once a waste determination has been performed to ensure that an industrial process waste is not hazardous, the commercial or industrial facility which generates such waste has several disposal options. One such option is for a generator to obtain an IDEM permit to construct and operate a restricted waste site. A restricted waste site is a monofill permitted to accept one type or similar types of waste(s).

IDEM issues three different types of Restricted Waste Site permits -- Types III, II, and I -- with progressively more stringent levels of monitoring and containment. The permit process involves two parts. The first step is determining the restricted waste type. Prior to disposal, all waste must be classified by IDEM. The second is obtaining the corresponding facility permit. All wastes disposed in the restricted waste site must be specifically listed in the facility permit. Indiana's rules regarding restricted waste criteria can be found at 329 IAC 10-9-4. IDEM has draft guidance to assist generators; to obtain a copy, contact:

Tracy Barnes
IDEM OLQ Technical Compliance Section
Phone: 317/308-3110

As mentioned earlier, restricted waste sites may only receive wastes which are similar in origin or chemical character and, additionally, are not subject to organic decomposition. For example, a foundry may dispose of foundry sand but not absorbents used to clean up oil spills in their restricted waste site landfill. Both testing results and a generator's knowledge of the waste is used to obtain a waste classification showing the restricted waste type. A generator may review their own data but IDEM makes the final determination and issues the waste classification.

An applicant seeking a permit for a restricted waste site must first submit a formal request to the Industrial Waste Section of IDEM for a waste classification for the waste that will be placed at the site. The complete waste determination documentation must be submitted along with that formal request. After review, IDEM Special Waste Section will notify the applicant, or in the case of waste classification renewals, the facility, of the classification of its waste(s). The waste will be classified as Type I, II, III, or IV.

Once the restricted waste type is determined, the generator then may apply for the permit for the disposal facility. The generator must select a facility type that meets or exceeds the waste type. The decision on the best disposal option for your waste will be based on several factors:

- expected variability of the waste,
- cost of permitting, and
- construction and operation costs of the restricted waste site.

The generator may choose to apply for a restricted waste site that matches their waste type. For example, a Type III site for waste that has a Type III waste classification. Alternatively, a generator may wish to apply for a restricted waste site that exceeds the waste type. For example, a Type II site for Type III waste. Remember, a Type II waste cannot go into a Type III site.

Restricted Waste Site Types I and II, which have the most stringent standards for construction and operations, both require a compacted clay liner and groundwater monitoring wells. Type III sites require a compacted clay liner; no groundwater monitoring. Additional protective features may be required depending on the chemical characteristics of your waste. Type IV waste is excluded from regulation with a few provisions found at 329 IAC 10-3-4.

Once the permit is issued, the generator must maintain compliance with the permit and rules for the site. One important requirement is keeping a current waste classification and monitoring any changes in the nature of the wastes being disposed of at the site. IDEM must be notified of changes and if the change is substantial, further disposal must be pre-approved by IDEM. Unless there is a process change which could alter the nature of the waste, the schedule for resampling corresponds with the expiration of the waste classification

INDUSTRIAL PROCESS WASTES

Industrial waste is defined as solid waste from a non-residential source that is not hazardous waste, municipal waste, construction or demolition waste, or infectious waste. It is the responsibility of the generator to conduct any waste determination which is necessary at the point of generation to determine all the regulations that may apply to the management and disposal of each waste including hazardous waste regulations.

Industrial Waste may be disposed of in a resource recovery facility (incinerator) or any municipal solid waste landfill, or portion of a municipal solid waste landfill, operated and constructed with a synthetic bottom liner as required beginning October 9, 1993, under RCRA's (the Resource Conservation and Recovery Act) Code of Federal Regulations 40 CFR 258 (commonly known as Subtitle D). Prior to disposal of the first load of waste that occurs after July 1, 2000, generators must (if they have not already done so) provide notice to the landfill that:

- a. states the waste is not hazardous waste, and
- b. indicates any special handling concerns (fugitive dust, asbestos, PCBs, generates heat).

IC 13-20-7.5-1(b) also allows generators to dispose of industrial waste in non-subtitle D cells if approved by IDEM. IDEM may issue such approvals to landfills for waste to be disposed in non-subtitle D cells as modifications to the landfill's operating permit. Check with the landfill to determine if their operating permit allows them to accept your waste into their non-subtitle D cells.

Industrial waste may continue to be disposed in a restricted waste site under this provision and in accordance with the restricted waste site criteria under 329 IAC 10-9.

SMALL QUANTITY EXCEPTION

Persons who generate less than 220 pounds of industrial waste for disposal per site per month are excluded from the requirement to notify the landfill (that the waste is non-hazardous or that it may require special handling) and may dispose of their waste in any permitted subtitle D or non-subtitle D landfill. In determining if the exclusion applies to your facility, only those wastes going for disposal should be counted. Therefore, industrial waste that is recycled or reused is not counted to determine if you meet the quantity exception.

ASBESTOS-CONTAINING WASTES

Some, but not all, types of regulated asbestos containing materials (RACM) may be disposed of in a construction/demolition landfill.

Friable asbestos - that is, asbestos or regulated asbestos containing materials that are readily crumbled, or which have been shown to release asbestos fibers during normal handling and compaction activities at the disposal site (such as transite, slate board roofing), and therefore are capable of becoming airborne - may not be disposed of in a construction/demolition debris landfill. Friable regulated asbestos-containing materials must be disposed of in a state permitted municipal solid waste landfill.

All friable or potentially friable asbestos-containing materials must be removed from a building or other facility being demolished or renovated before any wrecking or dismantling takes place. All friable asbestos must be removed by an IDEM-licensed asbestos contractor using removal workers who wet the friable asbestos-containing materials to prevent emissions to the outside air and place it in a tightly sealed package labeled for proper disposal. (Facilities with substantial amounts of asbestos on site also may instead opt to have IDEM-licensed removal workers "in house" in lieu of an outside contractor.)

On the other hand, resilient floor coverings (including associated mastic) and asphalt-based siding and roofing shingles containing asbestos that are in good condition – that is, they are nonfriable; not readily crumbled or pulverized and therefore not as likely to become airborne – may be disposed at either a C/D debris landfill or a permitted municipal solid waste landfill (MSWLF) as solid waste. No bagging, labeling, special handling, permits, or additional fees are required by the IDEM.

Residential structures and apartment buildings with four (4) or fewer units are exempt from state and federal asbestos disposal requirements. However, homeowners and do-it-yourselfers are strongly urged to follow asbestos removal guidelines and to remember that even persons generating asbestos waste from a residence remain subject to 329 IAC 10-4-2. As a result, IDEM also recommends that such homeowners and do-it-yourselfers package asbestos waste in the appropriate manner prior to disposal. Personal protective equipment – protective coveralls and a respirator equipped with a high efficiency particulate air filter– should always be worn during a removal project. Coveralls and respirator filter cartridges should also be properly packaged prior to disposal.

WASTES GENERATING FUGITIVE DUSTS

The Air Pollution Control Board has instituted regulations for management of wastes that generate fugitive dusts. In general, dust must not be allowed to cross the facility property line. There are numerous administrative and engineering controls that can be used to decrease fugitive dust emissions the most common being enclosures and wetting agents.

HOT WASTES

A Hot Waste is one that is hot or is capable of generating heat when combined with other wastes or water. Hot wastes must not adversely impact the routine operation of the landfill, damage the landfill or endanger human health. Hot wastes must be cooled prior to shipment, treated to prevent exothermic reactions or isolated from other wastes and water.

PCB-CONTAINING WASTES

Polychlorinated biphenyls (PCBs) are man-made mixtures of synthetic, chlorinated, organic chemicals with the same basic chemical structure. PCBs are manufactured as oily liquids or solids and range from colorless to light yellow in color. They have no known smell or taste.

Because PCBs are flame retardant, chemically stable, have a high boiling point and possess electrical insulating properties, they were used in hundreds of industrial and commercial applications. PCBs were used as coolants and lubricants in electrical, heat transfer and hydraulic equipment; as plasticizers which provided flexibility in paints, plastics and rubber products; in pigments, dyes and carbonless copy paper; small capacitors in appliances, submersible pumps, florescent light ballasts and for many other applications.

The manufacture and import of PCBs was prohibited after July 2, 1979. Section 6 (e) of the Toxic Substances Control Act (TSCA) of 1976 required EPA to promulgate rules governing the manufacture, use, and disposal of Polychlorinated Biphenyls (PCBs). On June 29, 1998, the Disposal Amendments (dubbed the Megarule by industry) were published in the Federal Register. Most of those regulations became effective on August 28, 1998.

PCB disposal in Indiana is regulated by 329 IAC 4.1. Disposal of PCB wastes is typically accomplished via thermal destruction at permitted incinerators or via landfilling at permitted facilities. Under certain circumstances, wastes with PCB concentrations less than 50 ppm may be disposed in MSWLFs units. For more information, please refer to 329 IAC 4.1-13.

Wastes containing or contaminated with PCBs must not be disposed of in a construction / demolition site or a restricted waste site.

PESTICIDE/HERBICIDE-CONTAINING WASTES

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) governs the sale, distribution and use of pesticides in the U.S. Pesticides are regulated under FIFRA until they are disposed, after which they are regulated under the Resource Conservation and Recovery Act (RCRA) which ensures responsible management of hazardous and non-hazardous waste. Some, but not all, pesticides are regulated as hazardous waste when disposed.

The best way to dispose of pesticide and herbicides is to use them up in their intended manner and according to the manufacturer's directions. Also, after use, pesticide and herbicide containers must be triple rinsed before disposal.

If you must dispose of pesticides and herbicide wastes, they must be characterized to determine if they are U or P-listed hazardous wastes or hazardous waste using the toxicity characteristic which requires analysis. The results of the analysis are compared to the regulatory thresholds of 40 constituents that includes several pesticides and herbicides.

HAZARDOUS WASTES GENERATED BY A CONDITIONALLY-EXEMPT SMALL QUANTITY GENERATOR

Conditionally exempt small quantity generators (CESQG) are those facilities that generate less than 220 pounds of hazardous waste per month. CESQG facility's wastes are not regulated under the hazardous waste disposal rules as long as CESQG status is maintained and certain constraints on accumulation volume are met. As such, CESQGs are allowed to dispose of their hazardous wastes (except for acutely-hazardous wastes) under solid waste regulations in a permitted Municipal Solid Waste Landfill. Please refer to the subsequent section on Hazardous Waste Management for more detail.

LEAD-ACID BATTERIES

Lead-acid batteries must be managed in the following ways:

- Return them to a manufacturer, retailer or wholesaler,
- Take them to a facility that collects lead-acid batteries for delivery to a recycling facility, or
- Take them to a permitted secondary lead smelter.

Manufacturers, retailers and wholesalers are obligated by law to accept the used lead-acid batteries in an equivalent amount to that sold to the purchaser.

INFECTIOUS WASTES

Infectious wastes mean wastes that epidemiologic evidence indicates is capable of transmitting a dangerous communicable disease (as defined by rule adopted under IC 16-41-2-1). Infectious Wastes include the following:

1. Pathological wastes.
2. Biological cultures and associated biologicals.
3. Contaminated sharps.
4. Infectious agent stock and associated biologicals.
5. Blood and blood products in liquid or semiliquid form.
6. Laboratory animal carcasses, body parts, and bedding.

These materials must be disposed of in a manner complying with standards set by the Indiana State Board of Health as well as solid waste disposal regulations. Typically, disposal is accomplished by incineration with subsequent landfill disposal of incinerator ash.

USED (OR 'WASTE') TIRES

329 IAC 15 sets guidelines for the proper handling, transporting, storage, and disposal of waste tires and waste tire facilities. Most individuals wishing to operate a waste tire storage facility or waste tire processing facility must first obtain a certificate of registration from IDEM. However, the following do not need to register with IDEM:

1. A facility that recycles or reuses waste tires and operates under a valid solid waste processing facility permit issued by IDEM;
2. A site at which waste tires are stored under a recycling program approved by IDEM;
3. Altered tires that have been chopped, shredded, or processed such that the height, length, and width of the tire product are two (2) inches or less;
4. Transformed, new or remanufactured tires; or
5. A site with less than one thousand (1,000) waste tires present, where either the site is operated by a person who supplies tires to an IDEM approved recycling program or the site is used for the retail sale of tires.

Anyone wishing to transport waste tires must also register with IDEM. Waste tire storage and processing facilities are not allowed to accept waste tires unless the transporter is registered with IDEM. To apply for registration, persons must submit an application along with a \$25 registration fee. Registered transporters must dispose of any tires that are in their possession by appropriate means set out in 329 IAC 15. Waste tire transporters are also required to prepare and carry an IDEM waste tire manifest form for all shipments of waste tires.

Some of the things an applicant wishing to operate a waste tire Storage or Processing Facility must do to comply with the Waste Tire Program include (but are not limited to):

- Submit application for registration which may ask for a description of the operation activities, proposed storage or processing methods, written estimates of closure costs, and documented financial assurance;
- Obtain the proper registration before beginning any waste tire operation;
- Ensure wastewater is properly discharged, which may require an NPDES permit;
- Maintain site as to not cause a public nuisance;
- Drain and properly store all tires;
- Keep daily tire records; and
- Submit an annual report.

The application fee for a new certificate of registration for a waste tire storage facility is five hundred dollars (\$500) and the annual fee is also five hundred dollars (\$500). The application fee for a renewal or new certificate of registration for a waste tire processing facility is two hundred dollars (\$200). There is no annual fee for waste tire processing facilities. IDEM has thirty (30) days to process waste tire registration applications but they are usually processed within a week. All waste tire certificates of registration expire five (5) years after issuance and then must be renewed. Renewals must be submitted ninety (90) days prior to the expiration date of the certificate of registration.

USED OIL MANAGEMENT

STATE AND FEDERAL REQUIREMENTS

“Used oil” is defined in Indiana regulations (329 IAC 3.1-4-25) as “a petroleum based or synthetic oil that has been used. The term includes oil that has been used for one or more of the following purposes:

1. Lubricant for engines, turbines, or gears.
2. Hydraulic fluid, including transmission fluid.
3. Metal working fluid, including cutting, grinding, machining, rolling, stamping, quenching, and coating oil.
4. Insulating fluid or coolants.”

A similar definition exists at 329 IAC 13-2-19 where “Used oil” means:

1. any oil that has been refined from crude oil; or
2. any synthetic oil;

that has been used and as a result of such use is contaminated by physical or chemical impurities.

Used oil management is regulated under 329-IAC 13-1 and Federal requirements at 40 CFR 279. Used oil management standards are included for the following entities:

- Used Oil Generators,
- Used Oil Collection Centers and Aggregation Points,
- Used Oil Transporters and Transfer Areas,
- Used Oil Processors and Re-refiners,
- Used Oil Burners Who Burn Off-Specification Used Oil for Energy Recovery, and
- Used Oil Fuel Marketers

Indiana and U.S. EPA assume that all used oil generators will recycle their used oil. If used oil is mixed with a listed hazardous waste, the waste must be handled according to the hazardous waste regulations (40 CFR 260, 266, 268, 270, and 124). Used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste because it has been mixed with a listed hazardous waste. Used oil must be tested periodically to make sure that the oil does not exhibit any characteristics of hazardous waste.

If the used oil is not mixed with a listed hazardous waste, does not exhibit any of the characteristics of hazardous waste, and does not contain more than 1,000 ppm total halogens, it may be disposed of according to the guidelines contained in 329 IAC 13-1 and 40 CFR 279. Materials that are contaminated with used oil, like oil filters, are not regulated if they are drained of oil using reasonably available measures. Mixtures of used oil and fuels are regulated as used oil, except for mixtures of used oil and diesel fuel, which is not regulated as used oil.

Used oil should be recycled, or burned for energy recovery. The aggregate plant should choose a reputable hauler and disposal facility, and should visit the disposal facility to make sure its used oil is being recycled or burned properly. Ask for copies of hauler and disposal permits from the hauler and recycling facility. If in doubt, contact Office of Land Quality to ask for information about the hauler or the recycling facility.

BURNING USED OIL FOR ENERGY RECOVERY

If used oil is burned for energy recovery, test the oil for the following contaminants and levels:

Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Flash Point	100° F. maximum
Total Halogens	4,000 ppm maximum*
PCBs	2 ppm maximum**

*Note that above we said that used oil containing more than 1,000 ppm is considered hazardous. However, if you can prove that you did not mix any halogens with the used oil, you can have up to 4,000 ppm if burning the oil for energy recovery.

****** Oils containing higher PCB levels are regulated under the Toxic Substances Control Act (TSCA). Regulations promulgated at 40 CFR 761.20 under the Toxic Substances Control Act stipulate that the burning of used oil containing quantifiable levels of PCBs (2 ppm) is allowed only in approved energy recovery combustion facilities.

If your used oil does not exceed these levels, then the used oil is not subject to this part of the regulation. Most companies' used oil will not exceed these levels. However, you must have it tested periodically to prove that these levels are not being exceeded.

PROHIBITIONS FOR DISPOSING OF USED OIL

Used oil cannot be put into surface impoundments or waste piles. It cannot be used as a dust suppressant. If it exceeds any of the above levels of contaminants, it can only be burned in specially permitted boilers and industrial furnaces.

SUMMARY OF REQUIREMENTS FOR GENERATOR OF USED OIL

1. Send the used oil off-site to be burned for energy recovery or recycled. If recycled or burned on-site, there are specific requirements in 40 CFR 279 that you must follow. If burned for energy recovery, test the used oil for contaminants in the paragraph above.
2. If you store used oil on-site in aboveground storage tanks, follow the requirements for Spill Prevention Control and Countermeasure (SPCC – see Chapter 11). Even if the tank does not fall under SPCC, you should make sure that the oil is contained if the tank or a container should leak. If you store used oil on-site in underground storage tanks, follow the IDEM requirements for these tanks (see Chapter 9).
3. When shipping used oil off-site for recycling, use only transporters who have obtained EPA identification numbers. Also, only use disposal facilities that are permitted by the state. Visit the disposal facility to make sure it is a respectable operation.
4. Containers and tanks that hold used oil must be marked clearly with the words “used oil”.
5. Use common sense. You cannot just dump your used oil into the nearest pit. You must make sure it is properly handled and disposed of. You must also minimize the possibility that the storage of used oil at your site will cause a problem to the environment.
6. Use the Material Safety Data Sheet for information on halogens, PCBs and flash point. The only way to determine if any of the other contaminants is in the used oil is by how the oil is used and by analytical testing.
7. Remember that spills of used oil that result in sludge, emulsion on a waterway or soil discoloration are reportable to the EPA under the federal Clean Water Act.
8. Keep all records of used oil accumulation, transportation off-site and disposal off-site for at least three years.

HAZARDOUS WASTE DISPOSAL REQUIREMENTS

A hazardous waste is one that, because of its quantity, concentration, physical, chemical, or infectious characteristics, may cause or significantly contribute to an increase in mortality or increase irreversible or incapacitating illness. A hazardous waste may also pose a substantial present or potential danger to human health or the environment when improperly treated, stored, transported, or disposed. Hazardous wastes are regulated from the time they are generated to the time they are safely disposed (“cradle to grave”). See [Attachment 2](#) to see a flow chart for the definition of hazardous waste.

Hazardous waste is regulated under the Resource Conservation and Recovery Act (RCRA), and by rules that EPA passed to implement RCRA. The IDEM-Office of Land Quality has authority to regulated hazardous waste generation, storage and disposal in Indiana.

Most aggregate facilities will fall into the category of Conditionally-Exempt Small Quantity Generator (CESQG) or Small Quantity Generator (SQG). The most common types of hazardous waste generate from an aggregate facility include;

- Cleaning solvents.
- Gasoline and diesel fuels (it is better to use these as fuels than to dispose of them).

These wastes are generated from plant cleaning and maintenance, vehicle maintenance, and equipment repair.

DETERMINING WHETHER A WASTE IS HAZARDOUS

In order to determine whether a solid waste is a hazardous waste, the following steps must be taken:

1. Check the contents of the raw material (using the Material Safety Data Sheet) or the manner in which the waste is generated. If the material contains any of the chemicals contained on the lists in [Attachment 3](#), the waste is considered a hazardous waste. Use the waste codes associated with the waste when shipping the material off-site for disposal.
2. Either using the material safety data sheet (MSDS) or analytical testing, determine whether the waste exhibits any of the following characteristics:
 - a. **Ignitability** – A waste is ignitable if a representative sample of the waste has any of the following properties:
 - i. It is a liquid, other than an aqueous solution containing less than 24% alcohol by volume and has a flash point less than 140° Fahrenheit as determined by Pensky-Martens Closed Cup Tester, using the test method

specified in ASTM standard D-93-79 or D-93-80, or a Setaflash Cup Tester using the test method specified in ASTM standard D-3278-78.

- ii. It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.
- iii. It is an ignitable compressed gas as defined at 49 CFR 173.300(A).
- iv. The material is an oxidizer, a material that may, generally by yielding oxygen, cause or enhance the combustion of other materials.

These materials are assigned the Waste Code D001.

- b. **Corrosivity** – A waste is corrosive if a representative sample has any of the following properties:
 - i. It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using either an EPA Test Method or equivalent approved test method.
 - ii. It is liquid and corrodes steel as specified in 40 CFR 261.22.

These materials are assigned a Waste Code D002.

- c. **Reactivity** – A waste is reactive if it is unstable or undergoes rapid or violent chemical reaction with water or other material, generates toxic gases, vapors, or fumes dangerous to human health or the environment, or is capable of detonation or explosive reaction.

These materials are assigned a Waste Code of D003.

- d. **Toxicity** – A waste sample is tested for the leachability of certain metals, organics and pesticides/herbicides present in the waste using the Toxicity Characteristic Leaching Procedure (TCLP). A waste is considered a toxicity characteristic waste if the TCLP test yields concentrations in the leachate from the waste which exceed the regulatory levels listed in the [Attachment 4](#). The associated waste codes are in [Attachment 5](#).

Some wastes are considered to be acutely hazardous. These are wastes that the U.S. EPA has determined to be so dangerous in small amounts that they are regulated in the same way as large amounts of other hazardous waste. Acute hazardous wastes are included in the tables of [Attachment 5](#) and have a hazard code of (H).

CATEGORIES OF HAZARDOUS WASTE GENERATORS

Facilities that generate small amounts of hazardous waste are not as heavily regulated as those that generate large amounts of hazardous waste. Once a hazardous waste is generated, it is regulated by RCRA, and by the IDEM Office of Land Quality.

There are three categories of hazardous waste generators:

- **Conditionally Exempt Small Quantity Generator (CESQG):**
Hazardous Waste Generation Rates: Less than 220 pounds (100 kilograms) of hazardous waste in a calendar month.
- **Small Quantity Generator (SQG):**
Hazardous Waste Generation Rates: Between 220 and 2,200 pounds (100 and 1,000 kilograms) of hazardous waste in a calendar month.
- **Large Quantity Generator (LQG):**
Hazardous Waste Generation Rates: More than 2,200 pounds of hazardous waste, or more than 2.2 pounds of acute hazardous waste, or more than 220 pounds of acute hazardous waste spill cleanup materials in a calendar month.

Each operation must count or measure the hazardous waste they generate in a calendar month to determine which category they fall into. A facility must add together the weight of all hazardous waste it generates during a month, including hazardous waste that the facility accumulates on-site for any period of time prior to subsequent management. Facilities that recycle secondary materials are also responsible for determining whether those recycled materials are regulated as solid or hazardous wastes.

Facilities do not have to count wastes that are specifically exempted from counting, including:

1. Spent lead acid batteries that will be sent off-site for recycling.
2. Used oil that has not been mixed with hazardous waste and that will be recycled.
3. Waste that may be left in the bottom of containers that have been emptied through conventional means and totals less than one inch in depth.
4. Wastes that are left as residues at the bottom of product storage tanks if the residue is not removed from the product tank (unless the tank is out of service more than 90 days).
5. Wastes that the business reclaims continuously on-site without storing prior to reclamation.
6. Wastes that are managed in an elementary neutralization unit, a totally enclosed treatment unit, or a waste water treatment unit.

7. Wastes which are discharged directly to a publicly owned treatment works without being stored or accumulated first; or
8. Wastes that the facility has already counted once during the calendar month and treated on-site or reclaimed in some manner and used again.

REQUIREMENTS FOR GENERATORS OF HAZARDOUS WASTE

The requirements for generators of hazardous waste vary for different categories of generators. Large quantity generators must comply with the full set of RCRA regulations, whereas small quantity generators and conditionally exempt small quantity generators must follow an abbreviated set of regulations. Below is a summary of the key requirements for generators of hazardous waste.

REQUIREMENTS FOR CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS (40 CFR 261.5)

1. Analyze waste to determine whether it is considered hazardous under the regulations (using MSDS, generator knowledge, or analytical testing).
2. Dispose of hazardous waste only at permitted disposal or recycling facility.
3. Accumulate no more than 2,200 pounds of hazardous waste or 2.2 pounds of acute hazardous waste at any one time.

It is strongly suggested that a log is kept of waste generation and accumulation to ensure that the facility is remaining in the Conditionally Exempt Small Quantity Generator category. It is also recommended that DOT guidelines for labeling waste containers is followed.

REQUIREMENTS FOR SMALL QUANTITY GENERATORS

1. Use hazardous waste haulers and disposal facilities that have been properly certified for hazardous waste activity.
2. Follow DOT requirements for shipping, labeling, marking, placarding and packaging waste.
3. Obtain an EPA identification number.
4. Document quantities and types of waste generated.
5. Use federal or state hazardous waste manifest to ship waste off-site – include Land Disposal Restriction notification.

6. Submit manifest exception report to agency if return manifest is not received from disposal facility within 60 days of shipment (or within 35 days for a large quantity generator).
7. Research waste minimization opportunities.
8. Conduct training of employees engaged in hazardous waste management.
9. Post emergency information next to phones.
10. Designate the train an emergency coordinator.
11. Make reports to the agency in the event of fire, explosion, or release of hazardous waste.
12. Label containers as hazardous waste, and mark the date when the accumulation of hazardous waste begins.
13. Follow applicable container and storage area standards contained in 40 CFR 265.
14. Accumulate hazardous waste for no more than 180 days (270 days if shipped 200 miles or more).
15. Accumulate no more than 13,200 pounds (6,000 kilograms-about thirty 55-gallon drums) at any one time.
16. Accumulate no more than 2.2 pounds (1 kilogram) of acute hazardous waste at any one time.
17. It is recommended that the facility maintain a log for tracking manifests used to ship waste off-site.

REQUIREMENTS FOR LARGE QUANTITY GENERATORS

Requirements for large quantity generators include all the above requirement, plus develop a contingency plan, conduct more in-depth training, perform self inspections, submit summary reports to the government every other year (in Indiana, a manifest summary report is due on the off-years) and accumulate waste no longer than 90 days. There are other requirements. However, most aggregate facilities will fall into one of the first two categories of hazardous waste generators.

STORAGE PRACTICES AND RECOMMENDATIONS

Hazardous waste will generally be stored in 55-gallon drums, but will sometimes be stored in other suitable containers or in tanks. Make use the container is compatible with the waste being stored, that the container is in good condition, and that precautions are taken to ensure that any leaks from the containers will be contained so as to protect human health, soil, and groundwater.

Containers must be kept closed except when being filled or emptied. If the waste is ignitable or reactive, it must be stored more than 50 feet from the facility property line. Never store reactive or oxidizing materials with ignitable materials. Contact your local fire department for assistance with storage of materials that are fire hazards. It is recommended that containers are stored in concrete areas with dikes.

Containers, while in storage or accumulation, must be marked with the words “HAZARDOUS WASTE”. Before transporting the waste off-site, you must mark the containers clearly with the words “HAZARDOUS WASTE-FEDERAL LAW PROHIBITS IMPROPER DISPOSAL-if found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency”. If addition, the label must contain your name and address and the manifest document number of the shipment.

Tanks must have secondary containment systems and engineering assessments. A hazardous waste should not be stored in a tank if it may cause rupture, leaks or corrosion, or otherwise cause the tank to fail. A tank should be kept covered, or there should be at least two feet of space (freeboard) at the top of the tank if it is uncovered. It must have a waste feed cutoff or bypass system to prevent overfill. Tank systems must be inspected daily. There are also other requirements. It is recommended that you contact OSHWM or other professional sources to evaluate tank management standards.

TREATING OR DISPOSING OF HAZARDOUS WASTE ON-SITE

In order to treat or dispose of hazardous waste on-site, a permit must be obtained from the Indiana Department of Environmental Management OSHWM. Contact the OSHWM (see Appendix A under ‘Waste Disposal’ for contact information) for information and assistance on the permitting process. The permitting process is costly in terms of time and money, and the operation of a treatment or disposal facility also involves time, money and extensive training.

OBTAINING A HAZARDOUS WASTE IDENTIFICATION NUMBER

A business that generates more than 220 pounds (100 kg) per month of hazardous waste must obtain a United States EPA Identification Number. The Identification Number consists of twelve characters and is used by the EPA and states as part of a national database to monitor hazardous waste activities.

To obtain a hazardous waste identification number, a business should call or write the Indiana Department of Environmental Management (IDEM) Office of Land Quality (see Appendix A under ‘Waste Disposal’), and ask for a copy of EPA Form No. 8700-12, “Notification of Hazardous Waste Activity.” Included in [Attachment 6](#) is a set of instructions for completing the EPA Notification of Hazardous Waste Activity form, along with a copy of the form. If you have any questions completing the form, call the IDEM or the U.S. EPA for clarification.

The EPA Identification Number assigned to a business stays with that particular business site or location. If the business moves to another location, then it must notify the EPA or the IDEM of the new location and submit a new form. If the new location previously handled hazardous

waste and already has an Identification Number, then the business will be assigned that number for the site after the business has made notification to the EPA using form 8700-12.

UNIFORM HAZARDOUS WASTE MANIFEST REQUIREMENTS

The Hazardous Waste Manifest is a multi-copy shipping document which a business must fill out and use to accompany the hazardous waste shipments. This form is designed to track hazardous waste from its point of generation to its final destination, a “cradle to grave” system.

The hazardous waste generator, hauler and designated facility each must sign the manifest and keep a copy. The designated facility operator must send a copy back to the waste generator, so that it can be sure that its shipment arrived. The generator must keep this copy, which has the signature of the generator, the hauler and the designated facility, on file for *three years*.

If the generator does not receive a signed copy from the designated hazardous waste management facility within 60 days from the date of transport (60 days for a small quantity generator), it should investigate why it has not received that copy, and notify the IDEM, in writing, that the copy has not been received. A generator must remember that liability does not end when it ships the hazardous waste off the premises. A generator is potentially liable under Superfund for any mismanagement of its hazardous waste. Therefore, the manifest form assists a generator to track its waste during shipment and to make sure it arrives at the proper destination.

To obtain blank copies of a hazardous waste manifest form, the generator should contact the designated facility which it intends to use if it is in out-of-state facility. If the state to which the business is shipping its waste has its own manifest, then that manifest should be used. The hauler, the designated facility, or the hazardous waste management agency of that state may be contacted for the form.

On January 1, 2001, Indiana went from using an Indiana Uniform Hazardous Waste Manifest to using the EPA Uniform Hazardous Waste Manifest, EPA form 8700-22 (see [Attachment 7](#)). If shipping to a state that does not have its own manifest, use the Uniform Hazardous Waste Manifest.

The person who signs the manifest form certifies for the generator that the manifest is complete and accurately describes the shipment, and that the shipment is ready for transport. The signature also confirms that the generator has considered whether, given its budget, its waste management arrangements are the best to reduce the amount and hazardous nature of its waste. Please read the certification statement before signing the manifest.

Federal regulations do allow a generator to haul its hazardous waste to a designated facility. However, it must obtain an EPA transporter identification number. The transporter must comply with applicable Department of Transportation requirements for packaging, labeling, marking and placarding the shipment. A hauler must also comply with financial responsibility and liability requirements under the Federal Motor Carrier Act. The State Police Motor Carrier Division enforces the federal and state transportation regulations. See Appendix A under ‘Hazardous Materials – Transportation (DOT) Issues’ for the contact name and phone number.

PROPER PACKAGING

A generator preparing hazardous waste for shipment must put the waste in containers acceptable for transportation and make sure the containers are properly labeled. The waste should be packaged and labeled in accordance with Department of Transportation regulations on hazardous materials under 49 CFR Parts 172, 173, 178, and 179.

Before transporting hazardous waste or offering hazardous waste for transportation off-site, the generator must mark each container of 110 gallons or less used in the transportation with the following display:

Hazardous Waste-State and Federal Law prohibit improper disposal. If found, contact the nearest police and public safety authority, the IDEM or the U.S. EPA. Generator's name and address _____.

Again, the State Police Motor Carrier Division is the best source of information for assistance with proper packaging and shipping of hazardous waste.

SHIPPING HAZARDOUS WASTE OFF-SITE

Choosing a hauler and designating a waste management facility is important. A generator is still responsible for proper management of a hazardous waste while it is in the hauler's hands. The waste management facility will be the final destination of the hazardous waste for treatment, storage, or disposal and the generator still maintains responsibility for any waste that they have left at the site. Therefore, before choosing a hauler or designating a facility, a generator should check with the following sources:

- The IDEM Office of Land Quality or EPA Region V Office, which will be able to tell a business whether or not a transportation or disposal company has a U.S. EPA Identification Number, and may know whether or not the company has had any past problems.
- Trade associations which may keep files on companies that handle hazardous waste.
- The Better Business Bureau or Chamber of Commerce to find out if any complaints have been registered against a hauler or facility.
- Friends and colleagues in business who may have used a specific hazardous waste hauler or designated a facility in the past.

A generator should also make sure that the hauler and final destination facility have the necessary permits and insurance, and that the hauler's vehicles are in good condition. This may take some time, so a generator should begin checking well ahead of the time it will need to ship its waste.

SPILL PREVENTION AND CONTAINMENT PLANS

A large quantity generator of hazardous waste must have a contingency plan that attempts to look ahead and prepare for any accidents that could occur. Small quantity generators are urged to have a similar contingency plan. The business should install and maintain appropriate emergency equipment, such as an alarm, a telephone or two-way portable radio, fire extinguishers, hoses, automatic sprinklers, or spray equipment on-site, so that it is immediately available to employees. Employees should be trained in the emergency procedures and in using the emergency equipment.

A business should appoint an employee to act as an emergency coordinator to insure that emergency procedures are carried out in the event of an emergency. If a business has a serious emergency for which it must call the local fire department, to there is a spill which extends outside the plant or that could reach surface waters, it should immediately call the National Response Center (800/424-8802) and give the Center the information it asks for. A business that is required to call and does not call will be subject to fines and/or imprisonment. Therefore, it is better for a business to call and be told that it did not need to, rather than be subject to any of the penalties. See Chapter 11 for a more thorough discussion of release reporting requirements.

TIPS ON REDUCING THE AMOUNT OF WASTE GENERATED

A generator should not mix non-hazardous waste with hazardous waste. It should not put non-hazardous cleaning agents or rags in the same container as hazardous solvents because then the entire contents become subject to hazardous waste regulations. Mixing several different hazardous wastes will make recycling very difficult or impossible, or make disposal more expensive.

Spills or leaks of hazardous materials should be avoided because the materials used to clean up the spills will also become hazardous. Before throwing away original containers or hazardous products, a business should make sure they are completely empty. A generator should not use more hazardous product than is necessary to do the job. Lastly, it should not throw away a container with unused solvent or pesticide or other hazardous waste.

Local inspectors of the IDEM are good sources for advice on effective ways of handling hazardous products and wastes. They can also serve as valuable resources for information on safety requirements specified to an individual business. See Chapter 14 for more discussion on Pollution Prevention.

Finally, [Attachment 8](#) provides some ideas on how to best handle wastes produced by the aggregates industry.

CHAPTER 12 - ATTACHMENT 1
Flow Chart for the Definition of Solid Waste

The following flow chart for the definition of solid waste is available in 40 CFR 260, Appendix I. Please note: as regulations are amended the e-CFR website is updated within a reasonable time period after publication in the Federal Register. For the most current version of the definition of solid waste visit the following website.

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=2f02063b2e71ee8681b31311775a0881&rgn=div9&view=text&node=40:24.0.1.1.1.3.1.11.1&idno=40>

FIGURE 1

DEFINITION OF A SOLID WASTE

All materials

Garbage, refuse
or sludge

Solid, liquid, semi-solid or
contained gaseous material
which is:

1. discarded
2. served its intended
purpose
3. a manufacturing or
mining by-product

Other

Does §261.4(a) exclude your
material from regulation
under RCRA because it is
one of the following:

1. domestic sewage
2. CWA point source discharge
3. Irrigation return flow
4. AEC source, special nuclear
or by-product material
5. In situ mining waste

YES

THE MATERIAL
IS NOT A RCRA
SOLID WASTE

NO

THE MATERIAL IS A RCRA SOLID WASTE
irrespective of whether you:

1. discard it
2. use it
3. reuse it
4. recycle it
5. reclaim it
6. store it or accumulate it
for purposes 1-5 of above

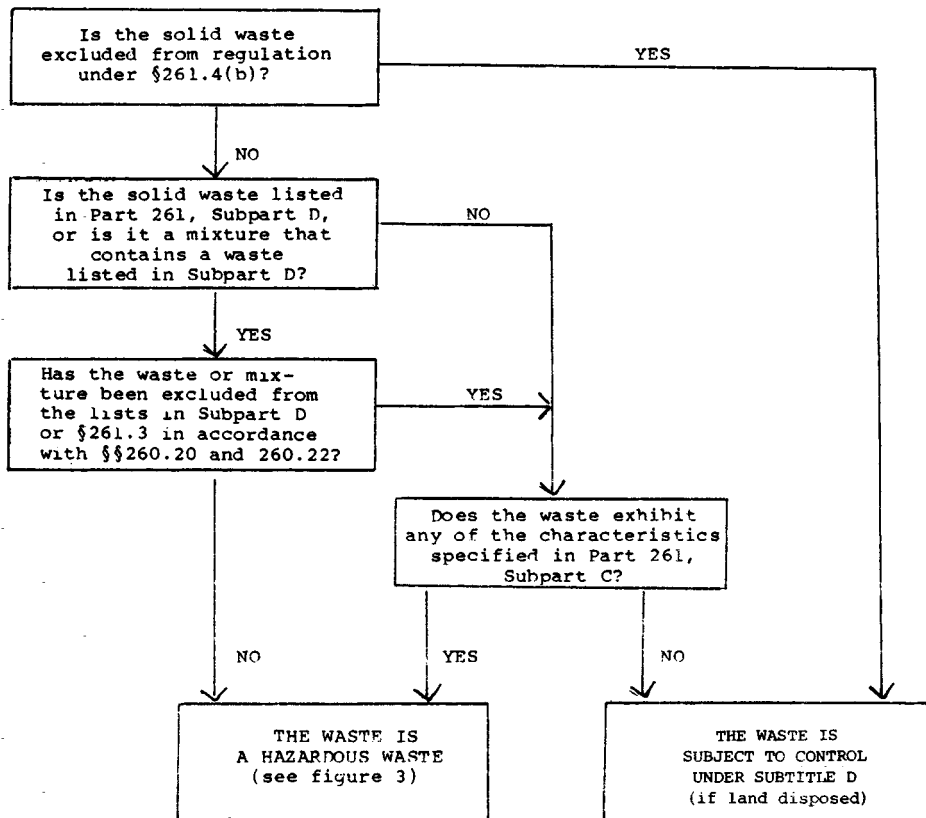
CHAPTER 12 - ATTACHMENT 2
Flow Chart for the Definition of Hazardous Waste

The following flow chart for the definition of hazardous waste is available in 40 CFR 260, Appendix I. Please note: as regulations are amended the e-CFR website is updated within a reasonable time period after publication in the Federal Register. For the most current version of the definition of hazardous waste visit the following website.

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=2f02063b2e71ee8681b31311775a0881&rgn=div9&view=text&node=40:24.0.1.1.1.3.1.11.1&idno=40>

FIGURE 2

DEFINITION OF A HAZARDOUS WASTE



CHAPTER 12 - ATTACHMENT 3
List of Hazardous Wastes

The following list of hazardous waste is located in 40 CFR 261, Subpart D. Please note: as regulations are amended the e-CFR website is updated within a reasonable time period after publication in the Federal Register. For the most current version of the rule visit the following website <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=c6363252e6968ae4463503aeca4bd107&rgn=div6&view=text&node=40:24.0.1.1.2.4&idno=40>

40 CFR 261, Subpart D
Lists of Hazardous Waste

§ 261.30 General.

(a) A solid waste is a hazardous waste if it is listed in this subpart, unless it has been excluded from this list under §§260.20 and 260.22.

(b) The Administrator will indicate his basis for listing the classes or types of wastes listed in this subpart by employing one or more of the following Hazard Codes:

Ignitable Waste	(I)
Corrosive Waste	(C)
Reactive Waste	(R)
Toxicity Characteristic Waste	(E)
Acute Hazardous Waste	(H)
Toxic Waste	(T)

§ 261.31 Hazardous wastes from non-specific sources

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
Generic: F001.....	The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
F002.....	The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F003.....	The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(I) *
F004.....	The following spent non-halogenated solvents: Cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F005....	The following spent non-halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(I,T)
F006.....	Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.	(T)
F007.....	Spent cyanide plating bath solutions from electroplating operations.	(R, T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
F008.....	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	(R, T)
F009.....	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	(R, T)
F010.....	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	(R, T)
F011.....	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	(R, T)
F012.....	Quenching waste water treatment sludges from metal heat treating operations where cyanides are used in the process.	(T)
F019.....	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.	(T)
F020.....	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol.).	(H)
F021.....	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives.	(H)
F022.....	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.	(H)
F023.....	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of Hexachlorophene from highly purified 2,4,5-trichlorophenol.).	(H)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
F024.....	Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in § 261.31 or § 261.32.).	(T)
F025.....	Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	(T)
F026.....	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions.	(H)
F027.....	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing Hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.).	(H)
F028.....	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027.	(T)
F032.....	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with §261.35 of this chapter or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes (i.e., F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	(T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
F034....	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	(T)
F035.....	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	(T)
F037.....	Petroleum refinery primary oil/water/solids separation sludge Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oil cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials excluded under §261.4(a)(12)(i), if those residuals are to be disposed of..	(T)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
F038.....	<p>Petroleum refinery secondary (emulsified) oil/water/solids separation sludge_Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: inducedair flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in § 261.31(b) (2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes are not included in this listing.</p>	
F039.....	<p>Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of this part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other Hazardous Wastes retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028.)</p>	(T)

CHAPTER 12 - ATTACHMENT 4
Toxicity Characteristics

The following list of Toxicity Characteristics is located in 40 CFR 261, Subpart D. Please note: as regulations are amended the e-CFR website is updated within a reasonable time period after publication in the Federal Register. For the most current version of the rule visit the following website <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=2f02063b2e71ee8681b31311775a0881&rgn=div8&view=text&node=40:24.0.1.1.2.3.1.5&idno=40>

§ 261.24 Toxicity characteristic.

Table 1_Maximum Concentration of Contaminants for the Toxicity Characteristic

EPA HW No. ¹	Contaminant	CAS No. ²	Regulatory Level (mg/L)
D004	Arsenic.....	7440-38-2	5.0
D005	Barium.....	7440-39-3	100.0
D018	Benzene.....	71-43-2	0.5
D006	Cadmium.....	7440-43-9	1.0
D019	Carbon tetrachloride.....	56-23-5	0.5
D020	Chlordane.....	57-74-9	0.03
D021	Chlorobenzene.....	108-90-7	100.0
D022	Chloroform.....	67-66-3	6.0
D007	Chromium.....	7440-47-3	5.0
D023	o-Cresol.....	95-48-7	⁴ 200.0
D024	m-Cresol.....	108-39-4	⁴ 200.0
D025	p-Cresol.....	106-44-5	⁴ 200.0
D026	Cresol.....	.....	⁴ 200.0
D016	2,4-D.....	94-75-7	10.0
D027	1,4-Dichlorobenzene.....	106-46-7	7.5
D028	1,2-Dichloroethane.....	107-06-2	0.5
D029	1,1-Dichloroethylene.....	75-35-4	0.7
D030	2,4-Dinitrotoluene.....	121-14-2	³ 0.13
D012	Endrin.....	72-20-8	0.02
D031	Heptachlor (and its epoxide).	76-44-8	0.008
D032	Hexachlorobenzene.....	118-74-1	³ 0.13
D033	Hexachlorobutadiene.....	87-68-3	0.5
D034	Hexachloroethane.....	67-72-1	3.0
D008	Lead.....	7439-92-1	5.0
D013	Lindane.....	58-89-9	0.4
D009	Mercury.....	7439-97-6	0.2
D014	Methoxychlor.....	72-43-5	10.0
D035	Methyl ethyl ketone.....	78-93-3	200.0
D036	Nitrobenzene.....	98-95-3	2.0
D037	Pentachlorophenol.....	87-86-5	100.0
D038	Pyridine.....	110-86-1	³ 5.0
D010	Selenium.....	7782-49-2	1.0
D011	Silver.....	7440-22-4	5.0
D039	Tetrachloroethylene.....	127-18-4	0.7
D015	Toxaphene.....	8001-35-2	0.5

EPA HW No. ¹	Contaminant	CAS No. ²	Regulatory Level (mg/L)
D040	Trichloroethylene.....	79-01-6	0.5
D041	2,4,5-Trichlorophenol.....	95-95-4	400.0
D042	2,4,6-Trichlorophenol.....	88-06-2	2.0
D017	2,4,5-TP (Silvex).....	93-72-1	1.0
D043	Vinyl chloride.....	75-01-4	0.2

¹ Hazardous waste number.

² Chemical abstracts service number.

³ Quantitation limit is greater than the calculated regulatory level.
The quantitation limit therefore becomes the regulatory level.

⁴ If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

CHAPTER 12 - ATTACHMENT 5
List of Acute Hazardous Wastes

The following list of hazardous waste is located in 40 CFR 261, Subpart D. Please note: as regulations are amended the e-CFR website is updated within a reasonable time period after publication in the Federal Register. For the most current version of the rule visit the following website <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=c6363252e6968ae4463503aeca4bd107&rgn=div6&view=text&node=40:24.0.1.1.2.4&idno=40>

40 CFR 261, Subpart D
Lists of Hazardous Waste

§ 261.33 Discarded commercial chemical products, off-specification species, container residues, and spill residues thereof.

(e) The commercial chemical products, manufacturing chemical intermediates or off-specification commercial chemical products or manufacturing chemical intermediates referred to in paragraphs (a) through (d) of this section, are identified as acute hazardous wastes (H) and are subject to be the small quantity exclusion defined in §261.5(e).

[*Comment:* For the convenience of the regulated community the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), and R (Reactivity). Absence of a letter indicates that the compound only is listed for acute toxicity.]

These wastes and their corresponding EPA Hazardous Waste Numbers are:

Hazardous waste No.	Chemical abstracts No.	Substance
P023	107-20-0	Acetaldehyde, chloro-
P002	591-08-2	Acetamide, N-(aminothioxomethyl)-
P057	640-19-7	Acetamide, 2-fluoro-
P058	62-74-8	Acetic acid, fluoro-, sodium salt
P002	591-08-2	1-Acetyl-2-thiourea
P003	107-02-8	Acrolein
P070	116-06-3	Aldicarb
P203	1646-88-4	Aldicarb sulfone.
P004	309-00-2	Aldrin
P005	107-18-6	Allyl alcohol
P006	20859-73-8	Aluminum phosphide (R,T)
P007	2763-96-4	5-(Aminomethyl)-3-isoxazolol
P008	504-24-5	4-Aminopyridine
P009	131-74-8	Ammonium picrate (R)
P119	7803-55-6	Ammonium vanadate
P099	506-61-6	Argentate(1-), bis(cyano-C)-, potassium
P010	7778-39-4	Arsenic acid H3 AsO4
P012	1327-53-3	Arsenic oxide As2 O3
P011	1303-28-2	Arsenic oxide As2 O5

Hazardous waste No.	Chemical abstracts No.	Substance
P011	1303-28-2	Arsenic pentoxide
P012	1327-53-3	Arsenic trioxide
P038	692-42-2	Arsine, diethyl-
P036	696-28-6	Arsonous dichloride, phenyl-
P054	151-56-4	Aziridine
P067	75-55-8	Aziridine, 2-methyl-
P013	542-62-1	Barium cyanide
P024	106-47-8	Benzenamine, 4-chloro-
P077	100-01-6	Benzenamine, 4-nitro-
P028	100-44-7	Benzene, (chloromethyl)-
P042	51-43-4	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)-
P046	122-09-8	Benzenethanamine, alpha,alpha-dimethyl-
P014	108-98-5	Benzenethiol
P127	1563-66-2	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-, methylcarbamate.
P188	57-64-7	Benzoic acid, 2-hydroxy-, compd. with (3aS-cis)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo[2,3-b]indol-5-yl methylcarbamate ester (1:1).
P001	\1\ 81-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, & salts, when present at concentrations greater than 0.3%
P028	100-44-7	Benzyl chloride
P015	7440-41-7	Beryllium powder
P017	598-31-2	Bromoacetone
P018	357-57-3	Brucine
P045	39196-18-4	2-Butanone, 3,3-dimethyl-1-(methylthio)-, O-[methylamino)carbonyl] oxime
P021	592-01-8	Calcium cyanide
P021	592-01-8	Calcium cyanide Ca(CN)2
P189	55285-14-8	Carbamic acid, [(dibutylamino)-thio]methyl-, 2,3-dihydro-2,2-dimethyl- 7-benzofuranyl ester.
P191	644-64-4	Carbamic acid, dimethyl-, 1-[(dimethylamino)carbonyl]- 5-methyl-1H- pyrazol-3-yl ester.
P192	119-38-0	Carbamic acid, dimethyl-, 3-methyl-1-(1-methylethyl)-1H- pyrazol-5-yl ester.
P190	1129-41-5	Carbamic acid, methyl-, 3-methylphenyl ester.
P127	1563-66-2	Carbofuran.
P022	75-15-0	Carbon disulfide
P095	75-44-5	Carbonic dichloride
P189	55285-14-8	Carbosulfan.
P023	107-20-0	Chloroacetaldehyde
P024	106-47-8	p-Chloroaniline
P026	5344-82-1	1-(o-Chlorophenyl)thiourea

Hazardous waste No.	Chemical abstracts No.	Substance
P027	542-76-7	3-Chloropropionitrile
P029	544-92-3	Copper cyanide
P029	544-92-3	Copper cyanide Cu(CN)
P202	64-00-6	m-Cumenyl methylcarbamate.
P030	.....	Cyanides (soluble cyanide salts), not otherwise specified
P031	460-19-5	Cyanogen
P033	506-77-4	Cyanogen chloride
P033	506-77-4	Cyanogen chloride (CN)Cl
P034	131-89-5	2-Cyclohexyl-4,6-dinitrophenol
P016	542-88-1	Dichloromethyl ether
P036	696-28-6	Dichlorophenylarsine
P037	60-57-1	Dieldrin
P038	692-42-2	Diethylarsine
P041	311-45-5	Diethyl-p-nitrophenyl phosphate
P040	297-97-2	O,O-Diethyl O-pyrazinyl phosphorothioate
P043	55-91-4	Diisopropylfluorophosphate (DFP)
P004	309-00-2	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexa- chloro- 1,4,4a,5,8,8a,-hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha,8 abeta)-
P060	465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexa- chloro- 1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5beta,8beta,8ab eta)-
P037	60-57-1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro- 1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6a alpha,7beta, 7aalpha)-
P051	\1\ 72-20-8	2,7:3,6-Dimethanonaphth [2,3- b]oxirene, 3,4,5,6,9,9-hexachloro- 1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2abeta,3alpha,6alpha,6 abeta,7beta, 7aalpha)-, & metabolites
P044	60-51-5	Dimethoate
P046	122-09-8	alpha,alpha-Dimethylphenethylamine
P191	644-64-4	Dimetilan.
P047	\1\ 534-52-1	4,6-Dinitro-o-cresol, & salts
P048	51-28-5	2,4-Dinitrophenol
P020	88-85-7	Dinoseb
P085	152-16-9	Diphosphoramide, octamethyl-
P111	107-49-3	Diphosphoric acid, tetraethyl ester
P039	298-04-4	Disulfoton
P049	541-53-7	Dithiobiuret
P185	26419-73-8	1,3-Dithiolane-2-carboxaldehyde, 2,4- dimethyl-, O- [(methylamino)- carbonyl]oxime.

Hazardous waste No.	Chemical abstracts No.	Substance
P050	115-29-7	Endosulfan
P088	145-73-3	Endothall
P051	72-20-8	Endrin
P051	72-20-8	Endrin, & metabolites
P042	51-43-4	Epinephrine
P031	460-19-5	Ethanedinitrile
P194	23135-22-0	Ethanimidothioc acid, 2- (dimethylamino)-N-[[(methylamino) carbonyl]oxy]-2-oxo-, methyl ester.
P066	16752-77-5	Ethanimidothioic acid, N-[[(methylamino) carbonyl]oxy]-, methyl ester
P101	107-12-0	Ethyl cyanide
P054	151-56-4	Ethyleneimine
P097	52-85-7	Famphur
P056	7782-41-4	Fluorine
P057	640-19-7	Fluoroacetamide
P058	62-74-8	Fluoroacetic acid, sodium salt
P198	23422-53-9	Formetanate hydrochloride.
P197	17702-57-7	Formparanate.
P065	628-86-4	Fulminic acid, mercury(2+) salt (R,T)
P059	76-44-8	Heptachlor
P062	757-58-4	Hexaethyl tetraphosphate
P116	79-19-6	Hydrazinecarbothioamide
P068	60-34-4	Hydrazine, methyl-
P063	74-90-8	Hydrocyanic acid
P063	74-90-8	Hydrogen cyanide
P096	7803-51-2	Hydrogen phosphide
P060	465-73-6	Isodrin
P192	119-38-0	Isolan.
P202	64-00-6	3-Isopropylphenyl N-methylcarbamate.
P007	2763-96-4	3(2H)-Isoxazolone, 5-(aminomethyl)-
P196	15339-36-3	Manganese, bis(dimethylcarbamodithioato- S,S[prime])- ,
P196	15339-36-3	Manganese dimethyldithiocarbamate.
P092	62-38-4	Mercury, (acetato-O)phenyl-
P065	628-86-4	Mercury fulminate (R,T)
P082	62-75-9	Methanamine, N-methyl-N-nitroso-
P064	624-83-9	Methane, isocyanato-
P016	542-88-1	Methane, oxybis[chloro-
P112	509-14-8	Methane, tetranitro- (R)
P118	75-70-7	Methanethiol, trichloro-
P198	23422-53-9	Methanimidamide, N,N-dimethyl-N[prime]- [3-[[(methylamino)- carbonyl]oxy]phenyl]-, monohydrochloride.
P197	17702-57-7	Methanimidamide, N,N-dimethyl-N[prime]- [2-methyl-4- [[(methylamino) carbonyl]oxy]phenyl]-

Hazardous waste No.	Chemical abstracts No.	Substance
P050	115-29-7	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10- hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide
P059	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8- heptachloro- 3a,4,7,7a-tetrahydro-
P199	2032-65-7	Methiocarb.
P066	16752-77-5	Methomyl
P068	60-34-4	Methyl hydrazine
P064	624-83-9	Methyl isocyanate
P069	75-86-5	2-Methyl lactonitrile
P071	298-00-0	Methyl parathion
P190	1129-41-5	Metolcarb.
P128	315-8-4	Mexacarbate.
P072	86-88-4	alpha-Naphthylthiourea
P073	13463-39-3	Nickel carbonyl
P073	13463-39-3	Nickel carbonyl Ni(CO) ₄ , (T-4)-
P074	557-19-7	Nickel cyanide
P074	557-19-7	Nickel cynaide Ni(CN) ₂
P075	\1\ 54-11-5	Nicotine, & salts
P076	10102-43-9	Nitric oxide
P077	100-01-6	p-Nitroaniline
P078	10102-44-0	Nitrogen dioxide
P076	10102-43-9	Nitrogen oxide NO
P078	10102-44-0	Nitrogen oxide NO ₂
P081	55-63-0	Nitroglycerine (R)
P082	62-75-9	N-Nitrosodimethylamine
P084	4549-40-0	N-Nitrosomethylvinylamine
P085	152-16-9	Octamethylpyrophosphoramidate
P087	20816-12-0	Osmium oxide OsO ₄ , (T-4)-
P087	20816-12-0	Osmium tetroxide
P088	145-73-3	7-Oxabicyclo[2.2.1]heptane-2,3- dicarboxylic acid
P194	23135-22-0	Oxamyl.
P089	56-38-2	Parathion
P034	131-89-5	Phenol, 2-cyclohexyl-4,6-dinitro-
P048	51-28-5	Phenol, 2,4-dinitro-
P047	\1\ 534-52-1	Phenol, 2-methyl-4,6-dinitro-, & salts
P020	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
P009	131-74-8	Phenol, 2,4,6-trinitro-, ammonium salt (R)
P128	315-18-4	Phenol, 4-(dimethylamino)-3,5-dimethyl- , methylcarbamate (ester).
P199	2032-65-7	Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate
P202	64-00-6	Phenol, 3-(1-methylethyl)-, methyl carbamate.

Hazardous waste No.	Chemical abstracts No.	Substance
P201	2631-37-0	Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate.
P092	62-38-4	Phenylmercury acetate
P093	103-85-5	Phenylthiourea
P094	298-02-2	Phorate
P095	75-44-5	Phosgene
P096	7803-51-2	Phosphine
P041	311-45-5	Phosphoric acid, diethyl 4-nitrophenyl ester
P039	298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester
P094	298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester
P044	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester
P043	55-91-4	Phosphorofluoridic acid, bis(1-methylethyl) ester
P089	56-38-2	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester
P040	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester
P097	52-85-7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester
P071	298-00-0	Phosphorothioic acid, O,O,-dimethyl O-(4-nitrophenyl) ester
P204	57-47-6	Physostigmine.
P188	57-64-7	Physostigmine salicylate.
P110	78-00-2	Plumbane, tetraethyl-
P098	151-50-8	Potassium cyanide
P098	151-50-8	Potassium cyanide K(CN)
P099	506-61-6	Potassium silver cyanide
P201	2631-37-0	Promecarb
P070	116-06-3	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime
P203	1646-88-4	Propanal, 2-methyl-2-(methyl-sulfonyl)-, O-[(methylamino)carbonyl] oxime.
P101	107-12-0	Propanenitrile
P027	542-76-7	Propanenitrile, 3-chloro-
P069	75-86-5	Propanenitrile, 2-hydroxy-2-methyl-
P081	55-63-0	1,2,3-Propanetriol, trinitrate (R)
P017	598-31-2	2-Propanone, 1-bromo-
P102	107-19-7	Propargyl alcohol
P003	107-02-8	2-Propenal
P005	107-18-6	2-Propen-1-ol
P067	75-55-8	1,2-Propylenimine
P102	107-19-7	2-Propyn-1-ol
P008	504-24-5	4-Pyridinamine
P075	\1\ 54-11-5	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-, & salts

Hazardous waste No.	Chemical abstracts No.	Substance
P204	57-47-6	Pyrrolo[2,3-b]indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8- trimethyl-, methylcarbamate (ester), (3aS-cis)-.
P114	12039-52-0	Selenious acid, dithallium(1+) salt
P103	630-10-4	Selenourea
P104	506-64-9	Silver cyanide
P104	506-64-9	Silver cyanide Ag(CN)
P105	26628-22-8	Sodium azide
P106	143-33-9	Sodium cyanide
P106	143-33-9	Sodium cyanide Na(CN)
P108	\1\ 57-24-9	Strychnidin-10-one, & salts
P018	357-57-3	Strychnidin-10-one, 2,3-dimethoxy-
P108	\1\ 57-24-9	Strychnine, & salts
P115	7446-18-6	Sulfuric acid, dithallium(1+) salt
P109	3689-24-5	Tetraethyldithiopyrophosphate
P110	78-00-2	Tetraethyl lead
P111	107-49-3	Tetraethyl pyrophosphate
P112	509-14-8	Tetranitromethane (R)
P062	757-58-4	Tetraphosphoric acid, hexaethyl ester
P113	1314-32-5	Thallic oxide
P113	1314-32-5	Thallium oxide Tl ₂ O ₃
P114	12039-52-0	Thallium(I) selenite
P115	7446-18-6	Thallium(I) sulfate
P109	3689-24-5	Thiodiphosphoric acid, tetraethyl ester
P045	39196-18-4	Thiofanox
P049	541-53-7	Thioimidodicarbonic diamide [(H ₂ N)C(S)] ₂ NH
P014	108-98-5	Thiophenol
P116	79-19-6	Thiosemicarbazide
P026	5344-82-1	Thiourea, (2-chlorophenyl)-
P072	86-88-4	Thiourea, 1-naphthalenyl-
P093	103-85-5	Thiourea, phenyl-
P185	26419-73-8	Tirpate.
P123	8001-35-2	Toxaphene
P118	75-70-7	Trichloromethanethiol
P119	7803-55-6	Vanadic acid, ammonium salt
P120	1314-62-1	Vanadium oxide V ₂ O ₅
P120	1314-62-1	Vanadium pentoxide
P084	4549-40-0	Vinylamine, N-methyl-N-nitroso-
P001	\1\ 81-81-2	Warfarin, & salts, when present at concentrations greater than 0.3%
P205	137-30-4	Zinc, bis(dimethylcarbamodithioato- S,S[prime])- ,
P121	557-21-1	Zinc cyanide
P121	557-21-1	Zinc cyanide Zn(CN) ₂
P122	1314-84-7	Zinc phosphide Zn ₃ P ₂ , when present at concentrations greater than 10% (R,T)
P205	137-30-4	Ziram.

\1\ CAS Number given for parent compound only.

(f) The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products referred to in paragraphs (a) through (d) of this section, are identified as toxic wastes (T), unless otherwise designated and are subject to the small quantity generator exclusion defined in §261.5 (a) and (g).

Hazardous waste No.	Chemical abstracts No.	Substance
U394	30558-43-1	A2213.
U001	75-07-0	Acetaldehyde (I)
U034	75-87-6	Acetaldehyde, trichloro-
U187	62-44-2	Acetamide, N-(4-ethoxyphenyl)-
U005	53-96-3	Acetamide, N-9H-fluoren-2-yl-
U240	\1\ 94-75-7	Acetic acid, (2,4-dichlorophenoxy)-, salts & esters
U112	141-78-6	Acetic acid ethyl ester (I)
U144	301-04-2	Acetic acid, lead(2+) salt
U214	563-68-8	Acetic acid, thallium(1+) salt
see F027	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-
U002	67-64-1	Acetone (I)
U003	75-05-8	Acetonitrile (I,T)
U004	98-86-2	Acetophenone
U005	53-96-3	2-Acetylaminofluorene
U006	75-36-5	Acetyl chloride (C,R,T)
U007	79-06-1	Acrylamide
U008	79-10-7	Acrylic acid (I)
U009	107-13-1	Acrylonitrile
U011	61-82-5	Amitrole
U012	62-53-3	Aniline (I,T)
U136	75-60-5	Arsinic acid, dimethyl-
U014	492-80-8	Auramine
U015	115-02-6	Azaserine
U010	50-07-7	Azirino[2[prime],3[prime]:3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8- [[(aminocarbonyl)oxy]methyl]- 1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5- methyl-, [1aS-(1aalpha, 8beta,8aalpha,8balpha)]-
U280	101-27-9	Barban.
U278	22781-23-3	Bendiocarb.
U364	22961-82-6	Bendiocarb phenol.
U271	17804-35-2	Benomyl.
U157	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3- methyl-
U016	225-51-4	Benz[c]acridine
U017	98-87-3	Benzal chloride
U192	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1- dimethyl-2-propynyl)-
U018	56-55-3	Benz[a]anthracene
U094	57-97-6	Benz[a]anthracene, 7,12-dimethyl-
U012	62-53-3	Benzenamine (I,T)
U014	492-80-8	Benzenamine, 4,4[prime]- carbonimidoylbis[N,N-dimethyl-

Hazardous waste No.	Chemical abstracts No.	Substance
U049	3165-93-3	Benzenamine, 4-chloro-2-methyl-, hydrochloride
U093	60-11-7	Benzenamine, N,N-dimethyl-4- (phenylazo)-
U328	95-53-4	Benzenamine, 2-methyl-
U353	106-49-0	Benzenamine, 4-methyl-
U158	101-14-4	Benzenamine, 4,4[prime]-methylenebis[2- chloro-
U222	636-21-5	Benzenamine, 2-methyl-, hydrochloride
U181	99-55-8	Benzenamine, 2-methyl-5-nitro-
U019	71-43-2	Benzene (I,T)
U038	510-15-6	Benzeneacetic acid, 4-chloro-alpha-(4- chlorophenyl)-alpha-hydroxy-, ethyl ester
U030	101-55-3	Benzene, 1-bromo-4-phenoxy-
U035	305-03-3	Benzenebutanoic acid, 4-[bis(2- chloroethyl)amino]-
U037	108-90-7	Benzene, chloro-
U221	25376-45-8	Benzenediamine, ar-methyl-
U028	117-81-7	1,2-Benzenedicarboxylic acid, bis(2- ethylhexyl) ester
U069	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester
U088	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester
U102	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester
U070	95-50-1	Benzene, 1,2-dichloro-
U071	541-73-1	Benzene, 1,3-dichloro-
U072	106-46-7	Benzene, 1,4-dichloro-
U060	72-54-8	Benzene, 1,1[prime]-(2,2- dichloroethylidene)bis[4-chloro-
U017	98-87-3	Benzene, (dichloromethyl)-
U223	26471-62-5	Benzene, 1,3-diisocyanatomethyl- (R,T)
U239	1330-20-7	Benzene, dimethyl- (I,T)
U201	108-46-3	1,3-Benzenediol
U127	118-74-1	Benzene, hexachloro-
U056	110-82-7	Benzene, hexahydro- (I)
U220	108-88-3	Benzene, methyl-
U105	121-14-2	Benzene, 1-methyl-2,4-dinitro-
U106	606-20-2	Benzene, 2-methyl-1,3-dinitro-
U055	98-82-8	Benzene, (1-methylethyl)- (I)
U169	98-95-3	Benzene, nitro-
U183	608-93-5	Benzene, pentachloro-
U185	82-68-8	Benzene, pentachloronitro-
U020	98-09-9	Benzenesulfonic acid chloride (C,R)
U020	98-09-9	Benzenesulfonyl chloride (C,R)
U207	95-94-3	Benzene, 1,2,4,5-tetrachloro-

Hazardous waste No.	Chemical abstracts No.	Substance
U061	50-29-3	Benzene, 1,1[prime]-(2,2,2-trichloroethylidene)bis[4-chloro-
U247	72-43-5	Benzene, 1,1[prime]-(2,2,2-trichloroethylidene)bis[4-methoxy-
U023	98-07-7	Benzene, (trichloromethyl)-
U234	99-35-4	Benzene, 1,3,5-trinitro-
U021	92-87-5	Benzidine
U202	\1\ 81-07-2	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide, & salts
U278	22781-23-3	1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate.
U364	22961-82-6	1,3-Benzodioxol-4-ol, 2,2-dimethyl-,
U203	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-
U141	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-
U367	1563-38-8	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-
U090	94-58-6	1,3-Benzodioxole, 5-propyl-
U064	189-55-9	Benzo[rsst]pentaphene
U248	\1\81-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenyl-butyl)-, & salts, when present at concentrations of 0.3% or less
U022	50-32-8	Benzo[a]pyrene
U197	106-51-4	p-Benzoquinone
U023	98-07-7	Benzotrichloride (C,R,T)
U085	1464-53-5	2,2[prime]-Bioxirane
U021	92-87-5	[1,1[prime]-Biphenyl]-4,4[prime]-diamine
U073	91-94-1	[1,1[prime]-Biphenyl]-4,4[prime]-diamine, 3,3[prime]-dichloro-
U091	119-90-4	[1,1[prime]-Biphenyl]-4,4[prime]-diamine, 3,3[prime]-dimethoxy-
U095	119-93-7	[1,1[prime]-Biphenyl]-4,4[prime]-diamine, 3,3[prime]-dimethyl-
U225	75-25-2	Bromoform
U030	101-55-3	4-Bromophenyl phenyl ether
U128	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U172	924-16-3	1-Butanamine, N-butyl-N-nitroso-
U031	71-36-3	1-Butanol (I)
U159	78-93-3	2-Butanone (I,T)
U160	1338-23-4	2-Butanone, peroxide (R,T)
U053	4170-30-3	2-Butenal
U074	764-41-0	2-Butene, 1,4-dichloro- (I,T)
U143	303-34-4	2-Butenoic acid, 2-methyl-, 7-[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z),7(2S*,3R*),7aalpha]]-
U031	71-36-3	n-Butyl alcohol (I)
U136	75-60-5	Cacodylic acid

Hazardous waste No.	Chemical abstracts No.	Substance
U032	13765-19-0	Calcium chromate
U372	10605-21-7	Carbamic acid, 1H-benzimidazol-2-yl, methyl ester.
U271	17804-35-2	Carbamic acid, [1- [(butylamino)carbonyl]-1H- benzimidazol-2-yl]-, methyl ester.
U280	101-27-9	Carbamic acid, (3-chlorophenyl)-, 4- chloro-2-butynyl ester.
U238	51-79-6	Carbamic acid, ethyl ester
U178	615-53-2	Carbamic acid, methylnitroso-, ethyl ester
U373	122-42-9	Carbamic acid, phenyl-, 1-methylethyl ester.
U409	23564-05-8	Carbamic acid, [1,2-phenylenebis (iminocarbonothioyl)]bis-, dimethyl ester.
U097	79-44-7	Carbamic chloride, dimethyl-
U389	2303-17-5	Carbamothioic acid, bis(1-methylethyl)- , S-(2,3,3-trichloro-2-propenyl) ester.
U387	52888-80-9	Carbamothioic acid, dipropyl-, S- (phenylmethyl) ester.
U114	\1\ 111-54-6	Carbamodithioic acid, 1,2- ethanedithiolbis-, salts & esters
U062	2303-16-4	Carbamothioic acid, bis(1-methylethyl)- , S-(2,3-dichloro-2-propenyl) ester
U279	63-25-2	Carbaryl.
U372	10605-21-7	Carbendazim.
U367	1563-38-8	Carbofuran phenol.
U215	6533-73-9	Carbonic acid, dithallium(1+) salt
U033	353-50-4	Carbonic difluoride
U156	79-22-1	Carbonochloridic acid, methyl ester (I,T)
U033	353-50-4	Carbon oxyfluoride (R,T)
U211	56-23-5	Carbon tetrachloride
U034	75-87-6	Chloral
U035	305-03-3	Chlorambucil
U036	57-74-9	Chlordane, alpha & gamma isomers
U026	494-03-1	Chlornaphazin
U037	108-90-7	Chlorobenzene
U038	510-15-6	Chlorobenzilate
U039	59-50-7	p-Chloro-m-cresol
U042	110-75-8	2-Chloroethyl vinyl ether
U044	67-66-3	Chloroform
U046	107-30-2	Chloromethyl methyl ether
U047	91-58-7	beta-Chloronaphthalene
U048	95-57-8	o-Chlorophenol
U049	3165-93-3	4-Chloro-o-toluidine, hydrochloride
U032	13765-19-0	Chromic acid H2 CrO4, calcium salt
U050	218-01-9	Chrysene

Hazardous waste No.	Chemical abstracts No.	Substance
U051	.....	Creosote
U052	1319-77-3	Cresol (Cresylic acid)
U053	4170-30-3	Crotonaldehyde
U055	98-82-8	Cumene (I)
U246	506-68-3	Cyanogen bromide (CN)Br
U197	106-51-4	2,5-Cyclohexadiene-1,4-dione
U056	110-82-7	Cyclohexane (I)
U129	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6b eta)-
U057	108-94-1	Cyclohexanone (I)
U130	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5- hexachloro-
U058	50-18-0	Cyclophosphamide
U240	\1\ 94-75-7	2,4-D, salts & esters
U059	20830-81-3	Daunomycin
U060	72-54-8	DDD
U061	50-29-3	DDT
U062	2303-16-4	Diallate
U063	53-70-3	Dibenz[a,h]anthracene
U064	189-55-9	Dibenzo[a,i]pyrene
U066	96-12-8	1,2-Dibromo-3-chloropropane
U069	84-74-2	Dibutyl phthalate
U070	95-50-1	o-Dichlorobenzene
U071	541-73-1	m-Dichlorobenzene
U072	106-46-7	p-Dichlorobenzene
U073	91-94-1	3,3[prime]-Dichlorobenzidine
U074	764-41-0	1,4-Dichloro-2-butene (I,T)
U075	75-71-8	Dichlorodifluoromethane
U078	75-35-4	1,1-Dichloroethylene
U079	156-60-5	1,2-Dichloroethylene
U025	111-44-4	Dichloroethyl ether
U027	108-60-1	Dichloroisopropyl ether
U024	111-91-1	Dichloromethoxy ethane
U081	120-83-2	2,4-Dichlorophenol
U082	87-65-0	2,6-Dichlorophenol
U084	542-75-6	1,3-Dichloropropene
U085	1464-53-5	1,2:3,4-Diepoxybutane (I,T)
U108	123-91-1	1,4-Diethyleneoxide
U028	117-81-7	Diethylhexyl phthalate
U395	5952-26-1	Diethylene glycol, dicarbamate.
U086	1615-80-1	N,N[prime]-Diethylhydrazine
U087	3288-58-2	O,O-Diethyl S-methyl dithiophosphate
U088	84-66-2	Diethyl phthalate
U089	56-53-1	Diethylstilbesterol
U090	94-58-6	Dihydrosafrole
U091	119-90-4	3,3[prime]-Dimethoxybenzidine
U092	124-40-3	Dimethylamine (I)
U093	60-11-7	p-Dimethylaminoazobenzene
U094	57-97-6	7,12-Dimethylbenz[a]anthracene
U095	119-93-7	3,3[prime]-Dimethylbenzidine

Hazardous waste No.	Chemical abstracts No.	Substance
U096	80-15-9	alpha,alpha-Dimethylbenzylhydroperoxide (R)
U097	79-44-7	Dimethylcarbamoyl chloride
U098	57-14-7	1,1-Dimethylhydrazine
U099	540-73-8	1,2-Dimethylhydrazine
U101	105-67-9	2,4-Dimethylphenol
U102	131-11-3	Dimethyl phthalate
U103	77-78-1	Dimethyl sulfate
U105	121-14-2	2,4-Dinitrotoluene
U106	606-20-2	2,6-Dinitrotoluene
U107	117-84-0	Di-n-octyl phthalate
U108	123-91-1	1,4-Dioxane
U109	122-66-7	1,2-Diphenylhydrazine
U110	142-84-7	Dipropylamine (I)
U111	621-64-7	Di-n-propylnitrosamine
U041	106-89-8	Epichlorohydrin
U001	75-07-0	Ethanal (I)
U404	121-44-8	Ethanamine, N,N-diethyl-
U174	55-18-5	Ethanamine, N-ethyl-N-nitroso-
U155	91-80-5	1,2-Ethanediamine, N,N-dimethyl-N[prime]-2-pyridinyl-N[prime]-(2-thienylmethyl)-
U067	106-93-4	Ethane, 1,2-dibromo-
U076	75-34-3	Ethane, 1,1-dichloro-
U077	107-06-2	Ethane, 1,2-dichloro-
U131	67-72-1	Ethane, hexachloro-
U024	111-91-1	Ethane, 1,1[prime]-[methylenebis(oxy)]bis[2-chloro-
U117	60-29-7	Ethane, 1,1[prime]-oxybis-(I)
U025	111-44-4	Ethane, 1,1[prime]-oxybis[2-chloro-
U184	76-01-7	Ethane, pentachloro-
U208	630-20-6	Ethane, 1,1,1,2-tetrachloro-
U209	79-34-5	Ethane, 1,1,2,2-tetrachloro-
U218	62-55-5	Ethanethioamide
U226	71-55-6	Ethane, 1,1,1-trichloro-
U227	79-00-5	Ethane, 1,1,2-trichloro-
U410	59669-26-0	Ethanimidothioic acid, N,N[prime]-[thiobis[(methylimino)carbonyloxy]]bis-, dimethyl ester
U394	30558-43-1	Ethanimidothioic acid, 2-(dimethylamino)-N-hydroxy-2-oxo-, methyl ester.
U359	110-80-5	Ethanol, 2-ethoxy-
U173	1116-54-7	Ethanol, 2,2[prime]-(nitrosoimino)bis-
U395	5952-26-1	Ethanol, 2,2[prime]-oxybis-, dicarbamate.
U004	98-86-2	Ethanone, 1-phenyl-
U043	75-01-4	Ethene, chloro-
U042	110-75-8	Ethene, (2-chloroethoxy)-
U078	75-35-4	Ethene, 1,1-dichloro-
U079	156-60-5	Ethene, 1,2-dichloro-, (E)-

Hazardous waste No.	Chemical abstracts No.	Substance
U210	127-18-4	Ethene, tetrachloro-
U228	79-01-6	Ethene, trichloro-
U112	141-78-6	Ethyl acetate (I)
U113	140-88-5	Ethyl acrylate (I)
U238	51-79-6	Ethyl carbamate (urethane)
U117	60-29-7	Ethyl ether (I)
U114	\1\ 111-54-6	Ethylenebisdithiocarbamic acid, salts & esters
U067	106-93-4	Ethylene dibromide
U077	107-06-2	Ethylene dichloride
U359	110-80-5	Ethylene glycol monoethyl ether
U115	75-21-8	Ethylene oxide (I,T)
U116	96-45-7	Ethylenethiourea
U076	75-34-3	Ethylidene dichloride
U118	97-63-2	Ethyl methacrylate
U119	62-50-0	Ethyl methanesulfonate
U120	206-44-0	Fluoranthene
U122	50-00-0	Formaldehyde
U123	64-18-6	Formic acid (C,T)
U124	110-00-9	Furan (I)
U125	98-01-1	2-Furancarboxaldehyde (I)
U147	108-31-6	2,5-Furandione
U213	109-99-9	Furan, tetrahydro-(I)
U125	98-01-1	Furfural (I)
U124	110-00-9	Furfuran (I)
U206	18883-66-4	Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-, D-
U206	18883-66-4	D-Glucose, 2-deoxy-2- [[(methylnitrosoamino)- carbonyl]amino]-
U126	765-34-4	Glycidylaldehyde
U163	70-25-7	Guanidine, N-methyl-N[prime]-nitro-N-nitroso-
U127	118-74-1	Hexachlorobenzene
U128	87-68-3	Hexachlorobutadiene
U130	77-47-4	Hexachlorocyclopentadiene
U131	67-72-1	Hexachloroethane
U132	70-30-4	Hexachlorophene
U243	1888-71-7	Hexachloropropene
U133	302-01-2	Hydrazine (R,T)
U086	1615-80-1	Hydrazine, 1,2-diethyl-
U098	57-14-7	Hydrazine, 1,1-dimethyl-
U099	540-73-8	Hydrazine, 1,2-dimethyl-
U109	122-66-7	Hydrazine, 1,2-diphenyl-
U134	7664-39-3	Hydrofluoric acid (C,T)
U134	7664-39-3	Hydrogen fluoride (C,T)
U135	7783-06-4	Hydrogen sulfide
U135	7783-06-4	Hydrogen sulfide H2 S
U096	80-15-9	Hydroperoxide, 1-methyl-1-phenylethyl- (R)
U116	96-45-7	2-Imidazolidinethione

Hazardous waste No.	Chemical abstracts No.	Substance
U137	193-39-5	Indeno[1,2,3-cd]pyrene
U190	85-44-9	1,3-Isobenzofurandione
U140	78-83-1	Isobutyl alcohol (I,T)
U141	120-58-1	Isosafrole
U142	143-50-0	Kepone
U143	303-34-4	Lasiocarpine
U144	301-04-2	Lead acetate
U146	1335-32-6	Lead, bis (acetato-O)tetrahydroxytri-
U145	7446-27-7	Lead phosphate
U146	1335-32-6	Lead subacetate
U129	58-89-9	Lindane
U163	70-25-7	MNNG
U147	108-31-6	Maleic anhydride
U148	123-33-1	Maleic hydrazide
U149	109-77-3	Malononitrile
U150	148-82-3	Melphalan
U151	7439-97-6	Mercury
U152	126-98-7	Methacrylonitrile (I, T)
U092	124-40-3	Methanamine, N-methyl- (I)
U029	74-83-9	Methane, bromo-
U045	74-87-3	Methane, chloro- (I, T)
U046	107-30-2	Methane, chloromethoxy-
U068	74-95-3	Methane, dibromo-
U080	75-09-2	Methane, dichloro-
U075	75-71-8	Methane, dichlorodifluoro-
U138	74-88-4	Methane, iodo-
U119	62-50-0	Methanesulfonic acid, ethyl ester
U211	56-23-5	Methane, tetrachloro-
U153	74-93-1	Methanethiol (I, T)
U225	75-25-2	Methane, tribromo-
U044	67-66-3	Methane, trichloro-
U121	75-69-4	Methane, trichlorofluoro-
U036	57-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
U154	67-56-1	Methanol (I)
U155	91-80-5	Methapyrilene
U142	143-50-0	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-
U247	72-43-5	Methoxychlor
U154	67-56-1	Methyl alcohol (I)
U029	74-83-9	Methyl bromide
U186	504-60-9	1-Methylbutadiene (I)
U045	74-87-3	Methyl chloride (I,T)
U156	79-22-1	Methyl chlorocarbonate (I,T)
U226	71-55-6	Methyl chloroform
U157	56-49-5	3-Methylcholanthrene
U158	101-14-4	4,4[prime]-Methylenebis(2-chloroaniline)
U068	74-95-3	Methylene bromide
U080	75-09-2	Methylene chloride

Hazardous waste No.	Chemical abstracts No.	Substance
U159	78-93-3	Methyl ethyl ketone (MEK) (I,T)
U160	1338-23-4	Methyl ethyl ketone peroxide (R,T)
U138	74-88-4	Methyl iodide
U161	108-10-1	Methyl isobutyl ketone (I)
U162	80-62-6	Methyl methacrylate (I,T)
U161	108-10-1	4-Methyl-2-pentanone (I)
U164	56-04-2	Methylthiouracil
U010	50-07-7	Mitomycin C
U059	20830-81-3	5,12-Naphthacenedione, 8-acetyl-10-[(3-amino-2,3,6-trideoxy)-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-
U167	134-32-7	1-Naphthalenamine
U168	91-59-8	2-Naphthalenamine
U026	494-03-1	Naphthalenamine, N,N[prime]-bis(2-chloroethyl)-
U165	91-20-3	Naphthalene
U047	91-58-7	Naphthalene, 2-chloro-
U166	130-15-4	1,4-Naphthalenedione
U236	72-57-1	2,7-Naphthalenedisulfonic acid, 3,3[prime]-[(3,3[prime]-dimethyl[1,1[prime]-biphenyl]-4,4[prime]-diyl)bis(azo)bis[5-amino-4-hydroxy]-, tetrasodium salt
U279	63-25-2	1-Naphthalenol, methylcarbamate.
U166	130-15-4	1,4-Naphthoquinone
U167	134-32-7	alpha-Naphthylamine
U168	91-59-8	beta-Naphthylamine
U217	10102-45-1	Nitric acid, thallium(1+) salt
U169	98-95-3	Nitrobenzene (I,T)
U170	100-02-7	p-Nitrophenol
U171	79-46-9	2-Nitropropane (I,T)
U172	924-16-3	N-Nitrosodi-n-butylamine
U173	1116-54-7	N-Nitrosodiethanolamine
U174	55-18-5	N-Nitrosodiethylamine
U176	759-73-9	N-Nitroso-N-ethylurea
U177	684-93-5	N-Nitroso-N-methylurea
U178	615-53-2	N-Nitroso-N-methylurethane
U179	100-75-4	N-Nitrosopiperidine
U180	930-55-2	N-Nitrosopyrrolidine
U181	99-55-8	5-Nitro-o-toluidine
U193	1120-71-4	1,2-Oxathiolane, 2,2-dioxide
U058	50-18-0	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide
U115	75-21-8	Oxirane (I,T)
U126	765-34-4	Oxiranecarboxyaldehyde
U041	106-89-8	Oxirane, (chloromethyl)-
2	123-63-7	Paraldehyde
U183	608-93-5	Pentachlorobenzene

Hazardous waste No.	Chemical abstracts No.	Substance
U184	76-01-7	Pentachloroethane
U185	82-68-8	Pentachloronitrobenzene (PCNB)
See F027	87-86-5	Pentachlorophenol
U161	108-10-1	Pentanol, 4-methyl-
U186	504-60-9	1,3-Pentadiene (I)
U187	62-44-2	Phenacetin
U188	108-95-2	Phenol
U048	95-57-8	Phenol, 2-chloro-
U039	59-50-7	Phenol, 4-chloro-3-methyl-
U081	120-83-2	Phenol, 2,4-dichloro-
U082	87-65-0	Phenol, 2,6-dichloro-
U089	56-53-1	Phenol, 4,4[prime]-(1,2-diethyl-1,2-ethenediyl)bis-, (E)-
U101	105-67-9	Phenol, 2,4-dimethyl-
U052	1319-77-3	Phenol, methyl-
U132	70-30-4	Phenol, 2,2[prime]-methylenebis[3,4,6-trichloro-
U411	114-26-1	Phenol, 2-(1-methylethoxy)-, methylcarbamate.
U170	100-02-7	Phenol, 4-nitro-
See F027	87-86-5	Phenol, pentachloro-
See F027	58-90-2	Phenol, 2,3,4,6-tetrachloro-
See F027	95-95-4	Phenol, 2,4,5-trichloro-
See F027	88-06-2	Phenol, 2,4,6-trichloro-
U150	148-82-3	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-
U145	7446-27-7	Phosphoric acid, lead(2+) salt (2:3)
U087	3288-58-2	Phosphorodithioic acid, O,O-diethyl S-methyl ester
U189	1314-80-3	Phosphorus sulfide (R)
U190	85-44-9	Phthalic anhydride
U191	109-06-8	2-Picoline
U179	100-75-4	Piperidine, 1-nitroso-
U192	23950-58-5	Pronamide
U194	107-10-8	1-Propanamine (I,T)
U111	621-64-7	1-Propanamine, N-nitroso-N-propyl-
U110	142-84-7	1-Propanamine, N-propyl- (I)
U066	96-12-8	Propane, 1,2-dibromo-3-chloro-
U083	78-87-5	Propane, 1,2-dichloro-
U149	109-77-3	Propanedinitrile
U171	79-46-9	Propane, 2-nitro- (I,T)
U027	108-60-1	Propane, 2,2[prime]-oxybis[2-chloro-
U193	1120-71-4	1,3-Propane sultone
See F027	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-
U235	126-72-7	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U140	78-83-1	1-Propanol, 2-methyl- (I,T)
U002	67-64-1	2-Propanone (I)
U007	79-06-1	2-Propenamide
U084	542-75-6	1-Propene, 1,3-dichloro-

Hazardous waste No.	Chemical abstracts No.	Substance
U243	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-
U009	107-13-1	2-Propenenitrile
U152	126-98-7	2-Propenenitrile, 2-methyl- (I,T)
U008	79-10-7	2-Propenoic acid (I)
U113	140-88-5	2-Propenoic acid, ethyl ester (I)
U118	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester
U162	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U373	122-42-9	Propham.
U411	114-26-1	Propoxur.
U387	52888-80-9	Prosulfocarb.
U194	107-10-8	n-Propylamine (I,T)
U083	78-87-5	Propylene dichloride
U148	123-33-1	3,6-Pyridazinedione, 1,2-dihydro-
U196	110-86-1	Pyridine
U191	109-06-8	Pyridine, 2-methyl-
U237	66-75-1	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2- chloroethyl)amino]-
U164	56-04-2	4(1H)-Pyrimidinone, 2,3-dihydro-6- methyl-2-thioxo-
U180	930-55-2	Pyrrolidine, 1-nitroso-
U200	50-55-5	Reserpine
U201	108-46-3	Resorcinol
U202	\1\ 81-07-2	Saccharin, & salts
U203	94-59-7	Safrole
U204	7783-00-8	Selenious acid
U204	7783-00-8	Selenium dioxide
U205	7488-56-4	Selenium sulfide
U205	7488-56-4	Selenium sulfide SeS ₂ (R,T)
U015	115-02-6	L-Serine, diazoacetate (ester)
See F027	93-72-1	Silvex (2,4,5-TP)
U206	18883-66-4	Streptozotocin
U103	77-78-1	Sulfuric acid, dimethyl ester
U189	1314-80-3	Sulfur phosphide (R)
See F027	93-76-5	2,4,5-T
U207	95-94-3	1,2,4,5-Tetrachlorobenzene
U208	630-20-6	1,1,1,2-Tetrachloroethane
U209	79-34-5	1,1,2,2-Tetrachloroethane
U210	127-18-4	Tetrachloroethylene
See F027	58-90-2	2,3,4,6-Tetrachlorophenol
U213	109-99-9	Tetrahydrofuran (I)
U214	563-68-8	Thallium(I) acetate
U215	6533-73-9	Thallium(I) carbonate
U216	7791-12-0	Thallium(I) chloride
U216	7791-12-0	Thallium chloride Tlcl
U217	10102-45-1	Thallium(I) nitrate
U218	62-55-5	Thioacetamide
U410	59669-26-0	Thiodicarb.
U153	74-93-1	Thiomethanol (I,T)

Hazardous waste No.	Chemical abstracts No.	Substance
U244	137-26-8	Thioperoxydicarbonic diamide [(H ₂ N)C(S)] ₂ S ₂ , tetramethyl-
U409	23564-05-8	Thiophanate-methyl.
U219	62-56-6	Thiourea
U244	137-26-8	Thiram
U220	108-88-3	Toluene
U221	25376-45-8	Toluenediamine
U223	26471-62-5	Toluene diisocyanate (R,T)
U328	95-53-4	o-Toluidine
U353	106-49-0	p-Toluidine
U222	636-21-5	o-Toluidine hydrochloride
U389	2303-17-5	Triallate.
U011	61-82-5	1H-1,2,4-Triazol-3-amine
U227	79-00-5	1,1,2-Trichloroethane
U228	79-01-6	Trichloroethylene
U121	75-69-4	Trichloromonofluoromethane
See F027	95-95-4	2,4,5-Trichlorophenol
See F027	88-06-2	2,4,6-Trichlorophenol
U404	121-44-8	Triethylamine.
U234	99-35-4	1,3,5-Trinitrobenzene (R,T)
U182	123-63-7	1,3,5-Trioxane, 2,4,6-trimethyl-
U235	126-72-7	Tris(2,3-dibromopropyl) phosphate
U236	72-57-1	Trypan blue
U237	66-75-1	Uracil mustard
U176	759-73-9	Urea, N-ethyl-N-nitroso-
U177	684-93-5	Urea, N-methyl-N-nitroso-
U043	75-01-4	Vinyl chloride
U248	\1\ 81-81-2	Warfarin, & salts, when present at concentrations of 0.3% or less
U239	1330-20-7	Xylene (I)
U200	50-55-5	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester, (3beta,16beta,17alpha,18beta,20alpha)-
U249	1314-84-7	Zinc phosphide Zn ₃ P ₂ , when present at concentrations of 10% or less

\1\ CAS Number given for parent compound only.

§ 261.32 Hazardous wastes from specific sources.

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
Wood preservation: K001	Bottom sediment from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.	(T)

Inorganic pigments:		
K002...	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	(T)
K003...	Wastewater treatment sludge from the production of molybdate orange pigments.	(T)
K004..	Wastewater treatment sludge from the production of zinc yellow pigments.	(T)
K005...	Wastewater treatment sludge from the production of chrome green pigments.	(T)
K006...	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).	(T)
K007....	Wastewater treatment sludge from the production of iron blue pigments.	(T)
K008....	Oven residue from the production of chrome oxide green pigments.	(T)
Organic chemicals:		
K009....	Distillation bottoms from the production of acetaldehyde from ethylene.	(T)
K010...	Distillation side cuts from the production of acetaldehyde from ethylene.	(T)
K011...	Bottom stream from the wastewater stripper in the production of acrylonitrile.	(R, T)
K013...	Bottom stream from the acetonitrile column in the production of acrylonitrile.	(R, T)
K014....	Bottoms from the acetonitrile purification column in the production of acrylonitrile.	(T)
K015...	Still bottoms from the distillation of benzyl chloride.	(T)
K016....	Heavy ends or distillation residues from the production of carbon tetrachloride.	(T)
K017....	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.	(T)
K018....	Heavy ends from the fractionation column in ethyl chloride production.	(T)
K019....	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.	(T)
K020....	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.	(T)
K021....	Aqueous spent antimony catalyst waste from fluoromethanes production.	(T)
K022...	Distillation bottom tars from the production of phenol/acetone from cumene.	(T)
K023.....	Distillation light ends from the production of phthalic anhydride from naphthalene.	(T)
K024....	Distillation bottoms from the production of phthalic anhydride from naphthalene.	(T)
K025....	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	(T)

K026....	Stripping still tails from the production of methyl pyridines.	(T)
K027..	Centrifuge and distillation residues from toluene diisocyanate production.	(R, T)
K028....	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	(T)
K029....	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.	(T)
K030...	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.	(T)
K083....	Distillation bottoms from aniline production.	(T)
K085.....	Distillation or fractionation column bottoms from the production of chlorobenzenes.	(T)
K093...	Distillation light ends from the production of phthalic anhydride from ortho-xylene.	(T)
K094....	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.	(T)
K095.....	Distillation bottoms from the production of 1,1,1-trichloroethane.	(T)
K096....	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.	(T)
K103....	Process residues from aniline extraction from the production of aniline.	(T)
K104....	Combined wastewater streams generated from nitrobenzene/aniline production.	(T)
K105.....	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	(T)
K107....	Column bottoms from product separation from the production of 1,1-dimethyl-hydrazine (UDMH) from carboxylic acid hydrazines.	(C,T)
K108...	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(I,T)
K109....	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(T)
K110...	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	(T)
K111....	Product washwaters from the production of dinitrotoluene via nitration of toluene.	(C,T)
K112..	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K113...	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)

K114...	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K115....	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	(T)
K116....	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.	(T)
K117....	Wastewater from the reactor vent gas scrubber in the production of ethylenedibromide via bromination of ethene.	(T)
K118...	Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	(T)
K136....	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	(T)
K149...	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups, (This waste does not include still bottoms from the distillation of benzyl chloride.).	(T)
K150....	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	(T)
K151...	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-)chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	(T)
K156...	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)
K157...	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)
K158...	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)

K159...	Organics from the treatment of thiocarbamate wastes.	(T)
K161....	Purification solids (including filtration, evaporation, and centrifugation solids), bag house dust and floor sweepings from the production of dithiocarbamate acids and their salts. (This listing does not include K125 or K126.).	(R,T)
K174.....	Wastewater treatment sludges from the production of ethylene dichloride or vinylchloride monomer (including sludges that result from commingled ethylene dichloride or vinyl chloride monomer wastewater and other wastewater), unless the sludges meet the following conditions: (i) they are disposed of in a subtitle C or non-hazardous landfill licensed or permitted by the state or federal government; (ii) they are not otherwise placed on the land prior to final disposal; and (iii) the generator maintains documentation demonstrating that the waste was either disposed of in an on-site landfill or consigned to a transporter or disposal facility that provided a written commitment to dispose of the waste in an off-site landfill. Respondents in any action brought to enforce the requirements of subtitle C must, upon a showing by the government that the respondent managed wastewater treatment sludges from the production of vinyl chloride monomer or ethylene dichloride, demonstrate that they meet the terms of the exclusion set forth above. In doing so, they must provide appropriate documentation (e.g., contracts between the generator and the landfill owner/operator, invoices documenting delivery of waste to landfill, etc.) that the terms of the exclusion were met.	(T)
K175...	Wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process.	(T)
Inorganic chemicals:		
K071....	Brine purification muds from the mercury cell process in chlorine production, where separately pre purified brine is not used.	(T)
K073...	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	(T)
K106...	Wastewater treatment sludge from the mercury cell process in chlorine production.	(T)
K176...	Baghouse filters from the production of antimony oxide, including filters from the production of intermediates (e.g., antimony metal or crude antimony oxide).	(E)
K177...	Slag from the production of antimony oxide that is speculatively accumulated or disposed, including slag from the production of intermediates (e.g., antimony metal or crude antimony oxide).	(T)

K178...	Residues from manufacturing and manufacturing-site storage of ferric chloride from acids formed during the production of titanium dioxide using the chloride-ilmenite process.	(T)
Pesticides:		
K031..	By-product salts generated in the production of MSMA and cacodylic acid.	(T)
K032...	Wastewater treatment sludge from the production of chlordane.	(T)
K033...	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	(T)
K034....	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	(T)
K035...	Wastewater treatment sludges generated in the production of creosote.	(T)
K036....	Still bottoms from toluene reclamation distillation in the production of disulfoton.	(T)
K037....	Wastewater treatment sludges from the production of disulfoton.	(T)
K038...	Wastewater from the washing and stripping of phorate production.	(T)
K039...	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.	(T)
K040....	Wastewater treatment sludge from the production of phorate.	(T)
K041....	Wastewater treatment sludge from the production of toxaphene.	(T)
K042....	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	(T)
K043...	2,6-Dichlorophenol waste from the production of 2,4-D.	(T)
K097....	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.	(T)
K098....	Untreated process wastewater from the production of toxaphene.	(T)
K099....	Untreated wastewater from the production of 2,4-D.	(T)
K123....	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salt.	(T)
K124....	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.	(C, T)
K125...	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.	(T)
K126....	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.	(T)

K131...	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.	(C, T)
K132...	Spent absorbent and wastewater separator solids from the production of methyl bromide.	(T)
Explosives:		
K044....	Wastewater treatment sludges from the manufacturing and processing of explosives.	(R)
K045...	Spent carbon from the treatment of wastewater containing explosives.	(R)
K046....	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	(T)
K047....	Pink/red water from TNT operations.	(R)
Petroleum refining:		
K048....	Dissolved air flotation (DAF) float from the petroleum refining industry.	(T)
K049....	Slop oil emulsion solids from the petroleum refining industry.	(T)
K050....	Heat exchanger bundle cleaning sludge from the petroleum refining industry.	(T)
K051....	API separator sludge from the petroleum refining industry.	(T)
K052...	Tank bottoms (leaded) from the petroleum refining industry.	(T)
K169.....	Crude oil storage tank sediment from petroleum refining operations.	(T)
K170.....	Clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations.	(T)
K171.....	Spent Hydro treating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).	(I,T)
K172.....	Spent Hydro refining catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).	(I,T)
Iron and steel:		
K061....	Emission control dust/ sludge from the primary production of steel in electric furnaces.	(T)
K062.....	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).	(C,T)

Primary copper: Primary lead: Primary zinc: Primary aluminum:		
K088.....	Spent potliners from primary aluminum reduction.	(T)
Ferroalloys: Secondary lead:		
K069....	Emission control dust/sludge from secondary lead smelting. (Note: This listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further administrative action is taken. If EPA takes further action effecting this stay, EPA will publish a notice of the action in the Federal Register.	(T)
K100....	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	(T)
Veterinary pharmaceuticals:		
K084.....	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K101....	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	(T)
K102....	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organoarsenic compounds.	(T)
Ink formulation:		
K086.....	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.	(T)
Coking:		
K060....	Ammonia still lime sludge from coking operations.	(T)
K087....	Decanter tank tar sludge from coking operations.	(T)
K141..	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludges from coking operations).	(T)
K142...	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.	(T)
K143...	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.	(T)

K144....	Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by- products produced from coal.	(T)
K145.....	Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.	(T)
K147.....	Tar storage tank residues from coal tar refining.	(T)
K148....	Residues from coal tar distillation, including but not limited to, still bottoms.	(T)

CHAPTER 12 - ATTACHMENT 6
EPA Notification of Regulated Waste Activity

Notification of Regulated Waste Activity (EPA Form 8700-12) and RCRA Hazardous Waste Part A Permit Application (EPA Form 8700-23)

<http://www.epa.gov/epaoswer/hazwaste/data/form8700/forms.htm>



United States
Environmental Protection
Agency

March 2005

Notification of Regulated Waste Activity

Instructions and Form

EPA Form 8700-12

(OMB# 2050-0028; Expires 1/31/2006)

**Office of Solid Waste
5301W
Washington, DC 20460**

Notification of Regulated Waste Activity Instructions and Form

Section 3010 of Subtitle C of Resource Conservation and Recovery Act (RCRA) requires any person who generates, transports, or recycles regulated wastes or who owns or operates a facility for the treatment, storage, or disposal of regulated wastes to notify EPA of their activities, including the location and general description of the activities and the regulated wastes handled. Respondents must submit the information required in the Notification of Regulated Waste Activity Instructions and Form booklet by completing the RCRA Subtitle C Site Identification Form [EPA Form 8700-12]. As required by statute, EPA promulgated regulations to implement these notification requirements at 40 CFR Parts 262, 263, 264, 265, 266, 270, 273, and 279. EPA needs this information to determine the universe of persons who generate, handle, and manage these regulated wastes; assign EPA Identification Numbers; and ensure that these regulated wastes are managed in a way that protects human health and the environment as required by RCRA. This is mandatory reporting by the respondents.

EPA enters notification information submitted by respondents into RCRAInfo, the EPA national database, and assigns EPA Identification Numbers. EPA uses this information to identify the universe of regulated waste generators, handlers, and managers and their specific regulated waste activities. EPA also uses the information for tracking and for a variety of enforcement and inspection purposes. Finally, EPA uses this information to ensure that regulated waste is managed properly, that statutory provisions are upheld, and that regulations are adhered to by facility owners or operators.

Section 3007(b) of RCRA and 40 CFR Part 2, Subpart B, which defines EPA's general policy on public disclosure of information, both contain provisions for confidentiality. However, the Agency does not anticipate that businesses will assert a claim of confidentiality covering all or part of the Notification of Regulated Waste Activity. If such a claim were asserted, EPA must and will treat the information in accordance with the regulations cited above. EPA also will assure that this information collection complies with the Privacy Act of 1974 and OMB Circular 108.

Estimated Burden: The reporting burden for information collection requirements associated with initial notification requirements is estimated to be approximately 4.25 hours. The burden estimate includes time for reading the regulations and preparing and submitting the initial notification. The reporting burden for information collection requirements associated with subsequent notification is estimated to be approximately 1.84 hours. The burden estimate includes time for reading the regulations, preparing and submitting a subsequent notification.

To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, EPA has established a public docket for this ICR under Docket ID Number RCRA-2002-0021, which is available for public viewing at the RCRA Docket in the EPA Docket Center (EPA/DC), EPA West, Room B102, 1301 Constitution Ave., NW, Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Reading Room is (202) 566-1744, and the telephone number for the RCRA Docket is (202) 566-0270. An electronic version of the public docket is available through EPA Dockets (EDOCKET) at - <http://www.epa.gov/edocket>

Use EDOCKET to submit or view public comments, access the index listing of the contents of the public docket, and to access those documents in the public docket that are available electronically. Once in the system, select "search," then key in the docket ID number identified above. Also, you can send comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, DC 20503, Attention: Desk Office for EPA. Please include the EPA Docket ID Number RCRA-2002-0021 and OMB Control Number 2050-0028 in any correspondence.

Notification of Regulated Waste Activity

Instructions and Form

This booklet is designed to help you determine if you are subject to requirements under the *Resource Conservation and Recovery Act* (RCRA) for notifying the U.S. Environmental Protection Agency (EPA) of your regulated waste activities. Regulated wastes are hazardous wastes as defined by 40 CFR Part 261, universal wastes as defined by 40 CFR Part 273, and used oil as defined by 40 CFR Part 279. The instructions contained in this booklet will assist you in obtaining an EPA Identification Number by completing and submitting the RCRA Subtitle C Site Identification Form (Site Identification Form or Site ID Form) [EPA Form 8700-12] for Initial Notifications or in revising your Site Identification Form if you are required to submit a Subsequent Notification. RCRA is a Federal law. If you are regulated but do not comply with the RCRA notification requirements, you may be subject to civil penalties.

Large Quantity Handlers of Universal Waste and Used Oil Handlers have the option of submitting either the Site Identification Form or a letter to notify EPA of their regulated waste activities, including both initial and subsequent notifications. As noted above, the instructions in this booklet refer only to completing and submitting the RCRA Subtitle C Site Identification Form. However, the circumstances under which these handlers must notify EPA of their regulated waste activities, the data they must provide, and the procedures they must follow, as described in this booklet, apply to submitting the Site Identification Form or a letter.

Note: *Although this booklet contains information and instructions for completing a Notification of Regulated Waste Activity, it should not be considered a substitute for the regulations in Title 40 of the Code of Federal Regulations (40 CFR). Rather, this booklet serves as a supplement to the regulations and provides additional information not contained in 40 CFR. As a handler of regulated wastes, you are responsible for learning and complying with all the requirements that apply to you and your regulated waste activities.*

In addition, remember that this booklet and the regulations in 40 CFR address only the Federal hazardous waste program. Many States may have notification requirements that differ from the Federal requirements; those States may use Site Identification Form or they may use a similar State form that requires information not requested in the EPA form. Again, it is your responsibility to make sure that you have completed and submitted all forms required under the Federal or your State program.

We realize that the regulations are complex. Although we are not providing reprints of the 40 CFR regulations in this booklet, copies of the Federal regulations are available from EPA (see below). We have listed the addresses and phone numbers of the contacts in each State who can

Notification of Regulated Waste Activity

answer your questions and help you understand the Federal and State requirements that apply to you; these are in the contact list found on the Internet at:

<http://www.epa.gov/epaoswer/hazwaste/data/form8700/forms.htm#links>

Click on the document under the section:

Where can I obtain assistance with the Notification of Regulated Waste Activity requirements and the RCRA Subtitle C Site Identification Form? Where should I send my completed form?

In addition to those contacts, there are several other sources available to help with your questions and provide information on EPA regulations:

- **RCRA Frequently Asked Questions Internet Page.** This allows users to find answers to commonly asked questions that cover a wide range of RCRA issues and topics. Find at:

<http://waste.custhelp.com/cgi-bin/waste.cfg/php/enduser/entry.php>

- **RCRA Online.** The RCRA Online database is designed to enable users to locate documents, including publications and other outreach materials, that cover a wide range of RCRA issues and topics. Find at:

<http://www.epa.gov/rcraonline/>

- **EPA Internet page for RCRA regulations at:**

<http://www.epa.gov/docs/epacfr40/chapt-I.info/>

- **Compliance Assistance Centers.** The Environmental Protection Agency (EPA) has sponsored partnerships with industry, academic institutions, environmental groups, and other agencies to launch sector-specific Compliance Assistance Centers (Centers). Each Center addresses real world issues in understandable language for you to understand Federal environmental requirements and how to save money through pollution prevention techniques. Visit the Compliance Assistance Centers at: <http://www.assistancecenters.net>

There are several Centers listed; you may find one for your business. If not, you may want to review “Do I Need a Hazardous Waste Generator Identification Number?” and other questions at: <http://www.transource.org/hazmatz.htm>

- **EPA National Compliance Assistance Clearinghouse.** The Clearinghouse is a comprehensive source of compliance assistance information and resources. Use Internet links to Federal, State, local, and other compliance assistance providers to find the tools you need. Visit the Clearinghouse at: <http://www.epa.gov/clearinghouse>
- EPA Small Business Ombudsman Office -- 1-800-368-5888
- Your Trade Association

Notification of Regulated Waste Activity

Initial Notifications

If you do not currently have an EPA Identification Number and you handle regulated waste, you must submit an initial notification. Please refer to information contained in Sections 1 through 3 of this booklet to help you determine whether you handle a regulated waste, whether any exemptions or exclusions apply to you, and how you should file Notification of Regulated Waste Activity. Circumstances under which you should submit an initial notification include:

1. If you generate, transport, treat, store, or dispose of hazardous wastes. Refer to Section 1 for further information and a description of exclusions or exemptions; or
2. If you recycle hazardous wastes. (Recyclable materials are defined as hazardous wastes that are recycled.) The recycling process itself is exempt from regulation, but you must notify EPA and obtain an EPA Identification Number prior to recycling recyclable materials. Refer to Section 1 for further information and a description of exemptions; or
3. If you are a large quantity handler of universal waste. Refer to Section 2 for further information and a description of exemptions. (Notification is required for people who have not previously notified EPA of their hazardous waste activities or who have not already sent a notification to EPA as required by 40 CFR Part 273.32); or
4. If you transport, process, or re-refine used oil; burn off-specification used oil for energy recovery; or market used oil. Refer to Section 3 for further information and for a description of exemptions. (Notification is required for people who have not previously notified EPA of their hazardous waste activities or have not notified under 40 CFR Part 279 or under 40 CFR Part 266, Subpart E, which was replaced by 40 CFR Part 279.)

Subsequent Notifications

Even if you have submitted an initial notification and have received an EPA Identification Number, you may be required to submit a subsequent notification. Please refer to Sections 1 through 3 and 5 of this booklet for information on when and how to complete a subsequent notification. In general, you should submit a subsequent notification under the following circumstances:

1. If your business moves to another location; or
2. If the contact for your site changes; or
3. If the ownership of your site changes; or
4. If an additional owner has been added or replaced since you submitted your initial notification; or
5. If the type of regulated waste activity you conduct changes.

Notification of Regulated Waste Activity

Contents of This Booklet

Following is a list of the sections contained in this booklet and the information covered in those sections:

Section 1. How to Determine if You Must Notify EPA of Your Hazardous Waste Activities

Section 2. How to Determine if You Must Notify EPA of Your Universal Waste Handling Activities

Section 3. How to Determine if You Must Notify EPA of Your Used Oil Management Activities

Section 4. How to File Notification of Regulated Waste Activity (Information on how and where to file your form and where you can get additional information.)

Section 5. Item-by-item Instructions for Notification of Regulated Waste Activity Using the RCRA Subtitle C Site Identification Form (The blank form is provided at the end of this booklet.)

Section 6. Definitions (These are provided to help you understand and complete your Notification of Regulated Waste Activity.)

Section 7. EPA Hazardous Waste Numbers for Waste Streams Commonly Generated by Small Quantity Generators

Appendix 1- Typical Hazardous Waste Streams Produced by Small Quantity Generators

Appendix 2- Typical Hazardous Waste Streams and EPA Hazardous Waste Numbers

RCRA Subtitle C Site Identification Form (Site ID Form) - a copy of the blank form for filing a Notification of Regulated Waste Activity

After your completed Site ID Form for a notification is received and processed, you will be sent a written acknowledgment that will include your EPA Identification Number. **You must use this number on all communications with EPA regarding your regulated waste activities.**

1. How to Determine if You Must Notify EPA of Your Hazardous Waste Activities

All persons who generate, transport, recycle, treat, store, or dispose of hazardous waste are required to notify EPA (or their State agency if the State is authorized to operate its own hazardous waste program) of their hazardous waste activities. These persons must obtain an EPA Identification Number unless their solid waste has been excluded from regulation or their hazardous waste has been exempted as outlined below. These respective notification requirements are found in 40 CFR Parts 261, 262, 263, 264, 265, and 266.

In addition to the discussion below, you will need to refer to 40 CFR Part 261 to help you determine if the waste you handle is both a solid waste and a hazardous waste that is regulated under RCRA. If you need help making this determination after reading these instructions, contact the agency listed for your State in Section 4 of these instructions.

To determine if you handle a solid waste that is also a hazardous waste and regulated under RCRA, ask yourself the following questions.

A. Do I Handle a Solid Waste?

40 CFR 261.2 defines "solid waste" as any discarded material that is not excluded under Part 261.4(a) or that is not excluded by variance granted under Part 260.30 and 260.31. A discarded material is any material which is:

1. Abandoned, as explained in Part 261.2(b); or
2. Recycled, as explained in Part 261.2(c); or
3. Considered inherently waste-like as explained in Part 261.2(d); or
4. A military munition identified as a solid waste in Part 266.202.

If you do not handle a solid waste, you do not need to notify EPA.

B. Has My Solid Waste Been Excluded from the Regulations under Part 261.4?

The list of general exclusions can be found in 40 CFR 261.4. If the solid waste that you handle has been excluded, either by rule or special variance, then you do not need to notify EPA for that solid waste. If your solid waste was not excluded from regulation, you need to determine

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if it is a hazardous waste that EPA regulates. EPA regulates a solid waste as hazardous waste in two ways:

1. By specifically listing the solid waste as a hazardous waste and assigning it a unique EPA Hazardous Waste Code Number; or
2. By regulating it because it possesses any of four hazardous waste characteristics and assigning it a generic EPA Hazardous Waste Code Number.

C. Is My Solid Waste Specifically Listed as a Hazardous Waste?

Parts 261.30 through 261.33 identify certain solid wastes that EPA has specifically listed as hazardous. Persons who handle listed hazardous waste are subject to regulation and must notify EPA of their hazardous waste activities unless they are exempted as discussed below. Refer to these regulations to see if your solid waste is included as a "listed hazardous waste." If you are handling a newly regulated hazardous waste and have already notified EPA prior to that hazardous waste being regulated **and already have an EPA Identification Number**, you do not need to submit a subsequent notification for that newly regulated hazardous waste.

D. Does My Solid Waste Possess a Hazardous Characteristic?

Even if your solid waste is not specifically listed as a hazardous waste, it may still be hazardous because it exhibits certain hazardous characteristics. These characteristics are:

1. Ignitability;
2. Corrosivity;
3. Reactivity; and
4. Toxicity.

Parts 261.20 through 261.24 explain each of the characteristics and outline the testing procedures you should use to determine if your solid waste meets these characteristics. Persons who handle characteristic hazardous waste that is regulated must notify EPA of their activities unless they are exempted, as discussed below. If you are handling a newly regulated hazardous waste and have already notified EPA prior to that hazardous waste being regulated **and already have an EPA Identification Number**, you do not need to submit a subsequent notification for that newly regulated hazardous waste.

E. Has My Hazardous Waste Been Exempted from the Regulations under Parts 261.5 and 261.6(a)(3)?

Parts 261.5 and 261.6(a)(3) list certain hazardous wastes that are not subject to RCRA regulation. If the hazardous waste that you handle has been exempted, then you do not need to notify EPA for that hazardous waste.

2. How to Determine if You Must Notify EPA of Your Universal Waste Handling Activities

Under 40 CFR Part 273, Subpart C, Large Quantity Handlers of Universal Waste who accumulate a total of 5,000 kilograms or more of universal wastes at any time are required to notify EPA (or their State agency if the State is authorized to operate its own universal waste program) of their universal waste activities and obtain an EPA Identification Number, unless they have previously notified EPA of their hazardous waste activities. Large Quantity Handlers of Universal Waste must notify EPA of their universal waste activities and obtain an EPA Identification Number before meeting or exceeding the 5,000 kilogram storage limit.

Small Quantity Handlers of Universal Waste are exempt from these notification requirements.

***Note:** Please refer to the regulations in 40 CFR Part 273 to ensure that you are aware of all the requirements that apply to your universal waste handling activities.*

3. How to Determine if You Must Notify EPA of Your Used Oil Management Activities

Under 40 CFR Part 279, Subparts E, F, G, and H, respectively, persons who transport used oil; process or re-refine used oil; burn off-specification used oil for energy recovery; or market used oil fuel, are required to notify EPA (or their State agency if the State is authorized to operate its own used oil program) and obtain an EPA Identification Number, unless they are exempt as outlined below. Off-specification used oil may be burned for energy recovery in an industrial furnace, boiler, or hazardous waste incinerator subject to regulation under Subpart O of 40 CFR Part 264 or 265.

Used oil transporters; used oil processors/re-refiners; off-specification used oil burners; and used oil fuel marketers who have not previously notified EPA of their hazardous waste activities or notified under 40 CFR Part 266, Subpart E (replaced by Part 279) must notify EPA to identify their used oil management activities.

***Note:** Please refer to the regulations in 40 CFR Part 279 to ensure that you are aware of all the requirements that apply to your used oil management activities.*

Who is exempt from used oil notification requirements?

- A. Persons who burn on-specification used oil fuel:** Used oil that is to be burned for energy recovery and that meets the specification provided under Part 279.11 is exempt from the regulations. **However, the person who first claims that the used oil meets the specification is subject to notification as a used oil fuel marketer and certain other**

Notification of Regulated Waste Activity

requirements (see Part 279, Subpart H). The burner of fuel that meets the specification in Part 279.11 is not required to notify.

- B. Used oil generators** are not required to notify EPA.
- C. Used oil generators operating used oil-fired space heaters:** Persons who burn only used oil that they generate (or used oil received from household do-it-yourself used oil changers) in used oil-fired space heaters are exempt from the notification requirement provided that the device is vented to the outdoors and the device is not designed to have a capacity greater than 0.5 million BTU/hour.

4. How to File Notification of Regulated Waste Activity

Initial Notifications

If you do not currently have an EPA Identification Number and you handle a regulated waste, you must submit an initial notification for your regulated waste activities. Please refer to Sections 1 through 3 of this booklet for more information on whether you must notify EPA of these regulated waste activities. You can satisfy this initial notification requirement by completing and signing the enclosed RCRA Subtitle C Site Identification Form (Site Identification Form) [EPA Form 8700-12] and submitting it to the appropriate address (see Section C below).

Under the Hazardous Waste Import Regulations, 40 CFR Part 262.60, *foreign generators should not apply for an EPA Identification Number*. These regulations state that when filling out a U.S. manifest, you must include the name and address of the foreign generator, and the name, address, and EPA Identification Number of the importer. Please contact the U.S. firms involved with your shipments and determine which firm will serve as the U. S. Importer.

Subsequent Notifications

Even if you have submitted an initial notification and have received an EPA Identification Number, you may be required to submit a subsequent notification. Please refer to information contained in Sections 1 through 3 and Section 5 of this booklet for instructions on when and how to complete a subsequent notification.

A. How Many Forms Should I File?

A person who is subject to the hazardous waste, universal waste, or used oil management regulations under RCRA should submit one notification (Site Identification Form) per RCRA site. If you conduct any regulated waste activity - hazardous waste, universal waste, or used oil

Notification of Regulated Waste Activity

management activities - at more than one RCRA site, you must submit a separate notification using the Site Identification Form for each RCRA site.

If you only transport regulated wastes and do not generate, treat, store, or dispose of hazardous wastes; qualify as a large quantity handler of universal wastes; or process/re-refine used oil, burn off-specification used oil fuel, or market used oil fuel, you may submit one notification that covers all transportation activities your company conducts. This notification should be sent to the appropriate address (see subsection C below) that serves the State where your company has its headquarters or principal place of business. However, if you are a transporter who also engages in one or more of the regulated waste activities listed above, you must complete and submit a separate notification using the Site Identification Form to cover each RCRA site.

B. Can I Request that this Information Be Kept Confidential?

All information you submit in an initial or subsequent notification can be released to the public, according to the Freedom of Information Act, unless it is determined to be confidential by EPA pursuant to 40 CFR Part 2. Since notification information is very general, EPA believes it is unlikely that any information in your notification could qualify to be protected from release. However, you may make a claim of confidentiality by printing the word "CONFIDENTIAL" on both sides of RCRA Subtitle C Site Identification Form and on any attachments. EPA will take action on the confidentiality claims in accordance with 40 CFR Part 2.

C. Where Should I Send My Completed Form?

We have provided an up to date list of the address for your State Office where you should send your completed RCRA Subtitle C Site Identification Form. Also listed is the phone number you can call for additional information; in some cases there also is an e-mail address. This contact list can be found on the Internet at:

<http://www.epa.gov/epaoswer/hazwaste/data/form8700/forms.htm#links>

Click on the document under the section:

Where can I obtain assistance with the Notification of Regulated Waste Activity requirements and the RCRA Subtitle C Site Identification Form? Where Should I Send My Completed Form?

Many States use the form included at the end of this booklet; some also require additional information. The other States require that you complete and submit a state specific form. The Contact List notes which form to use; even if you use the included form, you should check with your state to determine if you need to submit additional information. Also, contact your State if you have any questions about your submission.

Notification of Regulated Waste Activity

5. Item-by-item Instructions for Notification of Regulated Waste Activity Using the RCRA Subtitle C Site Identification Form

Please be sure to review the instructions carefully and complete all items on the form. After you have submitted the Site Identification Form once, your State may allow you to attach a copy of your most recently submitted form. If so, circle items numbers for which any information has changed. Then enter the new information (also circle the item numbers) on the Site Identification Form included in this booklet and provide the required signatures in Item 13 - Certification.

Note: Be sure to use your most recently submitted form; it may have been submitted for a Subsequent Notification of Regulated Waste Activity, the Hazardous Waste Report, or a previous RCRA Hazardous Waste Part A Permit Application.

Instructions for Filling Out the RCRA Subtitle C Site Identification (Site ID) Form

WHO MUST SUBMIT THIS FORM

All sites required to submit any of the following must submit the RCRA Subtitle C Site Identification (Site ID) Form:

- Initial Notification of Regulated Waste Activity
- Subsequent Notification of Regulated Waste Activity
- First RCRA Hazardous Waste Part A Permit Application
- Revised RCRA Hazardous Waste Part A Permit Application
- Hazardous Waste Report

You **must complete** all the items on the Site ID Form.

PURPOSE OF THIS FORM

For purposes of the Notification of Regulated Waste Activity, the Site ID Form provides site-specific information about a facility for obtaining an EPA Identification Number and submitting Initial Notification of Regulated Waste Activity. For purposes of a Subsequent Notification of Regulated Waste Activity, the Site ID Form provides updated site-specific information for those items that have changed at your site and verifies the information for those items that remain unchanged. For the purposes of the RCRA Hazardous Waste Part A Permit Application and the Hazardous Waste Report, you must also complete the Site ID Form to update your site information.

HOW TO FILL OUT THIS FORM

Complete all of the Site ID Form items.

- Item 1 - your reason for submitting the form
- Item 2 - your site's EPA Identification Number
- Item 3 - the name of your site
- Item 4 - the physical location of your site
- Item 5 - the land type of your site
- Item 6 - the North American Industry Classification System (NAICS) code(s) for your site
- Item 7 - the mailing address for your site
- Item 8 - name and phone number of a contact person at your site

Site ID Form

(Continued)

- Item 9 - names of the operator and the legal owner(s) of your site
- Item 10 - your site's regulated waste activities (enter all that apply)
- Item 11 - the description of hazardous waste if you handle any
- Item 12 - additional comments on Items 1 through 11
- Item 13 - certification that the information you provided throughout the form is truthful, accurate and complete

Type or print in black ink all items except the Signature box in Item 13. Enter your site's EPA ID Number in the top left-hand corner on the second and third pages of the form; for Initial Notification for this site, leave the EPA Identification Number blank. Use Item 12 - Comments to clarify or provide additional information for any entry. When entering information in the comments section, enter the item number and box letter to which the comment refers. If you must use additional sheets for comments, enter your site's EPA ID Number in the top left-hand corner of each sheet.

ITEM-BY-ITEM INSTRUCTIONS

Item 1 -- Reason for Submittal:

Reason for Submittal: Place an “X” in the appropriate box to indicate whether this form is your Initial Notification of Regulated Waste Activity (to obtain an EPA Identification Number); a Subsequent Notification of Regulated Waste Activity (to update your site identification information); a component of a First or a Revised Hazardous Waste Part A Permit Application; or a component of the Hazardous Waste Report.

- **For Initial Notification of Regulated Waste Activity to provide site identification information and obtain an EPA Identification Number for hazardous waste, universal waste, or used oil activities.** If your waste activity is regulated under Subtitle C of the Resource Conservation and Recovery Act (RCRA) and the rules promulgated pursuant to the Act (specifically 40 CFR Parts 260–299), you must submit this form to notify the appropriate State or EPA Regional Office of your regulated waste activities and obtain an EPA Identification Number.
- **For Subsequent Notification of Regulated Waste Activity to update site identification information.** You must use this form to submit a subsequent notification if your site already has an EPA Identification Number and you wish to change information (e.g., generator status, new site contact person, new owner, new mailing address, new regulated waste activity, etc.).
- **As a component of a First RCRA Hazardous Waste Part A Permit Application.** If your site is planning to treat, store, or dispose of hazardous waste on site in a unit that is not exempt from obtaining a hazardous waste permit, you must submit this form as part of the Part A Permit Application. Also, if the activity at this site (treatment, storage, or disposal) became newly regulated under RCRA Subtitle C and the rules promulgated pursuant to the Act (specifically 40 CFR Parts 260–299), you must submit this form as part of the Part A Permit Application.
- **As a component of a Revised RCRA Hazardous Waste Part A Permit Application.** If you must submit a revised Part A Permit Application to reflect changes that have occurred at your site, you must submit this form as part of your revised Part A Permit Application. Examples of site changes requiring a revised Part A Permit Application include managing new wastes not identified in the first submission of the form or changes to existing waste treatment processes. When submitting a revised Part A Permit Application, please include the Amendment number in the appropriate space.
- **As a component of the Hazardous Waste Report.** If you are required to submit a Hazardous Waste Report indicating the amount of hazardous waste you generate, treat, recycle, dispose, ship off site, or receive from off site, you must fill out this form.

NOTE	<p>You will report your current Hazardous Waste Generator status as of the date of submitting the Site Identification Form in Item 10.A.1 - Generator of Hazardous Waste. Your status may have changed since your last submission (unless this is an Initial Notification of Regulated Waste Activity).</p>
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Site ID Form

(Continued)

Item 2 -- Site EPA ID Number:

Provide your EPA Identification Number in Item 2 **for this site**. Also, be sure to include your EPA Identification Number at the top of pages 2 and 3 of the form (as well as on any attachments to the Site ID Form).

NOTE	If this is your Initial Notification for this site, leave the EPA Identification Number blank
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Items 3 and 4 -- Site Name and Location:

Provide the legal name of your site and a complete location address. Please note that the address you give for Item 4, Site Location, must be a physical address, **not a post office box or route number**.

NOTE	A new EPA Identification Number is required if you change the location of your site.
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Item 5 -- Site Land Type:

Place an "X" in the box that **best describes** the land type of your site. Select only one type: Private, County, District, Federal, Indian (see Indian Country below), Municipal, State, or Other. If your site's Land Type could be described as Municipal **and** as County, as District, or as Indian, do not mark Municipal. Instead choose the other appropriate code; you may explain this in Item 12 - Comments.

Indian Country - Land governed by an entity on the list of Federally recognized American Indian tribes and Alaskan Native entities at: <http://www.epa.gov/edr/fdetribal.pdf>

Item 6 -- North American Industry Classification System (NAICS) Code(s):

Box A must be completed. Completing Boxes B-D is recommended, if applicable.

Box A Provide the North American Industry Classification System (NAICS) code that **best** describes your site's primary business production process for your products or services. Use the six (6) digit code (most specific description) if available for your business; if not, use the five (5) digit code; do not enter any four (4) or less digit code.

Boxes B - D List other NAICS codes that describe the primary business production processes for your site. Use the 6 or 5 digit codes that apply to your site.

Check with your accounting or business staff to determine your NAICS code(s); the NAICS code is used in tax reporting and other business reports. A list of the acceptable codes is on the Internet at -

<http://www.epa.gov/epaoswer/hazwaste/data/br03/forms.htm>

You can obtain additional information about NAICS codes from the Internet at -

<http://www.census.gov/epcd/naics02/>

Item 7 -- Site Mailing Address:

Please enter the Site Mailing Address. If the mailing address and the Location of Site (Item 4) are the same, you can enter "Same as Item 4" in the box for Item 7.

Item 8 -- Site Contact Person:

Enter the name, business telephone number, and extension of the individual who should be contacted regarding the information submitted in the Site ID Form. You may also enter an email address; if you want to be contacted by fax, enter that number in Item 12 - Comments. A Subsequent Notification is recommended when the Site Contact Person changes. **Do not** enter other contact persons here; if there are other persons who may be contacted about this submission, list them and their other contact information in Item 12. An example would be a contact specifically for the Hazardous Waste Report. Note that the Facility Permit Contact information for the RCRA Hazardous Waste Part A Permit Application is entered in Items 1 and 2 of the Hazardous Waste Permit Information Form.

NOTE	It is assumed that the Site Contact Person will receive mail at the Site Mailing Address provided in Item 7. If this is not the case, please provide the mailing address for the Site Contact Person in Item 12 - Comments...
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Item 9 -- Operator and Legal Owner of the Site:

This section should be used to indicate all the operators and owners of this site. Please review these definitions:

Operator - The person responsible for the overall operation of a RCRA site. Note: This is the legal entity which controls the RCRA site operation rather than the plant or site manager. This is usually a company or business name, not an individual. See **Person**.

Owner - The person who owns a RCRA site or part of a RCRA site. Note: This includes the property owner. This may be an individual, company, or business name. See **Person**.

Person - An individual, trust, firm, joint stock company, Federal Agency, corporation (including a government corporation), partnership, association, State, municipality, commission, political subdivision of a State, or any interstate body.

A. Name of Site's Operator: Provide the name of your site's operator.

Date Became an Operator: Indicate the date on which the above entity became the operator of your site. Enter dates as in this example: For April 22, 2005, enter 04/22/2005.

Site ID Form

(Continued)

Operator Type: Place an “X” in the box that **best describes** the operator type of your site. Select only one type: Private, County, District, Federal, Indian (see below), Municipal, State, or Other. If your site’s Operator Type could be described as Municipal **and** as County, as District, or as Indian, do not mark Municipal. Instead choose the other appropriate code; you may explain this in Item 12 - Comments.

Indian - A member of an entity on the list of Federally recognized American Indian tribes and Alaskan Native entities at: <http://www.epa.gov/edr/fdetribal.pdf>

Use the Comments section in Item 12 to list any additional operators, their names, the dates they became operators, operator type, and mailing address. If necessary, attach a separate sheet of paper.

- B. Name of Site’s Legal Owner:** Provide the name of your site’s legal owner(s). This includes owner(s) of the building(s) and land.

Date Became an Owner: Indicate the date on which the above entity became the owner of your site. Enter dates as in this example: For April 22, 2005, enter 04/22/2005.

Owner Type: Place an “X” in the box that **best describes** the owner type of your site. Select only one type: Private, County, District, Federal, Indian (see below), Municipal, State, or Other. If your site’s Owner Type could be described as Municipal **and** as County, as District, or as Indian, do not mark Municipal. Instead choose the other appropriate code; you may explain this in Item 12 - Comments.

Indian - A member of an entity on the list of Federally recognized American Indian tribes and Alaskan Native entities at: <http://www.epa.gov/edr/fdetribal.pdf>

Use the Comments section in Item 12 to list any additional owners, their names, the dates they became owners, owner type, mailing address, and which owner(s), if any, are no longer owners since your last submission of this form. If necessary, attach a separate sheet of paper.

Legal Owner Address: Please enter this information if your State requires it; see your State’s specific instructions if any. If the address and the Location of Site (Item 4) are the same, you can enter “Same as Item 4” in the box for Item 9.

NOTE	A subsequent notification is recommended when the operator or owner of a site changes. Because an EPA Identification Number is site-specific, the new owner will keep the existing EPA Identification Number for that location. If your business moves to another location, the operator or owner must notify the State or EPA Regional Office of this change. Since your business has changed locations, a new EPA Identification Number will be assigned.
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Item 10 -- Type of Regulated Waste Activity

Place an "X" in box "Yes" or in box "No" as appropriate for activities at this site; complete any additional boxes as instructed.

A. Hazardous Waste Activities: Complete all parts 1 through 6.

NOTE	Listed below are the Federal generator status definitions. If, however, the State where your site is located has definitions different from the Federal definitions, you must use the State definitions.
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- 1. Generator of Hazardous Waste:** If you generate a hazardous waste that is listed in 40 CFR 261.31 through 261.33 or identified by one or more hazardous waste characteristic(s) contained in 40 CFR 261.21 through 261.24, place an "X" in the appropriate box for the quantity of non-acutely hazardous waste that is generated per calendar month. The regulations for hazardous waste generators are found in 40 CFR Part 262. Consult these regulations and your State for details about how the regulations apply to your situation. Below is a brief description of the three types of hazardous waste generators.

If "Yes", mark only one of the following - a, b, or c.

a. LQG: Large Quantity Generator

This site is a Large Quantity Generator if the site meets **any** of the following criteria:

- i) Generates, in any calendar month, 1,000 kg (2,200 lbs.) or more of RCRA hazardous waste; **or**
- ii) Generates, in any calendar month, or accumulates at any time, more than 1 kg (2.2 lbs.) of RCRA acute hazardous waste; **or**
- iii) Generates, in any calendar month, or accumulates at any time, more than 100 kg (220 lbs.) of spill cleanup material contaminated with RCRA acute hazardous waste.

NOTE	If, in addition to being an LQG, you recycle hazardous wastes at your site, mark both this box and Box A.4 below.
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Site ID Form

(Continued)

b. SQG: Small Quantity Generator

This site is a Small Quantity Generator if the site meets **all** of the following criteria:

- i) Generates, in any calendar month, more than 100 kg (220 lbs.) but less than 1,000 kg (2,200 lbs.) of RCRA hazardous waste; **and**
- ii) Generates, in any calendar month, or accumulates at any time, no more than 1 kg (2.2 lbs.) of acute hazardous waste **and** no more than 100 kg (220 lbs.) of material from the cleanup of a spill of acute hazardous waste.

OR, the site is a Small Quantity Generator if the site:

- i) Meets all other criteria for a Conditionally Exempt Small Quantity Generator (see below), but
- ii) Accumulates, at any time, more than 1,000 kg (2,200 lbs.) of RCRA hazardous waste.

c. CESQG: Conditionally Exempt Small Quantity Generator

This site is a CESQG if the site does **all** of the following:

- i) Generates no more than 100 kg (220 lbs.) of RCRA hazardous waste in any calendar month; **and**
- ii) Accumulates, at any time, no more than 1,000 kg (2,200 lbs.) of RCRA hazardous waste; **and**
- iii) Generates, in any calendar month, or accumulates at any time, no more than 1 kg (2.2 lbs.) of acute hazardous waste, **and** no more than 100 kg (220 lbs.) of material from the cleanup of a spill of acute hazardous waste.

NOTE	If you generate acutely hazardous wastes listed in 40 CFR 261.31, 261.32 or 261.33(e), please refer to 40 CFR 261.5(e) to determine the circumstances under which you must notify the EPA.
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In addition to the above, mark “Yes” or “No” for the other hazardous waste activities listed below that may occur at this site. **Complete 1.d and e, and 2 through 6.**

d. United States Importer of Hazardous Waste

Mark “Yes” if you import hazardous waste from a foreign country into the United States. Refer to 40 CFR 262.60 for additional information.

e. Mixed Waste Generator

Mark “Yes” if you are a generator of mixed waste (waste that is both hazardous and radioactive). RCRA defines “mixed waste” as waste that contains both hazardous waste and source, special nuclear, or by-product material subject to the Atomic Energy Act (AEA), RCRA section 1004(41), 42 U.S.C. 6903 (63 FR 17414; April 9, 1998). See the definitions on pages 39, 42, and 43.

2. **Transporter of Hazardous Waste:** Mark “Yes” if you transport hazardous waste within the United States. The Federal regulations for hazardous waste transporters are found in 40 CFR Part 263.
3. **Treater, Storer, or Disposer of Hazardous Waste:** If you treat, store, or dispose of hazardous waste, mark “Yes”. A RCRA Hazardous Waste Permit is required for this activity. Contact the appropriate office for your State for more information. The Federal regulations for operators and owners of permitted treatment, storage, and disposal facilities (TSDFs) are found in 40 CFR Parts 264, 265, 266, and 270.

NOTE	If your site is a destination facility for universal wastes in addition to being a treatment, storage, or disposal facility for other RCRA hazardous wastes, mark both this box and Box B.2 below.
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4. **Recycler of Hazardous Waste:** If you recycle regulated hazardous wastes (recyclable materials), mark “Yes”. The Federal regulations for operators and owners of sites that recycle hazardous waste are found in 40 CFR 261.6. You also may be subject to other Federal and State regulations; in some cases a permit is required.

NOTE	If your site, in addition to being a recycling site for hazardous waste, is a treater, storer, or disposer of hazardous waste, mark both this box and Box A.3 above. If your site is a destination facility for universal wastes in addition to being a recycling site for other RCRA hazardous wastes, mark both this box and Box B.2 below.
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5. **Exempt Boiler and/or Industrial Furnace:**
If you mark “Yes”, mark each that applies.
 - a. If you burn small quantities of hazardous waste in an on-site boiler or industrial furnace in accordance with the conditions in 40 CFR 266.108, mark “Yes” to indicate that you qualify for the Small Quantity On-Site Burner Exemption.
 - b. If you process hazardous wastes in a smelting, melting, or refining furnace solely for metals recovery, as described in 40 CFR 266.100(d), or to recover economically significant amounts of precious metals, as described in 40 CFR 266.100(g), or if you process hazardous wastes in a lead recovery furnace to recover lead, as described in 40 CFR 266.100(h), place an “X” in the box to indicate that you qualify for the Smelting, Melting, and Refining Furnace Exemption.
6. **Underground Injection Control:** If you generate, treat, store, or dispose of hazardous waste and there is an underground injection well located at your site, mark “Yes”. The Federal regulations for operators or owners of underground injection wells are found in 40 CFR Part 148.

In addition to the above, mark “Yes” or “No” for the other regulated waste activities listed below that may occur at this site. **Complete Items B and C.**

Site ID Form

(Continued)

B. Universal Waste Activities: Refer to your State-specific requirements and definitions for universal waste. **Also**, refer to 40 CFR 261.9 and 40 CFR Part 273 for the Federal regulations covering universal waste. **Complete 1 and 2.**

- 1. Large Quantity Handler of Universal Waste (LQHUW):** You are an LQHUW if you accumulate a total of 5,000 kg or more of any universal wastes (calculated collectively) at any time. If “Yes”, place an “X” in the appropriate box(es) to indicate the type(s) of universal wastes you generate and/or accumulate at your site. If your State has additional universal wastes, indicate what they are and place an “X” in the corresponding box(es).
- 2. Destination Facility:** Mark “Yes” if you treat, dispose of, or recycle universal wastes on site. A hazardous waste permit is required if you treat or dispose of universal wastes; a permit may be required if you recycle universal wastes.

NOTE	If your site, in addition to being a destination facility for universal wastes, is also a treatment, storage, or disposal facility for RCRA hazardous wastes, mark both this box and Box A.3 above. In addition, if your site recycles RCRA hazardous wastes, mark both this box and Box A.4 above.
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C. Used Oil Activities: Mark the appropriate box(es) to indicate which used oil management activities are taking place at this site. The Federal regulations for used oil management are found in 40 CFR Part 279. **Complete 1 through 4.**

- 1. Used Oil Transporter:** If you transport used oil and/or own or operate a used oil transfer facility, mark “Yes” and place an “X” in the appropriate box(es) to indicate this used oil management activity.
- 2. Used Oil Processor/Re-Refiner:** If you process and/or re-refine used oil, mark “Yes” and place an “X” in the appropriate box(es) to indicate this used oil management activity.
- 3. Off-Specification Used Oil Burner:** If you burn off-specification used oil fuel, mark “Yes” to indicate this used oil management activity.
- 4. Used Oil Fuel Marketer:** Mark “Yes” if you market used oil fuel. If you market off-specification used oil directly to a burner, place an “X” in Box 4.a. If you are the first to claim the used oil meets the used oil specification established in 40 CFR 279.11, place an “X” in Box 4.b. If either of these boxes is marked, you also must notify (or have previously notified) as a used oil transporter, used oil processor/re-refiner, or off-specification used oil fuel burner, unless you are a used oil generator. (Used oil generators are not required to notify.)

Item 11 -- Description of Hazardous Wastes:

Complete this item if you marked “Yes” for any activity in **Item 10. A.** and **if** your State requires it. You will need to refer to 40 CFR Part 261 to complete this item. Part 261 identifies those solid wastes which the EPA defines as hazardous and regulates under RCRA. If you need help completing this section, please contact your State Office.

- A. Federally Regulated Hazardous Wastes:** If you handle hazardous wastes that are described in 40 CFR Part 261, enter the appropriate 4-digit code(s) in the box(es) provided.

NOTE	EPA Hazardous Waste Codes, page 49. If you handle more hazardous wastes than will fit under Item 11.A., please continue listing the hazardous waste codes on an extra sheet. If you handle a large number of codes, you may copy the list in this booklet and mark the ones that you handle. Attach any additional sheets to the Site Identification Form.
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- B. State-Regulated Hazardous Wastes:** If you manage State-regulated hazardous wastes that have a state waste code, enter the appropriate code(s) in the box(es) provided.

Item 12 -- Comments:

Use this section as needed to provide additional information for Items 1 through 11. Include the item number and box letter (if any) for each comment you make. You may attach additional sheets if needed.

Item 13 -- Certification:

This certification must be signed by operator(s), owner(s), or authorized representative(s) of the site. An “authorized representative” is a person responsible for the overall operation of the site (i.e., a plant manager or superintendent, or a person of equal responsibility). For the RCRA Hazardous Waste Part A Permit Application, all operator(s) and owner(s) of the site must sign (see 40 CFR 270.10 (b) and 270.11).

NOTE	All Site ID Form submissions must include this certification to be complete.
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Notification of Regulated Waste Activity

6. Definitions

The following definitions are included to help you to understand and complete the RCRA Subtitle C Site Identification Form:

Accumulation: See 40 CFR 262.34. A site that does not hold RCRA Interim Status or a RCRA permit may accumulate hazardous waste for a short period of time before shipping it off site. The waste must be accumulated in either tanks or containers; it may not be accumulated in surface impoundments.

Generators of more than 1,000 kg (2,200 lbs) of hazardous waste per month may accumulate their waste for up to 90 days before shipping it off site. Generators of 100 kg (220 lbs) to 1,000 kg (2,200 lbs) of hazardous waste per month may accumulate their waste for up to 180 days before shipping it off site. If the nearest treatment, storage, disposal, or recycling facility to which they can send their waste is more than 200 miles away, they may accumulate their waste for 270 days.

Act or RCRA means the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. Section 6901 *et seq.*

Acute Hazardous Waste means any hazardous waste with an EPA hazardous waste code beginning with the letter “P” (40 CFR 261.33(e)) or any of the following “F” codes: F020, F021, F022, F023, F026, and F027 (40 CFR 261.31). These wastes are subject to stringent quantity standards for accumulation and generation (40 CFR 261.5(e)).

Authorized Representative means the person responsible for the overall operation of the RCRA site or an operational unit (i.e., part of a RCRA site), e.g., superintendent or plant manager, or person of equivalent responsibility.

Authorized State means a State that has obtained authorization from the EPA to direct its own RCRA program.

Boiler means an enclosed device using controlled flame combustion and having the following characteristics:

1. The unit has physical provisions for recovering and exporting energy in the form of steam, heated fluids, or heated gases;
2. The unit's combustion chamber and primary energy recovery section(s) are of integral design (i.e., they are physically formed into one manufactured or assembled unit);
3. The unit continuously maintains an energy recovery efficiency of at least 60 percent, calculated in terms of the recovered energy compared with the thermal value of the fuel;
4. The unit exports and utilizes at least 75 percent of the recovered energy, calculated on an annual basis (excluding recovered heat used internally in the same unit, for example, to preheat fuel or combustion air or drive fans or feedwater pumps); or
5. The unit is one which the Regional Administrator has determined, on a case-by-case basis, to be a boiler, after considering the standards in 40 CFR 260.32.

Notification of Regulated Waste Activity

By-product Material means material that is a by-product material is (1) any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material; and (2) the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content (defined in the Atomic Energy Act of 1954).

Code of Federal Regulations (CFR) means the codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government. The Code is divided into 50 titles which represent broad areas subject to Federal regulation. Each title is divided into chapters that usually bear the name of the issuing agency. Each chapter is further subdivided into parts covering specific regulatory areas. The CFR title applicable for the Hazardous Waste Report is “40,” as in “40 CFR 262.34.”

Conditionally Exempt Small Quantity Generator (CESQG) of Hazardous Waste means a generator that meets the following criteria:

In every month during the year, the site did **all** of the following:

1. Generated no more than 100 kg (220 lbs.) of RCRA hazardous waste in a calendar month; **and**
2. Generated, in a calendar month, or accumulated at any time, no more than 1 kg (2.2 lbs.) of acute hazardous waste, **and** no more than 100 kg (220 lbs.) of material from the cleanup of a spill of acute hazardous waste; **and**
3. Accumulated, at any time, no more than 1,000 kg (2,200 lbs.) of hazardous waste.

Confidential Business Information (CBI) means information a site does not wish to make available to the general public for competitive business reasons. Confidential Business Information (CBI) may be claimed for certain information in your report. A claim may be made in accordance with 40 CFR Part 2, Subpart B.

Delisted Wastes means a site-specific wastes excluded from regulation under 40 CFR 260.20 and 260.22. A waste at a particular generating site may be excluded by petitioning the EPA Administrator for a regulatory amendment. These wastes are listed in Appendix IX of 40 CFR Part 261.

Disposal means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

Environmental Protection Agency (EPA), also called U.S. EPA, means the United States Environmental Protection Agency. Some State environmental authorities may be called the EPA also, as in “Illinois EPA.”

Notification of Regulated Waste Activity

EPA Identification (ID) Number means the number assigned by the EPA to each hazardous waste generator, hazardous waste transporter, and treatment, storage, or disposal facility; United States importer of hazardous waste; mixed waste (hazardous and radioactive) generator; recycler of hazardous waste; exempt boiler and/or industrial furnace burning or processing hazardous waste; large quantity handler of or destination facility for universal wastes; disposer of hazardous waste with an underground injection permit; used oil transporter, used oil processor/re-refiner, off-specification used oil fuel burner, used oil fuel marketer; or site undergoing corrective action.

Excluded Wastes means wastes excluded from the definition of solid or hazardous waste under 40 CFR 261.3 and 261.4.

Hazardous Waste means a hazardous waste as defined in 40 CFR 261.3.

Hazardous Waste Generator means any person, by site, whose act or process produces hazardous waste identified or listed in 40 CFR Part 261.

Hazardous Waste Number or Code, EPA, means the number (or code) assigned by the EPA to each hazardous waste listed in 40 CFR Part 261, Subpart D and to each characteristic identified in 40 CFR Part 261, Subpart C. The codes consist of one letter (D, F, P, U, or K) and three numbers.

Hazardous Waste Storage means the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere.

Hazardous Waste Transporter means a person engaged in the off-site transportation of hazardous waste by air, rail, highway, or water.

Hazardous Waste Treatment means any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such hazardous waste, or so as to recover energy or material resources from the hazardous waste, or so as to render such hazardous waste nonhazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage, or reduced in volume. Such term includes any activity or processing designed to change the physical form or composition of hazardous waste so as to render it nonhazardous.

Incineration means the burning of certain types of solid, liquid, or gaseous materials; or a treatment technology involving destruction of waste by controlled burning at high temperatures (e.g., burning sludge to remove the water and reduce the remaining residues to a safe, non-burnable ash that can be disposed safely on land, in some waters, or in underground locations).

Industrial Furnace means any of the following enclosed devices that are integral components of manufacturing processes and that use thermal treatment to accomplish recovery of materials or energy: cement kilns; lime kilns; aggregate kilns; phosphate kilns; coke ovens; blast furnaces; smelting, melting and refining furnaces; titanium dioxide chloride process oxidation reactors; methane reforming furnaces; pulping liquor recovery furnaces; combustion devices used in the recovery of sulfur values from spent sulfuric acid; halogen acid furnaces, as defined under industrial furnace in 40 CFR 260.10; and such other devices as the Administrator may add to this list.

Notification of Regulated Waste Activity

Interim (Permit) Status means the period during which the operator/owner of an existing TSD facility is treated as having been issued a RCRA permit even though he/she has not yet received a final determination. An existing facility should have automatically qualified for interim status if the operator/owner filed both timely “notification” and the first part (Part A) of the RCRA permit application. Interim status continues until a final determination is made to issue or deny the permit. Operator/owner of new facilities cannot by definition qualify for interim status; rather, they need a RCRA permit prior to beginning construction of a hazardous waste management facility.

Large Quantity Generator (LQG) of Hazardous Waste means a generator that meets **any** of the following criteria:

1. Generates, in a calendar month, 1,000 kg (2,200 lbs.) or more of RCRA hazardous waste, during one or more months in a year; **or**
2. Generates, in a calendar month, or accumulates at any time, more than 1 kg (2.2 lbs.) of RCRA acute hazardous waste; **or**
3. Generates, in a calendar month, or accumulates at any time, more than 100 kg (220 lbs.) of spill cleanup material contaminated with RCRA acute hazardous waste.

Large Quantity Handler of Universal Waste means a universal waste handler (as defined in 40 CFR 273.6) who accumulates 5,000 kilograms or more total of universal waste (batteries, pesticides, or thermostats, collectively) at any time. This designation is retained through the end of the calendar year in which 5,000 kilograms or more of universal wastes are accumulated.

Management of Hazardous Waste means the systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, or disposal of hazardous waste (40 CFR 260.10).

Manifest, Uniform Hazardous Waste, means the shipping document EPA form 8700-22 and, if necessary, Form 8700-22A, originated and signed by a generator in accordance with the instructions included in the appendix to 40 CFR Part 262. The “cradle-to-grave” paperwork must accompany a shipment of hazardous waste as it moves from the generator to the transporter and eventually to the hazardous waste management facility.

Mixed Waste means a waste that contains both hazardous and source, special nuclear, or by-product material subject to the Atomic Energy Act (AEA), RCRA section 1004(41), 42 U.S.C. 6903 (63 FR 17414; April 9, 1998).

Municipality means a city, village, town, borough, county, parish, district, association, Indian tribe or authorized Indian tribal organization, designated and approved management agency under Section 208 of the Clean Water Act, or any other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes.

Notification of Regulated Waste Activity

Off-Specification Used Oil Burner means a RCRA site where used oil not meeting the specification requirements in 40 CFR 279.11 (off-specification used oil) is burned for energy recovery in devices identified in Section 279.61(a).

Off-Specification Used Oil Fuel means used oil fuel that does not meet the specification provided under 40 CFR 279.11.

On-Specification Used Oil Fuel means used oil fuel that meets the specification provided under 40 CFR 279.11.

Off-site Facility means a hazardous waste treatment, storage, disposal, or recycling area located at a place away from the generating site.

On-site Facility means a hazardous waste treatment, storage, disposal, or recycling area located on the generating site.

Operator means the person responsible for the overall operation of a RCRA site. Note: This is the legal entity which controls the RCRA site operation rather than the plant or site manager. This is usually a company or business name, not an individual. See **Person**.

Owner means a person who owns a RCRA site or part of a site. Note: This includes the property owner. This may be an individual, company, or business name. See **Person**.

Person means an individual, trust, firm, joint stock company, Federal Agency, corporation (including a government corporation), partnership, association, State, municipality, commission, political subdivision of a State, or any interstate body.

Resource Conservation and Recovery Act (RCRA) means the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA) (40 CFR 270.2). It is the Federal statute that regulates the generation, treatment, storage, disposal, recycling, and/or transportation of solid and hazardous waste.

RCRA Interim (Permit) Status - Refer to “Interim (Permit) Status.”

RCRA Permit means a complete RCRA permit is comprised of an operating permit for hazardous waste treatment, storage, and disposal, and a corrective action permit addressing releases from solid waste management unit (SWMUs). To apply for a permit, a site must file a two-part application (Part A and Part B). A facility is not considered to have a complete RCRA permit until both parts have been issued.

RCRA Subtitle C Site (RCRA Site or Site) means the physical plant or location at which one or more of the following regulated waste activities occurs: the generation, transportation, treatment, storage, or disposal of hazardous wastes; recycling of hazardous wastes; United States importer of hazardous waste; mixed waste (hazardous and radioactive) generator; exempt boiler and/or industrial furnace burning or processing hazardous waste; large quantity handler of or destination facility for universal wastes; disposing hazardous waste with an underground injection permit; the transportation (and temporary storage during transportation), processing/re-refining, burning, or marketing of used oil; or undergoing corrective action.

A site may consist of several treatment, storage, or disposal operational units. For entities that only transport regulated wastes, the term site refers to the headquarters of that entity's operations.

Notification of Regulated Waste Activity

Recycling means the use, reuse, or reclamation of a material (40 CFR 261.1(c)(7)). “Reclamation” is the processing or regeneration of a material to recover a usable product (e.g., recovery of lead values from spent batteries, regeneration of spent solvents) (40 CFR 261.1(c)(4)). A material is “used or reused” if it is either: (1) employed as an ingredient (including use as an intermediate) in an industrial process to make a product (e.g., distillation bottoms from one process used as feedstock in another process) (40 CFR 261.1(c)(5)). However, a material will not satisfy this condition if distinct components of the material are recovered as separate end products (as when metals are recovered from metal-containing secondary materials); or (2) employed in a particular function or application as an effective substitute for a commercial product (e.g., spent pickle liquor used as phosphorous precipitant and sludge conditioner in wastewater treatment).

Small Quantity Generator (SQG) of Hazardous Waste means a generator that meets **all** the following criteria:

1. Generates, in a calendar month, more than 100 kg (220 lbs.) but less than 1,000 kg (2,200 lbs.) of RCRA hazardous waste, during one or more months in a year; **and**
2. Generates, in a calendar month, or accumulates at any time, no more than 1 kg (2.2 lbs.) of acute hazardous waste **and** no more than 100 kg (220 lbs.) of material from the cleanup of a spill of acute hazardous waste.

OR, your site is a Small Quantity Generator if the site:

1. Meets all other criteria for a Conditionally Exempt Small Quantity Generator, but
2. Accumulates, at any time, more than 1,000 kg (2,200 lbs.) of hazardous waste.

Small Quantity On-Site Burner Exemption means that persons who burn small quantities of hazardous waste in an on-site boiler or industrial furnace, in accordance with 40 CFR 266.108, are conditionally exempt from regulation for that activity.

Smelting, Melting, and Refining Furnace Exemption means that: owners or operators of smelting, melting, and refining furnaces that process hazardous waste solely for metal recovery are conditionally exempt from regulation, except for 40 CFR 266.101 and 266.112, provided they comply with the requirements in Section 266.100(d); owners or operators of smelting, melting and refining furnaces that process hazardous waste for recovery of precious metals are conditionally exempt from regulation, except for 40 CFR 266.112, provided they comply with the requirements in Section 266.100(g); and owners or operators of lead recovery furnaces that process hazardous waste for recovery of lead and that are subject to regulation under the Secondary Lead Smelting NESHAP are conditionally exempt from regulation, except for 40 CFR 266.101, provided they comply with the requirements in Section 266.100(h).

Solid Waste means any garbage, refuse, or sludge, or other materials not excluded under 40 CFR 261.4(a). Exclusions include, for example, domestic sewage and any mixture of other wastes that pass through a sewer system to a publicly owned treatment works (POTWs); industrial wastewater discharges that are point source discharges subject to regulation under the Clean Water Act; irrigation return flows; nuclear materials defined by the Atomic Energy Act; and in situ mining materials (see also page 33). Wastewaters being collected, stored, or treated before discharge and sludges generated by wastewater treatment are not excluded. The EPA defines hazardous waste as a subset of solid waste.

Notification of Regulated Waste Activity

Source Material that material as defined by the Atomic Energy Act of 1954: (1) Uranium, thorium, or any other material determined by the Commission pursuant to the provisions of Section 2091 of this title to be source material; or (2) ores containing one or more of the foregoing materials in such concentration as the Commission may by regulation determine from time to time.

Special Nuclear Material means that materia as defined by the Atomic Energy Act of 1954: (1) plutonium, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of Section 2071 of this title, determines to be special nuclear material, but does not include source material; or (2) any material artificially enriched by any of the foregoing, but does not include source material.

Transfer Facility means any transportation-related facility including loading docks, parking areas, storage areas, and other similar areas where shipments of hazardous waste are held during the normal course of transportation (40 CFR 260.10).

Underground Injection Control means the subsurface emplacement of fluids through a bored, drilled or driven well; or through a dug well, where the depth of the dug well is greater than the largest surface dimension. Underground injection wells are regulated under both the Safe Drinking Water Act and the Resource Conservation and Recovery Act (see 40 CFR Part 148).

United States Importer means any person who imports hazardous waste from a foreign country into the United States. This does not include hazardous waste shipped from a foreign Department of Defense site, Maquiladora, United States territory or protectorate.

Universal Waste means any of the following hazardous wastes that are managed under the universal waste requirements of 40 CFR Part 273: batteries, pesticides, thermostats, and lamps.

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

Used Oil Fuel Marketer means any person who conducts either of the following activities:

1. Directs a shipment of off-specification used oil from their RCRA site to an off-specification used oil burner; or
2. First claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in 40 CFR 279.11.

Used Oil Management Activities, for the purposes of the Site Identification Form, include used oil transportation; used oil processing and re-refining; burning off-specification used oil fuel; and used oil fuel marketing.

Notification of Regulated Waste Activity

Used Oil Processing means chemical or physical operations designed to produce from used oil, or to make used oil more amenable for production of, fuel oils, lubricants, or other used oil-derived products. Processing includes, but is not limited to: blending used oil with virgin petroleum products, blending used oils to meet the fuel specification, filtration, simple distillation, chemical or physical separation, and re-refining.

Used Oil Processor means a RCRA site that processes on- or off-specification used oil.

Used Oil Re-Refiner means a RCRA site that produces lubricating oils and greases, industrial fuel, asphalt extender, gasoline, and other products from on- or off-specification used oil.

Used Oil Transfer Facility means any transportation-related facility, including loading docks, parking areas, storage areas, and other areas where shipments of used oil are held for more than 24 hours during the normal course of transportation and not longer than 35 days. Transfer facilities that store used oil for more than 35 days are subject to regulation under 40 CFR Part 279, Subpart F.

Used Oil Transporter means any person who transports used oil, any person who collects used oil from more than one generator and transports the collected oil, and owners and operators of used oil transfer facilities. Used oil transporters may consolidate or aggregate loads of used oil for purposes of transportation but, with the following exception, may not process used oil. Used oil transporters may conduct incidental processing operations that occur in the normal course of used oil transportation (e.g., settling and water separation), but that are not designed to produce (or make more amenable for production of) used oil-derived products or used oil fuel.

Notification of Regulated Waste Activity

7. EPA Hazardous Waste Numbers for Waste Streams Commonly Generated by Small Quantity Generators

EPA recognizes that generators of small quantities of hazardous waste, many of which are small businesses, may not be familiar with the manner in which hazardous waste materials are identified in the Code of Federal Regulations. In order to aid small quantity generators in determining the EPA Hazardous Waste Numbers for their hazardous wastes that are needed to complete EPA Form 8700-12, two appendices are enclosed.

Appendix 1 lists 18 general industry categories that contain small quantity generators. For each of these categories, commonly generated hazardous wastes are identified. Appendix 2 lists EPA Hazardous Waste Numbers for each hazardous waste stream identified in Appendix 1.

To use these appendices:

1. Locate your industry in Appendix 1 to identify the hazardous waste streams common to your activities.
2. Find each of your hazardous waste streams in Appendix 2, and review the more detailed descriptions of typical hazardous wastes to determine which hazardous waste streams actually result from your activities.
3. If you determine that a hazardous waste stream does apply to you, report the 4-digit EPA Hazardous Waste Number in Item 11 of EPA Form 8700-12.

The industries and hazardous waste streams described here do not provide a comprehensive list but rather serve as a guide to potential small quantity generators in determining which of their solid wastes, if any, are hazardous. Except for the pesticide category, this insert does not include EPA Hazardous Waste Numbers for commercial chemical products that are hazardous when discarded unused. These chemicals and their EPA Hazardous Waste Numbers are listed in 40 CFR 261.33.

If the specific Hazardous Waste Number that should be applied to your hazardous waste stream is unclear, please refer to 40 CFR Part 261. Copies of Part 261 and other EPA regulations in 40 CFR are available at most libraries and on EPA's Internet page at:

<http://www.epa.gov/docs/epacfr40/chapt-I.info/>

In those cases where more than one Hazardous Waste Number is applicable, all should be used. If you have any questions, or if you are unable to determine the proper EPA Hazardous Waste Numbers for your hazardous wastes, contact your State Office (see page 2).

Notification of Regulated Waste Activity

Appendix 1

Typical Hazardous Waste Streams Produced by Small Quantity Generators

LABORATORIES

Acids/Bases, Heavy Metals/Inorganics,
Ignitable Wastes, Reactives, Solvents

PRINTING AND ALLIED INDUSTRIES

Acids/Bases, Heavy Metals/Inorganics,
Ink Sludges, Spent Plating Wastes, Solvents

PESTICIDE END USERS AND APPLICATION

Heavy Metals/Inorganics, Services, Pesticides,
Solvents

CONSTRUCTION

Acids/Bases, Ignitable Wastes, Solvents

EQUIPMENT REPAIR

Acids/Bases, Ignitable Wastes,
Lead Acid Batteries, Solvents

FURNITURE/WOOD

MANUFACTURING & REFINISHING
Ignitable Wastes, Solvents

OTHER MANUFACTURING (textiles, plastics, leather)

Heavy Metals/Inorganics, Solvents

LAUNDRIES AND DRY CLEANERS

Dry Cleaning Filtration Residues,
Solvents

EDUCATIONAL AND VOCATIONAL SHOPS

Acids/Bases, Ignitable Wastes, Pesticides,
Reactives, Solvents

BUILDING CLEANING AND MAINTENANCE

Acids/Bases, Solvents

VEHICLE MAINTENANCE

Acids/Bases, Heavy Metals/Inorganics,
Ignitable Wastes, Lead Acid Batteries,
Solvents

WOOD PRESERVING

Preserving Agents

MOTOR FREIGHT TERMINALS AND RAILROAD

Acids/Bases, Transportation, Heavy
Metals/Inorganics, Ignitable Wastes,
Lead Acid Batteries, Solvents

FUNERAL SERVICES

Solvents (formaldehyde)

METAL MANUFACTURING

Acids/Bases, Cyanide Wastes, Heavy
Metals/Inorganics, Ignitable Wastes,
Reactives, Solvents, Spent Plating Wastes

CHEMICAL MANUFACTURERS

Acids/Bases, Cyanide Wastes, Heavy
Metals/Inorganics, Ignitable Wastes,
Reactives, Solvents

CLEANING AGENTS AND COSMETICS

Acids/Bases, Heavy Metals/Inorganics,
Ignitable Wastes, Pesticides, Solvents

FORMULATORS

Acids/Bases, Cyanide Wastes, Heavy
Metals/Inorganics, Ignitable Wastes,
Pesticides, Reactives, Solvents

Notification of Regulated Waste Activity

Appendix 2

Typical Hazardous Waste Streams and EPA Hazardous Waste Numbers

ACIDS/BASES:

Acids, bases or mixtures having a pH less than or equal to 2 or greater than or equal to 12.5, and liquids that corrode steel at a rate greater than 0.25 inches per year are considered to be corrosive (for a complete description of corrosive wastes, see 40 CFR 261.22, Characteristic of Corrosivity). All corrosive materials and solutions have the EPA Hazardous Waste Number D002. The following are some examples of the more commonly used corrosives:

Examples of Corrosive Waste Streams	
Acetic Acid Ammonium Hydroxide Chromic Acid Hydrobromic Acid Hydrochloric Acid Hydrofluoric Acid Nitric Acid	Oleum Perchloric Acid Phosphoric Acid Potassium Hydroxide Sodium Hydroxide Sulfuric Acid

DRY CLEANING FILTRATION RESIDUES:

Cooked powder residue (perchloroethylene plants only), still residues, and spent cartridge filters containing perchloroethylene or valclene are hazardous and have an EPA Hazardous Waste Number of F002. Still residues containing petroleum solvents with a flash point less than 140°F are also considered hazardous and have an EPA Hazardous Waste Number of D001.

HEAVY METALS/INORGANICS:

Heavy Metals and other inorganic waste materials exhibit the characteristic of TCLP Toxicity and are considered hazardous if the extract from a representative sample of the waste has any of the specific constituent concentrations as shown in 40 CFR 261.24, Table 1. This may include dusts, solutions, wastewater treatment sludges, paint wastes, waste inks, and other such materials which contain heavy metals/inorganics (note that wastewater treatment sludges from electroplating operations containing nickel and cyanide are identified as F006). The following are TCLP Toxic:

Waste Stream	EPA Hazardous Waste Number
Arsenic	D004
Barium	D005
Cadmium	D006
Chromium	D007
Lead	D008
Mercury	D009
Selenium	D010
Silver	D011

Notification of Regulated Waste Activity

IGNITABLE WASTES:

Ignitable wastes include any flammable liquids, non-liquids, and contained gases that have a flashpoint less than 140°F (for a complete description of ignitable wastes see 40 CFR 261.21, Characteristic of Ignitability). Examples are spent solvents (see also solvents), solvent still bottoms, ignitable paint wastes (paint removers, brush cleaners, and stripping agents), epoxy resins, and adhesives (epoxies, rubber cements, and marine glues), and waste inks containing flammable solvents. Unless otherwise specified, all ignitable wastes have an EPA Hazardous Waste Number of D001.

Some commonly used ignitable compounds are:

Waste Stream	EPA Hazardous Waste Number
Acetone	F003
Benzene	D001
n-Butyl Alcohol	F003
Chlorobenzene	F002
Cyclohexanone	F003
Ethyl Acetate	F003
Ethylbenzene	F003
Ethyl Ether	F003
Ethylene Dichloride	D001
Methanol	F003
Methyl Isobutyl-Ketone	F003
Petroleum Distillates	D001
Xylene	F003

INK SLUDGES CONTAINING CHROMIUM AND LEAD:

This includes solvent washes and sludges, caustic washes and sludges, and water washes and sludges from cleaning tubs, and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead. All ink sludges have an EPA Hazardous Waste Number of K086.

LEAD ACID BATTERIES:

Used lead acid batteries should be reported on the notification form only if they are not recycled. Used lead acid batteries that are recycled do not need to be counted in determining the quantity of waste that you generate per month, nor do they require a hazardous waste manifest when shipped off your premises. (Note: Special requirements do apply if you recycle your batteries on your own premises -- see 40 CFR 266.80.)

Waste Stream	EPA Hazardous Waste Number
Lead Dross	D008
Spent Acids	D002
Lead Acid Batteries	D008, D002

ORGANIC WASTES:

See 40 CFR 261.24, Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristic for a list of constituents and regulatory levels.

Notification of Regulated Waste Activity

PESTICIDES:

Pesticides, pesticide residues, washing and rinsing solutions, and dips which contain constituent concentrations at or above Toxicity Characteristic regulatory levels (see 40 CFR 261.24) are hazardous waste. Pesticides that have an oral LD50 toxicity (rat) < 50 mg/kg, inhalation LC50 toxicity (rat) < 2 mg/L, or a dermal LD 50 toxicity (rabbit) < 200 mg/kg are hazardous materials. The following pesticides would be hazardous waste if they are technical grade, unused, and disposed. For a more complete listing, see 40 CFR 261.32-33 for specific listed pesticides, discarded commercial chemical products, and other wastes, wastewaters, sludges, and by-products from pesticide production. (Note that while many of these pesticides are no longer in common use, they are included here for those cases where they may be found in storage.)

Waste Stream	EPA Hazardous Waste Number
Aldicarb	P070
Aldrin	P004
Amitrole	U011
Arsenic Pentoxide	P011
Arsenic Trioxide	P012
Cacodylic Acid	U136
Carbamic Acid, Methylnitroso-Ethyl Ester	U178
Chlordane	U036
Copper Cyanides	P029
1,2-Dibromo-3-Chloropropane	U066
1,2-Dichloropropane	U083
1,3-Dichloropropene	U084
2,4-Dichlorophenoxy Acetic Acid	U240
DDT	U061
Dieldrin	P037
Dimethoate	P044
Dimethylcarbamoyl Chloride	U097
Dinitrocresol	P047
Dinoseb	P020
Disodium Monomomethane arsonate	D004
Disulfoton	P039
Endosulfan	P050
Endrin	P051
Ethylmercuric Chloride	D009
Famphur	P097
Nepthachlor	P059
Hexachlorobenzene	U127
Kepone	U142
Lindane	U129
2-Methoxy Mercuric Chloride	D009
Methoxychlor	D014
Methyl Parathion	P071
Monosodium Methanearsonate	D004
Nicotine	P075
Parathion	P089
Pentachloronitrobenzene	U185
Pentachlorophenol	U242
Phenylmercuric Acetate	D009
Phorate	P094
Strychnine	P108
Thallium Sulfate	P115
Thiram	U244
Toxaphene	P123
Warfarin	U248

Notification of Regulated Waste Activity

REACTIVES:

Reactive wastes include reactive materials or mixtures which are unstable, react violently with or form explosive mixtures with water, generate toxic gases or vapors when mixed with water (or when exposed to pH conditions between 2 and 12.5 in the case of cyanide- or sulfide-bearing wastes), or are capable of detonation or explosive reaction when irritated or heated (for a complete description of reactive wastes, see 40 CFR 261.23, Characteristic of Reactivity). Unless otherwise specified, all reactive wastes have an EPA Hazardous Waste Number of D003. The following materials are commonly considered to be reactive:

Waste Stream	EPA Hazardous Waste Number
Acetyl Chloride	D003
Chromic Acid	D003
Cyanides	D003
Organic Peroxides	D003
Perchlorates	D003
Permanganates	D003
Hypochlorites	D003
Sulfides	D003

SOLVENTS:

Spent solvents, solvent still bottoms, and mixtures containing solvents are often hazardous. This includes solvents used in degreasing and paint-brush cleaning and the distillation residues from reclamation. The following are some commonly used hazardous solvents (see also Ignitable Wastes for other hazardous solvents and 40 CFR 261.31 for most listed hazardous waste solvents):

Waste Stream	EPA Hazardous Waste Number
Benzene	D001
Carbon Disulfide	F005
Carbon Tetrachloride	F001
Chlorobenzene	F002
Cresols	F004
Cresylic Acid	F004
O-Dichlorobenzene	F002
Ethanol	D001
Ethylene Dichloride	D001
Isobutanol	F005
Isopropanol	D001
Kerosene	D001
Methyl Ethyl Ketone	F005
Methylene Chloride	F001 (Sludges), F002 (Still Bottoms)
Naphtha	D001
Nitrobenzene	F004
Petroleum Solvents (Flash-point less than 140°F)	D001
Pyridine	F005
1, 1, 1-Trichloroethane	F001 (Sludges), F002 (Still Bottoms)
Tetrachloroethylene	F001 (Sludges), F002 (Still Bottoms)
Toluene	F005
Trichloroethylene	F001 (Sludges), F002 (Still Bottoms)
Trichlorofluoromethane	F002
Trichlorotrifluoroethane	F002
White Spirits	D001

Notification of Regulated Waste Activity

SPENT PLATING AND CYANIDE WASTES:

Spent plating wastes contain cleaning solutions and plating solutions with caustics, solvents, heavy metals, and cyanides. Cyanide wastes may also be generated from heat treatment operations, pigment production, or manufacturing of anti-caking agents. Plating wastes are generally Hazardous Waste Numbers F006-F009. Heat treatment wastes are generally Hazardous Waste Numbers F010-F012. See 40 CFR 261.31 for a more complete description of plating wastes.

WOOD PRESERVING AGENTS:

Compounds or mixtures used in wood preserving, including the wastewater treatment sludge from wastewater treatment operations, are considered hazardous wastes. Bottom sediment sludges from the treatment of wastewater from wood preserving processes that use creosote or pentachlorophenol are hazardous and have an EPA Hazardous Waste Number of K001. In addition, wastewaters, process residuals, preservative drippage, and spent formulations from certain wood preserving processes are also hazardous wastes and carry EPA Hazardous Waste Numbers F032, F034, or F035, depending on the contaminants they contain. Unless otherwise indicated, specific wood preserving components are as follows:

Waste Stream	EPA Hazardous Waste Number(s)
Chromated Copper Arsenate	D004, F035
Creosote	K001, F034
Pentachlorophenol	K001, F032

RCRA Subtitle C Site Identification Form

Read all instructions before completing the form.

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9. Legal Owner (Continued) Address	Street or P. O. Box:	
	City, Town, or Village:	
	State:	
	Country:	Zip Code:

10. Type of Regulated Waste Activity

Mark "Yes" or "No" for all activities; complete any additional boxes as instructed. (See instructions on pages 17 to 20.)

A. Hazardous Waste Activities

Complete all parts for 1 through 6.

Y ☐ N ☐ 1. Generator of Hazardous Waste

If "Yes", choose only one of the following - a, b, or c.

- ☐ a. LQG: Greater than 1,000 kg/mo (2,200 lbs./mo.) of non-acute hazardous waste; or
- ☐ b. SQG: 100 to 1,000 kg/mo (220 - 2,200 lbs./mo.) of non-acute hazardous waste; or
- ☐ c. CESQG: Less than 100 kg/mo (220 lbs./mo.) of non-acute hazardous waste

In addition, indicate other generator activities.

Y ☐ N ☐ d. United States Importer of Hazardous WasteY ☐ N ☐ e. Mixed Waste (hazardous and radioactive) Generator**Y ☐ N ☐ 2. Transporter of Hazardous Waste**

Y ☐ N ☐ 3. Treater, Storer, or Disposer of Hazardous Waste (at your site) Note:
A hazardous waste permit is required for this activity.

Y ☐ N ☐ 4. Recycler of Hazardous Waste (at your site)**Y ☐ N ☐ 5. Exempt Boiler and/or Industrial Furnace**

If "Yes", mark each that applies.

- ☐ a. Small Quantity On-site Burner Exemption
- ☐ b. Smelting, Melting, and Refining Furnace Exemption

Y ☐ N ☐ 6. Underground Injection Control**B. Universal Waste Activities**

Y ☐ N ☐ 1. Large Quantity Handler of Universal Waste (accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal waste generated and/or accumulated at your site. If "Yes", mark all boxes that apply:

	<u>Generate</u>	<u>Accumulate</u>
a. Batteries	<input type="checkbox"/>	<input type="checkbox"/>
b. Pesticides	<input type="checkbox"/>	<input type="checkbox"/>
c. Thermostats	<input type="checkbox"/>	<input type="checkbox"/>
d. Lamps	<input type="checkbox"/>	<input type="checkbox"/>
e. Other (specify) _____	<input type="checkbox"/>	<input type="checkbox"/>
f. Other (specify) _____	<input type="checkbox"/>	<input type="checkbox"/>
g. Other (specify) _____	<input type="checkbox"/>	<input type="checkbox"/>

Y ☐ N ☐ 2. Destination Facility for Universal Waste

Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities

Mark all boxes that apply.

Y ☐ N ☐ 1. Used Oil Transporter

If "Yes", mark each that applies.

- ☐ a. Transporter
- ☐ b. Transfer Facility

Y ☐ N ☐ 2. Used Oil Processor and/or Re-refiner

If "Yes", mark each that applies.

- ☐ a. Processor
- ☐ b. Re-refiner

Y ☐ N ☐ 3. Off-Specification Used Oil Burner**Y ☐ N ☐ 4. Used Oil Fuel Marketer**

If "Yes", mark each that applies.

- ☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
- ☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

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11. Description of Hazardous Wastes (See instructions on page 21.)

A. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

B. Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes. Please list the waste codes of the State-regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed for waste codes.

12. Comments (See instructions on page 21.)

13. Certification. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

For the RCRA Hazardous Waste Part A Permit Application, all operator(s) and owner(s) must sign (see 40 CFR 270.10 (b) and 270.11).

(See instructions on page 21.)

Signature of operator, owner, or an authorized representative	Name and Official Title (type or print)	Date Signed (mm/dd/yyyy)

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CHAPTER 12 - ATTACHMENT 7
Uniform Hazardous Waste Manifest

The old Uniform Hazardous Waste Manifest form is acceptable to use through March 25, 2006. Visit the website below for further information about the amended rule, electronic manifests, and recent news.

The Hazardous Waste Manifest System

<http://www.epa.gov/epaoswer/hazwaste/gener/manifest/index.htm>

UNIFORM HAZARDOUS WASTE MANIFEST		1 Generator's US EPA ID No. | | | | | | | | | | | | | | | |		Manifest Document No. | | | | | | | | | | | | | | | |		2. Page 1 of		Information in the shaded areas is not required by Federal law					
3. Generator's Name and Mailing Address						A. State Manifest Document Number							
						B. State Generator's ID							
4. Generator's Phone ()													
5. Transporter 1 Company Name				6. US EPA ID Number | | | | | | | | | | | |		C. State Transporter's ID							
						D. Transporter's Phone							
7. Transporter 2 Company Name				8. US EPA ID Number | | | | | | | | | | | |		E. State Transporter's ID							
						F. Transporter's Phone							
9. Designated Facility Name and Site Address				10. US EPA ID Number | | | | | | | | | | | |		G. State Facility's ID							
						H. Facility's Phone							
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers		13. Total Quantity		14. Unit Wt/Vol		I. Waste No.	
						No. | Type							
J. Additional Descriptions for Materials Listed Above						K. Handling Codes for Wastes Listed Above							
15. Special Handling Instructions and Additional Information													
<p>16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.</p> <p>If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.</p>													
Printed/Typed Name					Signature					Month | Day | Year | | | | |			
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials					Signature					Month | Day | Year | | | | |		
	Printed/Typed Name					Signature					Month | Day | Year | | | | |		
	18. Transporter 2 Acknowledgement of Receipt of Materials					Signature					Month | Day | Year | | | | |		
	Printed/Typed Name					Signature					Month | Day | Year | | | | |		
FACILITY	19. Discrepancy Indication Space												
Y	20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.												
	Printed/Typed Name					Signature					Month | Day | Year | | | | |		

CHAPTER 12 - ATTACHMENT 8
Waste Management/Minimization Ideas

Waste Management/Minimization Ideas

This attachment describes the various types of waste materials that may be generated at a typical aggregate-producing facility. Options for minimizing use, recycling or replacing the product with a less hazardous substitute are discussed for each waste product. In the event that recycling is not possible, disposal options are discussed.

<i>Hazardous Waste</i>	<i>Waste Minimization and Recycling Options</i>
Lead/Acid Batteries	<ul style="list-style-type: none"> • Return failed batteries to the supplier for recycling.
Oil (Used)	<ul style="list-style-type: none"> • Recycle at an approved recycling facility. • Burn in an approved waste-oil burner
Paint/Paint Solvents	<ul style="list-style-type: none"> • Properly estimate amount of paint needed to avoid overstock. • Use up leftover paint by painting other items.
Parts Washing Solvents	<ul style="list-style-type: none"> • Check for non-hazardous products that may accomplish the same purpose. • Contract with a company like 'Safety Keen' to supply and remove the solvents.

<i>Non-Hazardous Waste</i>	<i>Waste Minimization and Recycling Options</i>
Antifreeze	<ul style="list-style-type: none"> • Use an environmentally safe antifreeze. • Recycle through the supplier or a recycling company like 'Safety Kleen'.
Cable	<ul style="list-style-type: none"> • Steel cable may need to be cut into manageable lengths for recycling.
Construction Debris	<ul style="list-style-type: none"> • Build berms or reclaim mined out areas of the pit.
Conveyor Belting	<ul style="list-style-type: none"> • Recycle (some vendors shred it for fuel or recycled rubber).
Crusher Wear Parts	<ul style="list-style-type: none"> • Return to supplier for recycling if at all possible. • Make use of old parts on site.
Drill Steel and Bits	<ul style="list-style-type: none"> • Contact a metal recycler, or use on site as fence posts or gates.
Greases/Lubricants	<ul style="list-style-type: none"> • Use environmentally safe lubricants whenever possible. • Many waste-oil recyclers accept grease. Check with your recycler.
Maintenance Area Waste	<ul style="list-style-type: none"> • Return used parts and fluid drums to the supplier for recycling. • Non-returnable parts should be cleaned and placed in a metal recycling bin.
Office Trash	<ul style="list-style-type: none"> • Recycle paper and cardboard (check with local recycler for separation procedures).
Oil (Used)	<ul style="list-style-type: none"> • Store non-hazardous used oil in a clearly marked waste oil storage tank and contact a reputable used oil recycler.
Oil Filters (Used)	<ul style="list-style-type: none"> • Check if a company in your area accepts oil filters for recycling. • Properly drain and crush prior to disposal in a solid waste landfill.
Oil/Water Separator Sludge	<ul style="list-style-type: none"> • Recycle through an oil recycler or a fuel-blending recycler. • If not recyclable, test for hazardous waste characteristics and dispose of accordingly.
Screen Cloth	<ul style="list-style-type: none"> • Recycle through a scrap-metal recycler.
Tires (Used)	<ul style="list-style-type: none"> • Return them to the tire distributor for recycling.
Vegetation Waste	<ul style="list-style-type: none"> • Recycle if possible. Ask your local landfill about composting/mulching areas.

CHAPTER 13

ENVIRONMENTAL AUDITING – A COMPLIANCE AND RISK MANAGEMENT TOOL FOR THE INDIANA MINERAL AGGREGATES INDUSTRY

INTRODUCTION

Environmental auditing is a valuable compliance and risk management tool. Throughout the regulated community, the use of environmental auditing has greatly increased in the past decade and promises to be even more common in the future. The use of environmental auditing was initially motivated by fear of environmental liability, but it is now simply considered to be a good business practice. The Indiana Mineral Aggregates Association strongly encourages its members to implement an environmental auditing program.

This guide is intended to provide the reader with a general understanding of environmental auditing and its usefulness to the Indiana Mineral aggregates industry.

WHAT IS AN ENVIRONMENTAL AUDIT?

According to the U.S. EPA's "Policy on Environmental Auditing," published in the July 9, 1986 Federal Register, an environmental audit is defined as:

“a systematic, documented, periodic and objective review by regulated entities of facility operations and practices related to meeting environmental requirements.”

Indiana Code (IC) 13-10-3-1 defines an environmental audit as a voluntary, internal, and comprehensive evaluation of:

1. A facility or an activity at a facility regulated under:
 - a. IC 13 (the environmental statutes);
 - b. A rule or standard adopted under IC 13;
 - c. Any determination, permit, or order made or issued by the Commissioner of the Indiana Department of Environmental Management under IC 13; or
 - d. Federal law; or
2. Management systems at a facility, or an activity; that is designed to identify and prevent noncompliance with laws and improve compliance with laws; and is conducted by an employee of the owner or operator, or by an independent contractor.

An environmental audit assesses the facility's compliance status and history, evaluates employee awareness, evaluates training requirements, and evaluates environmental management systems in light of applicable regulatory requirements.

Environmental auditing can be compared to financial auditing, which similarly analyzes past performance, assesses current performances and projects future performance. Just as the discipline of financial auditing can be broken down into sub-disciplines, so can environmental auditing. The term environmental audit is often generically used, or used interchangeably with terminology such as:

- Site assessment;
- Due diligence;
- Compliance audit; or
- Risk assessment.

For purposes of clarity, this manual makes a distinction between environmental audits, environmental site assessments and risk analyses and focuses upon environmental audits.

In 1999, IDEM implemented a Self-Disclosure Environmental Audit Policy. The policy provides a framework for businesses to voluntarily discover, disclose, correct and prevent violations. If a company performs an audit and uses the policy to disclose violations to IDEM that were discovered, IDEM will reduce the penalties assess for the violations. EPA has a similar policy at the federal level. As with any such policy certain conditions apply and legal counsel should be consulted prior to communicating with IDEM.

TYPES OF ENVIRONMENTAL AUDITS

CONFORMANCE AUDITS

Facilities will normally perform two specific types of conformance audits: 1.) a compliance audit and 2.) a management systems audit. The former verifies compliance with respect to environmental requirements (e.g., regulations and permit conditions). The latter evaluates the effectiveness of basic environmental management by verifying that management systems for environmental compliance activities are in place, functioning and adequate.

PROPERTY TRANSACTIONS OR ENVIRONMENTAL SITE ASSESSMENTS

The property transaction (environmental) site assessment is designed to identify potential environmental liabilities associated with past and present uses of a property. It has evolved to help buyers, sellers and financial institutions evaluate risks associated with property transactions. Whether an aggregate business engages in property acquisitions, divestitures or mergers, the environmental site assessment is a useful risk management tool. For example, when purchasing an existing quarry or sand and gravel pit, an environmental site assessment could identify that prior use of the property included activities which resulted in contamination of the site. It also evaluates surrounding properties for activities that could potentially contaminate the property in question. Such an assessment would allow you, as the buyer, to become aware of remediation potentially needed to bring the site into compliance. Such information regarding the risks associated with purchase of the property permits the buyer to make a sound business decision.

The mechanics of how an Environmental Site Assessment is conducted is similar to the process of conducting an environmental audit. A brief description of the methods for conducting Environmental Site Assessments is included in [Attachment 1](#).

RISK ANALYSIS

A risk analysis assesses the potential for environmental problems and determines appropriate measures to determine the probability of incurring environmental liabilities in the future. By utilizing the risk analysis tool, the aggregate industry could minimize risk and better manage business operating costs. For example, a risk analysis of an aggregate business could result in recommendations that, if implemented, could result in lower insurance rates.

WHY IMPLEMENT AN ENVIRONMENTAL AUDITING PROGRAM?

Many forces could motivate a business to implement an environmental audit program. As a result of increased environmental regulation, federal, state and local enforcement of such regulation and the costs of non-compliance, the regulated community's interest in the environmental liability has motivated businesses to implement an environmental auditing program in order to identify areas of non-compliance and determine appropriate measures to ensure compliance. Other forces also drive businesses to implement environmental auditing programs. Today, a growing number of businesses are motivated by demands from a variety of corporate stakeholders (e.g., owners, employees, communities, customers and special interest groups). The stakeholders' message is that environmental auditing is good environmental management and good business management. Business is beginning to understand that in order to effectively manage future environmental risks, an accurate assessment of both the company's compliance status and the overall environmental management system is necessary.

In general, the benefits of a successful environmental auditing program can be categorized as improving: 1) a company's financial position ("bottom line"), 2) compliance status and 3) stakeholder relations.

Examples of the benefits that a successful environmental auditing program could generate include:

FINANCIAL BENEFITS

- The identification of issues of non-compliance sooner versus later, so lower corrective action costs can be realized.
- The identification of waste minimization opportunities, which may result in reduced operating costs.

COMPLIANCE BENEFITS

- Reduction of agency enforcement actions and penalties.
- Increased employee awareness of environmental standards and responsibilities.

STAKEHOLDER RELATIONS

- Improved employee relations and increased employee morale.
- Improved community image of the company.

PLANNING THE AUDIT

Convincing yourself or management to conduct the environmental audit is usually the most difficult task in the environmental auditing process. Once you or management is sold on the idea, then the audit framework must be constructed. This section explains the planning phase of the environmental auditing process.

DEFINING GOALS

Prior to conducting the audit, goals should be clearly defined. For example, are your goals to determine one facility's compliance with a single or multiple regulations (e.g., "Is Quarry A in compliance with the storm water discharge regulations?") or to assess the effectiveness of company-wide environmental management systems.

It is critical that management be committed to the auditing process. Where instances of non-compliance are identified, management must be committed to taking corrective action. Under IC 13-7-13-3, intentionally, knowingly, or recklessly violating environmental laws is a criminal offense. Also, failure to promptly initiate and pursue appropriate effects to achieve compliance will limit the privilege attached to the environmental audit under IDEM's Self-Disclosure Policy.

ASSEMBLING THE AUDIT TEAM

If you choose to perform the audit yourself (although it is recommended that the first audit be performed by a competent environmental consultant, to ensure that all applicable regulations are identified), you need to assemble an audit team. This team may consist of the plant manager, so that decisions can be made quickly and so that he/she can stay informed of progress, a person at the operations level, and possibly a maintenance person. Or, you may want to assemble an independent audit team of persons not associated with the operation on a daily basis. This will help insure that the audit is free from personal bias.

This is the team that will not only identify problem areas, but also will work to correct any problems that are found.

PRE-AUDIT RESEARCH

You will need to conduct some research prior to the physical audit of the plant and its records. You should review:

- Previous regulatory inspection reports.
- Other similar facilities regulatory inspection reports.
- Regulatory agency strategic and program plans, to see what areas the agency is concentrating on.
- Current and proposed federal, state, and local laws, regulations and policies.
- Local, state, or federal files on your facility.

It is very important to understand the regulations that are applicable to you and the methods by which you must comply. This is why it is a good idea to get a competent environmental consult to perform your first audit.

Regulatory review entails the review of environmental laws and regulations which govern areas to be addressed during the audit. Because local regulations may be more stringent than those of the federal government, the audit must ultimately ensure compliance with most stringent regulations. It is also important to consider proposed regulations which, if implemented, will eventually have an impact on the operation.

A thorough review of all company and any available agency records should follow the regulatory review process. The records review process provides an environmental history of the site which can significantly reduce the time required for the site investigation if specific problem areas can be isolated.

An example of the types of records that should be reviewed during this process include:

- Permits and documents related to permit compliance status.
- Spill/cleanup documents.
- Topographical maps and aerial photos.
- Internal correspondence and reports.
- Notices of violation.
- Correspondence with regulatory agencies.

All records of suspected past violations may not be documented; therefore, the records file search cannot be regarded as definitive determinant of a site's compliance/non-compliance.

MANAGING THE RISKS OF ENVIRONMENTAL AUDITING

Management must not only have an understanding of what the environment audit will yield, but also of the risks entailed in conducting the environmental audit. With careful planning, the advantages of conducting an environmental audit should outweigh the risks.

Fortunately, in Indiana, an environmental audit report is privileged and is not admissible as evidence in a civil, criminal, or administrative legal action (IC 13-30-3-3). However, the audit privilege is limited (IC 13-30-3-4). It must not be used for fraudulent purposes, and operations must properly address areas of noncompliance within a reasonable time frame. *A company must follow all the guidelines and requirements in the statute and associated policy to claim the confidentiality privilege.*

It must also be realized that uncovering information through a compliance audit may trigger an obligation to report under the environmental laws or an obligation to disclose under the securities laws. Failure to do so can subject both a business and its individual employees to fines and/or other penalties.

NOTE: Though significant risks and costs can be associated with implementing an environmental auditing program, not taking a proactive environmental management position is usually more risky and expensive. Your best means for managing the risks associated with environmental auditing is to ensure a total corporate commitment to address issues of “non-compliance.”

Because of the complex law relating to confidentiality, there is no guarantee that confidentiality can be maintained. Three legal tools may protect at least some of the information from disclosure. These tools are: 1) attorney-client privilege, 2) the work-product doctrine and 3) the protection for self-evaluation.

1. Attorney-Client Privilege

The most well developed and strongest of the three relevant protections is the privilege protecting communications between attorneys and their clients. A number of criteria govern the application of the attorney client privilege. Legal counsel should be consulted to discuss these criteria.

2. The Work-Product Doctrine

The work-product doctrine provides qualified protection for materials prepared by or for a party, its agent or counsel in anticipation of litigation or for a trial. Unlike the attorney-client privilege, work-product immunity is not absolute and may be overcome by a show of substantial need on the part of an adversary for the materials, and if undue hardship exists in obtaining their equivalent from other sources.

3. The Protection for Self-Evaluation

The third potential basis for protecting an environmental audit from disclosure is the qualified protection for frank self-evaluation. The reasoning behind this doctrine is that the public interest is thought to be served when a company undertakes candid examination of its compliance.

Again, environmental audit reports, including field notes, records, drawings, photographs or other information assembled during an audit are privileged.

CHOOSING A CONSULTANT

Once goals are developed and a decision has been made regarding the role of legal counsel, then the consultant selection process begins. This is assuming that you have already decided not to perform the audit with internal personnel.

Finding a qualified consulting firm to conduct an environmental audit is not as simple as picking up the Yellow Pages. Because environmental auditing is a relatively new profession, there is no formal regulation of auditing practices. In the absence of such programs, investigating the following criteria can assist in choosing a qualified firm to conduct a quality audit:

RANGE OF SERVICES

Some people suggest that because of the breadth of issues an environmental audit may uncover, it is best to select a “full service” firm which offers a wide range of environmental services. While this is a valid suggestion, one should be more concerned that the consulting firm is best matched to assist you in meeting your goals. Remember, bigger is not always better.

EXPERIENCE

It is important that the consulting firm you select employs a staff with the technical capability to meet your goals. It is also important to ensure that, where necessary, the firm’s staff possess the appropriate licenses/certifications.

The firm in general should have experience working within the mining/aggregates industry and be familiar with the concerns specific to the industry. Be sure to ask, “Exactly who will work on this project?” The quality of your project will only be as good as the assigned project team.

CLIENT SERVICE

As mentioned above, the consulting firm should demonstrate sensitivity to the particular requirements and budget of your project. Before contracting with a firm, ask to see a “Statement of Qualifications” and examples of audits prepared for others in the mining/aggregates industry so you can assess their capabilities.

The Indiana Manufacturers Associate and the Indiana Chamber of Commerce can be helpful in finding a competent consultant to perform your environmental audit.

CONDUCTING THE AUDIT

After the scope of work has been determined and a consultant chosen (see previous section), the actual audit occurs. Completing the audit will involve the following activities:

Site visit to physically inspect the plant and its records.

- Review of records for procedural compliance with regulations.
- Conduct interviews with key personnel.
- Make a record of everything, with written documentation and photographs.
- Assembly of a report, through an attorney (see below).
- Implement a process that collects, analyzes, interprets, and documents information sufficient to achieve audit objectives.
- CORRECT THE PROBLEMS within a reasonable time frame.

Please note that the most common violations that a company may encounter are RECORDKEEPING violations. Improper or nonexistent records that are required under various programs (air permits, hazardous waste, discharge to surface water) are the most commonly identified violations that result in fines.

INTERVIEWS WITH KEY PERSONNEL

Interviews should involve site personnel, including maintenance employees, employees who were involved with or have knowledge of past problems, and regulatory agency personnel involved with the administration of the regulations.

SITE INVESTIGATION

The goals set early in the audit process and the results from the regulatory review, the records review and the interviews largely determine the procedure followed during the site investigation process of the environmental audit. An audit protocol (checklist) will help guide the investigation. There are sample protocols available which might be useful. Please contact the IMAA to see if they have sample protocols for environmental audits in the mineral aggregates industry.

If the team confronts a specific problem area (e.g., asbestos, wetlands) and do not have the necessary expertise, specialists should be consulted.

REPORT

Upon completion of the site investigation, the audit team produces a report documenting their findings and recommendations.

A good audit report will identify all the regulations that a facility falls under, will provide an evaluation of whether the facility is or is not in compliance, and will provide sound, practical recommendations for coming into compliance.

CONCLUSION

It is sound business practice to assess compliance with all potentially applicable regulatory programs, whether they be tax, liability, financial, operations, or environmental. The IMAA urges all of its members to make some attempt to identify all the regulations that may apply to an aggregate facility. This manual will assist you in that effort. Further research into local (city or county) regulations and programs that may be specific to your site are recommended for a full understanding of your responsibilities under environmental rules and laws.

CHAPTER 13 – ATTACHMENT 1
Conducting a Property Transaction Environmental Site Assessment

ATTACHMENT 1 CONDUCTING A PROPERTY TRANSACTION ENVIRONMENTAL SITE ASSESSMENT

In general, a property transaction site assessment should provide:

- a detailed history of past and present land uses of the property;
- a review of local, state and federal environmental records for the site and surrounding properties to identify known or potential areas of environmental concern (e.g., underground storage tank locations, regulated or hazardous waste spills/leaks, hazardous material storage, etc.);
- a visual inspection of the site and adjacent properties for visible signs of existing or potential environmental problems; and
- an identification of potentially affected human and/or environmental receptors (e.g., groundwater/drinking water, etc.).

Three primary tasks are performed when conducting a Property Transaction Site Assessment: (1) Site History, (2) Site Investigation and (3) Reporting.

Site History

The first task performed when conducting a Property Transaction Site Assessment is a detailed review of the site's history. Site history information is obtained by reviewing available public records with and any records maintained by the present property owner. Interviews of public agency representatives and employees, neighbors and others associated with the subject property are also conducted to piece together a detailed site history.

Site Investigation

The second task undertaken in conducting a Property Transaction Site assessment is the site investigation. The purpose of the site investigation is to visit the site so a characterization of risks can be made and potentially affected human and/or environmental receptors identified.

Report

The third task in completing a Property Transaction Site Assessment is the production of a final report which is the compilation of the information collected during the site history review and site investigation. The report should assist the reader in assessing the environmental risks associated with the property transaction so that an informed business decision can be made regarding the transaction of the property.

PHASE I, PHASE II AND PHASE III PROPERTY TRANSACTION SITE ASSESSMENTS

The three primary tasks identified above are usually described as a "Phase I." The Phase I is based upon readily available information and field observations and can be thought of as a qualitative review of the site.

If a Phase I report identifies the potential for environmental contamination, then a "Phase II" is conducted. A Phase II usually consists of a site survey which assesses the specific environmental concerns identified in the Phase I. Samples (e.g., soil, groundwater, surface water, air) are taken for appropriate chemical characterization. Based upon laboratory analyses, a Phase II report is prepared. The report identifies the need for any further investigation or remedial action.

If the Phase II confirms the presence of environmental contaminants, a Phase III is undertaken. The Phase III is a remediation action plan for the site— simply a plan of how to clean up the site.

CHAPTER 14

POLLUTION PREVENTION IN INDIANA

INTRODUCTION

Pollution prevention is the preferred means of environmental protection in Indiana. It is a priority for the state, and the IMAA encourages you make it a priority for your business. The goal of pollution prevention is to promote changes in business and commercial operations, especially manufacturing processes, so that less hazardous substances are used and less wastes are generated.

Pollution prevention can save money, especially in the long run. It often lowers raw materials costs, improves process efficiency, and reduces your waste management and pollution control costs. It can lead to a safer workplace and environment. It can also reduce the liability associated with handling toxic materials and the burden of complying with regulations that are designed to protect workers, the public, and the environment.

Participation in Indiana's pollution prevention program is completely voluntary. You cannot be required to practice pollution prevention through any IDEM action (unless federal law authorizes it). However, some federal, state, and local programs may already require you to implement some aspects of pollution prevention. For example, large quantity generators of hazardous waste must have a waste minimization program in place. Even though waste minimization is a less broad concept than pollution prevention, the basic approach is the same.

Other programs that require pollution prevention activities apply:

- If a facility discharges storm water associated with industrial activity it must develop a storm water pollution prevention plan.
- If a facility stores oil certain thresholds over, it must develop a Spill Prevention Control and Countermeasure (SPCC) Plan (see Chapter 11 for more information).
- If a facility discharges wastewater under an NPDES permit, it may need to develop a Best Management Practices program.
- If a facility discharges wastewater to a municipal sewage treatment plant, the municipality may require it to develop a slug control plan to prevent non-routine discharges to the treatment plant.

WHAT IS POLLUTION PREVENTION?

Pollution prevention means employing a practice that reduces the use of toxic materials, or reduces the environmental and health hazards associated with environmental waste without diluting or concentrating the waste before the release, handling, storage, transport, treatment or disposal of the waste.

Pollution prevention includes input changes, product reformulations, redesign of production processes, operational improvements, and in-process recycling. Pollution prevention does not include waste burning, waste shifting, off-site or on-site open loop waste recycling, or waste exchange. Pollution prevention emphasizes an approach that takes into account all the different places a waste can end up: air, water, land, and the workplace. This concept is also known as a multi-media approach. Just because a waste is prevented from going into the air does not mean it is gone; it must go somewhere else.

The documents in [Attachment 1](#) to this chapter help to explain Indiana's Pollution Prevention Program in more detail. The IMAA encourages all aggregate facilities to develop their own pollution prevention program, and to share ideas with other aggregate facilities. Consider the following before getting started:

- Obtain a commitment from top management.
- Develop a multi-media pollution prevention plan.
- Exchange information within your company and with other companies.
- Plan to monitor and revise your program periodically to continue to improve.

SOME IDEAS TO GET STARTED

Here are some ideas you can use to get started on your way to implementing pollution prevention at your aggregate facility:

- Establish a comprehensive preventive maintenance program. This program can incorporate the identification of alternate materials to be used for cleaning or other maintenance activities, and should be used to develop activities that will prevent releases of materials into the environment.
- Establish a means to control and monitor the purchase and use of hazardous materials in order to minimize waste, and the amount of hazardous materials that are on-site at any one time.
- Establish an aggressive housekeeping program for the entire facility.

- Train employees in the concept of pollution prevention, implement total quality management concepts, and establish bonus or incentive programs that encourage participation.

If you would like more information about Indiana's Pollution Prevention Program, visit the website at <http://www.in.gov/ide/oppa/> or contact the Office of Pollution Prevention and Technical Assistance at 1-800-988-7901 or see Appendix A under Pollution Prevention for other contact numbers.

CHAPTER 14 – ATTACHMENT 1
Indiana's Pollution Prevention Program

The following attachment includes a brochure regarding Pollution Prevention in Indiana. For more information about Pollution Prevention visit the IDEM P2 Website using the following link.

<http://www.in.gov/idem/oppta/p2/>

Defining Opportunities for...

POLLUTION PREVENTION



**Indiana's preferred alternative
for environmental protection
and economic success**

IDEM

Indiana Department of
Environmental Management

OPPTA

Office of Pollution Prevention
And Technical Assistance

What is Pollution Prevention (P²)?

Pollution Prevention means:

- “Source reduction,” as defined under the Federal Pollution Prevention Act (1990), and
- Other practices that reduce or eliminate the creation of pollution through:
- Increased efficiency in the use of raw materials, energy, water, or other resources, or
- Protection of natural resources by conservation.

Source Reduction, as defined under the Pollution Prevention Act, is any practice which:

- Reduces the amount of any hazardous substance, pollutant or contaminant entering any waste stream, or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment, or disposal and
- Reduces the hazards to public health and the environment associated with the release of such substances, pollutants or contaminants.

What Does P² Include?

- Equipment or technology modifications, process or procedure modifications,
- Reformulation or redesign of products, Substitution of raw materials, and
- Improvements in housekeeping, maintenance, training, or inventory control.
- Some practices commonly described as “in process recycling” may qualify as pollution prevention if the recycling system is totally enclosed, hard-piped continuously running, integral to the process, and no shifting of waste occurs from one environmental media to another.

What Does P² Not Include?

- **Recycling:** The toxic chemical or mixture containing the toxic chemical is recycled on-site or off-site.
- **Energy recovery:** The use of a waste material that is combustible and has a heating value high enough to sustain combustion when used in combustion units integrated into an energy recovery system (i.e., industrial furnaces, industrial kilns, and boilers), either on-site or off-site.
- **Treatment:** The chemical or physical modification or neutralization of a toxic chemical or mixture on-site or off-site.
- **Disposal:** Off-site or on-site transfer of waste material to either sub-surface or land disposal facilities (including the abandonment of barrels, container, and other closed receptacles).

Why Multi-Media?

Pollution prevention emphasizes a multi-media approach. Multi-media refers to air, water, land and workplace environmental media into which pollutants and wastes are emitted, released, discharged, or disposed.

This holistic view of an operation goes to the source of a problem, examines it, and recommends solutions that do not transfer the problem to a different location or form. The end result is actual reduction in the quantity of toxic materials or environmental wastes created in the first place.

Why P²

Stimulates Reinvestment & Enhances Competitiveness

Reduces Government Regulatory Involvement

Reduces Liability & Regulatory Costs

Increases Environmental Protection

Maintains Inventory Control

Reduces Worker Exposure

Mitigates Social Conflicts

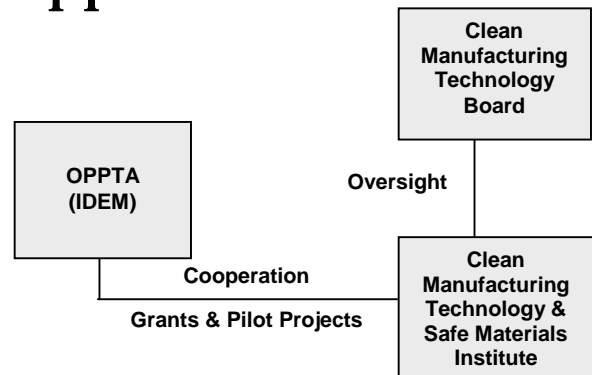
Reduces Waste Shifting

Saves Money

What is Indiana's approach?

In 1990, the Industrial Pollution Prevention and Safe Materials Act was passed and signed into law. The Act as amended in 1997 includes the provision of Indiana's overall effort in pollution prevention; the Clean Manufacturing Technology Board, the Indiana Clean Manufacturing Technology and Safe Materials Institute (CMTI) and the Office of Pollution Prevention and Technical Assistance (OPPTA) which is housed within the Indiana Department of Environmental Management. All three entities work together to promote clean manufacturing and pollution prevention within the State of Indiana.

The Clean Manufacturing Technology Board is mandated to oversee the CMTI and provide a forum for discussion on clean manufacturing and pollution prevention issues. The CMTI, selected by the Board to be housed at Purdue University, is charged with promoting clean manufacturing to Indiana manufacturers through training, research and development, onsite technical assistance, and policy studies.



IDEM promotes pollution prevention activities in the manufacturing and commercial sectors of Indiana. The Office of Pollution Prevention and Technical Assistance (OPPTA) leads IDEM's proactive role in preventing environmental damage by encouraging manufacturers to incorporate pollution prevention into their operations.

Pollution prevention aims to protect the environment by conserving our finite natural resources and preventing the generation and release of environmental wastes and pollutants.

How is the OPPTA assisting Indiana to move towards Pollution Prevention?

OPPTA:

- Promotes the advantages of pollution prevention through education;
- Integrates pollution prevention opportunities for all the regulatory functions of the Indiana Department of Environmental Management;
- Administers the Governor's Awards for "Excellence in Pollution Prevention";
- Sponsors and develops pilot projects and case studies by means of pollution prevention in Indiana;
- Support Annual Pollution Prevention Conference and Trade Show;
- Support Partners for Pollution Prevention;
- Support Department of Defense/State of Indiana Pollution Prevention Partnership;
- Promotes Governor's Toxics Reduction Challenge
- Provides regulatory compliance assistance through pollution prevention;
- Proactively offers pollution prevention opportunities for Indiana businesses through inspection referrals.
- Operates an electronic technical resource website for pollution prevention information;

For more information on how you can benefit from OPPTA, call:

**1-800-988-7901
ext. 8172**

Visit us on the Web at:

<http://www.IN.gov/idem/oppta/p2/>

Or email us at: p2@dem.state.in.us

POLLUTION PREVENTION PLANNING: SIX STEPS TO \$AVINGS

<p>1 Make sure MANAGEMENT supports the effort to investigate pollution prevention opportunities and make changes. Form a Planning Team. Individuals from different departments of the plant can play roles in each step of the planning process. Let everybody know what's going on. SEEK INPUT from personnel at all levels. They are your most valuable asset.</p>	<p>2 Take a critical look at each step of your production process, from purchasing raw materials to shipping finished product. Pinpoint where materials are used and where wastes are generated. Figure out TRUE COSTS of waste generation, including disposal & regulatory costs. These costs, along with other factors, will help you Prioritize losses and TARGET your pollution prevention efforts.</p>	<p>3 The first step to finding effective ways to reduce material losses is to get at the ROOT CAUSE of the problem. What factors are responsible for creating the waste? Poor equipment maintenance? Type of raw materials used? Scheduling? Once you've figured this out, it's time to be creative. List as many alternatives as possible for reducing loss. Use group brainstorming, employee incentives, or outside assistance to generate lots of ideas.</p>
<p>4 You may be able to implement the easy, inexpensive projects right away without further study. For more complex alternatives, determine which are feasible based on three major criteria: 1. Effectiveness 2. Implementability 3. Cost SELECT alternatives for implementation using one or more decision-making tools.</p>	<p>5 Schedule projects keeping in mind resources, time, and financial constraints. Assign responsibilities for who is going to do what and when. TALK to the workers who will be affected by the changes you'll make. Include them in the implementation phase. Stay in touch after implementation, get employee Feedback, and work out the bugs.</p>	<p>6 Track waste generation, material usage, and cost savings as a result of the changes you've made. Use a method of measuring pollution prevention that takes into account variations in production level. Document results. Publicize and CELEBRATE your success! Now Go back to Step 2. Keep the momentum going. There's more work to do.</p>

Indiana Department of
Environmental Management

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF POLLUTION PREVENTION
150 WEST MARKET STREET, SUITE 703
INDIANAPOLIS, INDIANA 46204

Appendix A

Contact Names and Telephone Numbers Of state and federal regulatory programs (Area code 317 unless otherwise noted)

GENERAL INFORMATION

The Indiana Department of Environmental Management is the head agency for environmental programs in Indiana. The mailing address for the Main and North, Northwest, and Southwest Office follow.

Environmental Emergencies (Spills and Fish Kills): (24 Hours) 888 233-7745

MAIN OFFICE

Indiana Department of Environmental Management
Indiana Government Center-North
100 N. Senate Ave.
Indianapolis, IN 46204
(800) 451-6027 (toll-free in Indiana) or
(317) 232-8603

NORTHERN REGIONAL OFFICE

Director - Terry Coleman
Deputy Director - Dave Lawrence
IDEM Northern Regional Office
220 West Colfax Avenue, Suite 200
South Bend, Indiana 46601-1634
Phone: (574)245-4870
Phone: (800)753-5519 (*Toll free within Indiana*)
Fax: (574)245-4877

NORTHWEST REGIONAL OFFICE

Director - Malini Goel
Deputy Director - Robert Simmons
Northwest Regional Office
8315 Virginia St., Ste. 1
Merrillville, IN 46410
Phone: (219) 757-0265
Phone: (888) 209-8892 (toll free within Indiana)
Fax: (219) 757-0267

SOUTHWEST REGIONAL OFFICE

Director - Judy Dicus Thomann
Deputy Director - David Holder
IDEM Southwest Regional Office
1120 N. Vincennes Ave.
P. O. Box 128

Petersburg, IN 47567-0128
Phone: (812) 380-2305
Phone: (888) 672-8323 (Toll free within Indiana)
Fax: (812) 380-2304

ABOVE GROUND STORAGE TANKS

State Fire Marshall 232-2222

AIR QUALITY

Office of Air Quality
10th Floor, Indiana Government Center North (IGCN)

General Information:

Main Fax Number:

Assistant Commissioner: 232-5586

Permit Branch Chief: 232-8217

Air Permits Section 1 Nysa James 233-6875

Asphalt industries should all be under Section 1

Air Permits Section 2 Kathy Moore 233-0871

All aggregate industries should fall within Section 2 except asphalt industries

Air Programs Branch Chief: Kathy Watson 233-5694

Compliance Branch Chief Phil Perry 232-8457

Air Compliance Section 1 Herm Carney 232-8440

Air Compliance Section 2 Janusz Johnson 233-2841

CHAMBER OF COMMERCE

Your local Chamber of Commerce may be able to provide assistance with regulatory questions.

Indiana Chamber of Commerce 264-3110

CLAY OR SHALE EXTRACTION PERMITS

Indiana DNR, Division of Reclamation 812 665-2207

COMPLIANCE AND TECHNICAL ASSISTANCE PROGRAM (CTAP)

Confidential Technical Assistance 800 988-7901

Mineral Aggregates Mark Stoddard 233-1039

Fax Number 233-5627

CONSTRUCTION IN A FLOODWAY/MINING BENEATH A NAVIGABLE WATERWAY

Indiana Department Of Natural Resources, Indiana Government Center South (IGCS)
Division Of Water, Room W264

Director Mike Neyer 232-4160

FIRE MARSHAL, OFFICE OF THE

State Fire Marshal: Roger Johnson 232-2226

Deputy State Fire Marshal:

Mike Bigler

233-4561

HAZARDOUS COMMUNICATION

Indiana Department of Labor

232-2655

800 743-3333

www.osha.gov

www.msha.gov

Bureau Of Safety, Education And Training (BuSET)

232-2688

Indiana State Department of Health (ISDH):

633-8403

HAZOURDOUS MATERIALS – TRANSPORTATION (DOT) ISSUES

State police Commercial Vehicle Enforcement Division enforces DOT hazardous materials transportation regulations.

Information:

615-7373

HAZARDOUS WASTE DISPOSAL

Inspections:

Rosemary Cantwell 308-3003

John Crawford 308-3113

Regulatory Information:

Mary Lewis 308-3103

Permits:

Vic Windle 232-3242

INDUSTRIAL DISCHARGE PERMIT AND COMPLIANCE

Contact your Publicly Owned Treatment Works (POTW) or sewage treatment plant for contact names and information

LEGISLATIVE SERVICES AGENCY

Call for copies of state rules and laws

State Information Center:

800 45-STATE

233-0800

HOUSE OF REPRESENTATIVES

Indiana House of Representatives

200 W. Washington Street

Indianapolis, IN 46204-2786

(317) 232-9600

(800) 382-9842

SENATE

Indiana State Senate

200 W. Washington Street

Indianapolis, IN 46204-2785

(317) 232-9400

(800) 382-9467

MINES

Bureau of Mines Contact:

812 882-7242

The Bureau of Mines, headquartered in Vincennes, Indiana, inspects all Indiana underground and strip coal mining operations, enforces blasting regulations, and certifies specific mining occupations. The Bureau also maintains a mine rescue station, trains mine rescue teams, and collects and indexes mine maps.

NPDES – WASTEWATER AND STORMWATER PERMITTING

Information & Permitting:	Bruno Pigott	232-8631
Compliance Inspections:	Rick Roudebush	234-2579

POLLUTION PREVENTION

Indiana Department of Environmental Management
Office of Pollution Prevention & Technical Assistance
402 W. Washington St., Rm. W-041
Indianapolis, IN 46204

Information:		232-8172
	800	988-7901

Indiana Clean Manufacturing Technology and Safe Materials Institute (CMTI)
2655 Yeager Road, Suite 103
West Lafayette, IN 47906

Information:	765	463-4749
FAX:	765	463-3795

RECYCLING INFORMATION

Hoosier Environmental Council:	Tim Maloney	685-8800
Indiana Department of Commerce:	Tom Leas	232-8945
Recycling Specialist (IDEM):		232-8172

SAFE DRINKING WATER ACT (SDMA) INFORMATION

Mailing address:

Indiana Department of Environmental Management
Drinking Water Branch; Office of Water Quality
100 North Senate Avenue; P.O. Box 6015
Indianapolis, Indiana 46206-6015

Physical location:

Western Select Building at 2525 North Shadeland Avenue, Indianapolis, Indiana		
Information:		308-3282
EPA Safe Drinking Water Hotline	800	426-4791
IDEM Environmental Helpline	800	451-6027

SEPTIC AND WELL PERMITS/INSPECTIONS

Also see “safe drinking water act information and wells
Contact your local health department

SPILL PREVENTION/SPCC PLANS

U.S. Environmental Protection Agency (EPA)

Region V

77 West Jackson Blvd

Chicago, Illinois 60604

General Information:

800 424-9346

UNDERGROUND INJECTION CONTROL – SEPTIC TANKS, STORM DRAINS

U.S. EPA, Region V

Charles Elly 312 353-5089

UNDERGROUND STORAGE TANKS

Information (Registration, fees, rules, etc.):

308-3024

Fax Number:

234-0428

Verbal-LUST (8:15 a.m.- 4:45 p.m., M-F):

232-8900

Verbal-Spill Line (after hours) or Toll Free:

233-7745

888 233-7745

WASTE DISPOSAL – SOLID AND SPECIAL WASTE

Office of Land Quality - IGCN

232-3399

Office of Land Quality - Shadeland

308-3016

Assistant Commissioner:

Bruce Palin

233-6591

Permitting:

Vic Windle

232-3242

Jerry Rud

233-7200

Asbestos:

Scott Draschil

308-3008

WASTEWATER AND STORMWATER PERMITTING

See “NPDES-Wastewater and Stormwater Permitting”

WASTEWATER TREATMENT PLANT CONSTRUCTION PERMITTING

Information/Plan Review:

Ken Lee

232-8660

Pretreatment Supervisor:

Steve Roush

232-8706

Certification of Pretreatment Facility Operator:

Mike Frank

232-8791

WATER QUALITY

Office of water quality

12th floor Indiana Government Center North and Shadeland Office

General Information:

232-8670

Fax 12th Floor East

232-8637

Fax 12th Floor West

232-8406

WELLS

Indiana Department of Natural Resources, Division Of Water

Main office -

232-4160

	877	928-3755
Fax number		233-4579

WETLANDS/SECTION 10 OR 404 PERMITS

IDEM office of water Quality:	Andrew Pelloso	232-2481
IDNR Division of Fish and Wildlife:	Glen Salmon	232-4080
IDNR Division of Water:	Mike Neyer	232-4160
Army Corps of Engineers (Louisville District):	502	315-6766
Army Corps of Engineers (Detroit District):	888	694-8313
Army Corps of Engineers (Chicago District):		846-5330

APPENDIX B GLOSSARY

This glossary contains definitions for general terms with which the aggregate industry should become familiar. This glossary is intended as a general reference only.

29 CFR – CFR for OSHA

40 CFR – CFR for EPA

49 CFR – CFR for Department of Transportation

Aboveground Storage Tank – a tank, located aboveground, which is used to store petroleum products or other liquids. Depending on size and contents, such tanks must be registered with the Indiana State Fire Marshal.

ACGIH – American Conference of Government Industrial Hygienists. A non-government professional group which sets standards in the field of industrial hygiene.

Actual Emissions – used for purposes of air compliance determination (actual emissions must always be at or lower than allowable emissions), and for calculation of state or local operating fees.

Air Contaminant – any solid, liquid or gaseous matter, or any combination thereof, that may be emitted into the ambient air in a manner which may cause or contribute to air pollution.

Air Pollution – the presence of solid, liquid or gaseous matter, or any combination thereof, in the ambient air in sufficient quantities and of such characteristics and duration which: (1) injures or threatens to injure human, plant or animal life; or (2) damages or threatens to damage property; or (3) unreasonably interferes with the comfortable enjoyment of life and property.

Allowable Emissions – means the lowest emission rate calculated using all of the following:

1. The maximum capacity of the facility at 8760 hours per year.
2. The most stringent applicable federally enforceable state rule.
3. Limits on the operation specified by a federally enforceable condition.
4. An emission rate specified as a federally enforceable permit condition.
5. Potential emissions.

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6. For non-continuous batch manufacturing operations, when the process, not considering operating hours, results in daily emissions less than those calculated on an hourly basis, daily emission rate shall be used instead of hourly rates.

Annual Emission Statement – required to be submitted by major sources reporting actual emissions of criteria pollutants and HAPs for the past calendar year. Information is used in assessing operating permit fees under the Clean Air Act Title V program. Statements are due either April 15 or July 1 (depending on source locations). (See also STEPS.)

ANSI – American National Standards Institute

Applicable Pretreatment Standard – for any specified pollutant in wastewater discharged to the sanitary sewer, city's prohibitive discharge standards, city's specific numerical limitations on discharge, the State of Indiana discharge standards, or the federal categorical standards (when effective for a particular industry category), whichever standard is most stringent.

AST – Aboveground Storage Tank

Attainment – a geographical area designated by the board as not meeting the ambient air quality standards established for a specific pollutant in 326 IAC 1-3.

BACT – Best Available Control Technology (CAA)

BAT – Best Available Technology (CWA)

BMP – Best Management Practices (CWA)

BOD – the measure of the amount of organic nutrient in water which supports the growth of algae in surface water; one purpose of sewage treatment is to reduce BOD content (BOD = Biochemical Oxygen Demand).

CAAA – Clean Air Act Amendments of 1990

CAA – Clean Air Act

CAS RN – Chemical Abstract Services Registry Number (every chemical has its own number)

CERCLA – the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) passed by Congress in 1980 and reauthorized in 1986. CERCLA is commonly known as "Superfund." CERCLA gives the federal government the power to respond to releases, or threatened releases, of any hazardous substance into the environment as well as to a release of a pollutant or contaminant that may present an imminent and substantial danger to public health or welfare.

CERCLIS – Comprehensive Environmental Response, Compensation and Liability Information System

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CFC – Chlorofluorocarbons

CFR – Code of Federal Regulations; the book of federal regulations; environmental regulations are in Title 40 CFR, worker safety in Title 29 CFR and transportation in Title 49 CFR; found in most public libraries (CFR = Code of Federal Regulations).

Characteristics of Hazardous Waste – EPA has identified four characteristics of a hazardous waste: toxicity of a leachate ignitability, corrosivity, and reactivity. Any solid waste that exhibits one or more of these characteristics may be classified as a hazardous waste under RCRA.

CHMM – Certified Hazardous Materials Manager (professional association)

Clean Air Act (CAA) – unless otherwise indicated, means the federal Clean Air Act, found at 42 U.S.C. 7401 et seq., as amended (including the Clean Air Act Amendments of 1990, P.L. 101-549).

COD – Chemical Oxygen Demand (CWA)

COE – U.S. Army Corps of Engineers

Combustible Liquid – a liquid having a flash point at or above 37.8 degrees Celsius. Combustible liquids shall be subdivided as follows:

- Class II liquids shall include those having flash points at or above 37.8 C and below 60 C (140° F).
- Class IIIA liquids shall include those having flash points at or above 60 C and below 93.4 C (200° F).
- Class IIIB liquids shall include those having flash points at or above 93.4 C.

Cooling Water – the water discharged from any use such as air conditioning, cooling, refrigeration, or industrial equipment cooling, or to which the only pollutant added is heat.

Criteria Air Pollutant – the six air pollutants for which the federal government has set National Ambient Air Quality Standards under the Clean Air Act (including PM₁₀ particulates, sulfur dioxide, carbon monoxide, lead, nitrogen dioxide and ozone); all communities must maintain air quality within these standards.

CWA – Clean Water Act

Designated Facility – a hazardous waste treatment, storage, or disposal facility that has received an EPA or state permit (or has interim status) and has been designated on the manifest by the generator as the facility to which the generator's waste should be delivered.

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Direct Discharge – the discharge of treated or untreated wastewater directly to the waters of the State of Indiana.

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

Disposal – the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including groundwater.

DOT – U.S. Department of Transportation

EHS – Extremely Hazardous Substance

EIS – Emission Inventory Statement

EPA Identification Number – the unique number assigned by EPA to each generator or transporter of hazardous waste, and each treatment, storage or disposal facility.

EPA Region V – the six state region headquarters in Chicago, includes Indiana.

EPA – the U.S. EPA is the federal agency which implements many of the federal environmental laws; headquartered in Washington, D.C., most EPA decisions directly affecting states are made in the ten regional offices (EPA = Environmental Protection Agency). The regional office which covers Indiana is in Chicago.

EPA – U.S. Environmental Protection Agency

EPCRA – Emergency Planning and Community Right-to-Know Act (SARA Title III)

Exposure or Exposed – means that an employee is subjected in the course of employment to a chemical that is a physical or health hazard, and may be exposed by one of that chemical's hazardous routes of entry.

Hazardous Substance – all listed hazardous substances (see Table 302.4 at 40 CFR 304.2), and all unlisted hazardous substances which are solid wastes that exhibit one or more of the characteristics of a RCRA hazardous waste (as defined at 40 CFR 261.2 through 261.24) which are designated for release notification to the National Response Center (NRC) under CERCLA (see RQ).

Hazardous Waste – any solid waste that is considered hazardous according to federal regulations and must be disposed of according to strict guidelines.

HMTA – Hazardous Materials Transportation Act

HSWA – Hazardous and Solid Waste Act

IARC – International Agency for Research on Cancer

IDEM – Indiana Department of Environmental Management

IDNR – Indiana Department of Natural Resources

Indirect Discharge – the discharge or the introduction of non-domestic pollutants from any source regulated under Section 307(b) or (c) of the Clean Water Act, into the POTW (including holding tank waste discharged into the system).

INDOT – Indiana Department of Transportation

Industrial User – any user of the POTW who discharges, causes, or permits the discharge on non-domestic wastewater into the POTW.

Industrial Wastewater – a combination of liquid and water-carried waste discharged from any industrial establishment and resulting from any trade or process carried on in that establishment, including the wastewater from pretreatment facilities and polluted cooling water.

LAER – Lowest Achievable Emission Rate

LDR – Land Disposal Restriction (HSWA)

LEPC – the public/private hazardous materials emergency planning committee required by federal law (SARA Title III) in every locality (LEPC = Local Emergency Planning Committee).

Listed Hazardous Wastes – hazardous wastes that have been placed on one of the three lists developed by EPA: non-specific source wastes; specific source wastes; commercial chemical products. These lists were developed by examining different types of waste and chemical products to see if they exhibit one of the four characteristics, meet the statutory definition of hazardous waste, are acutely toxic or acutely hazardous, or are otherwise toxic.

LQG – Large Quantity Generator (HSWA)

LUST – Leaking Underground Storage Tank (HSWA)

MACT – Maximum Achievable Control Technology standards are established for new and existing sources of HAPs. MACT standards are either: promulgated by EPA for certain industrial source categories under 40 CFR Part 63; or will be determined as part of the construction permit review process under Section 112(g) of the Clean Air Act (once EPA finalizes 112(g) regulations).

Major Stationary Source – sources classified as “major sources” are subject to more extensive regulatory requirements such as the Title V permit program, or the Prevention of Significant

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Deterioration (PSD) permit requirements. A source's potential to emit is used to determine whether a source is a major source. The "major source" thresholds vary from regulation to regulation. Some examples of major source thresholds include: 250 tons/year under the PSD rules (except for certain source categories); 100 tons/year for the emission offset rule (25 tons/year for sources in severe ozone nonattainment areas); 100 tons/year of any criteria pollutant or 25 tons/year of all HAPs or 10 tons/year of a single HAP for the Title V permit program.

MCL – the federal drinking water standard for public water supplies (MCL = Maximum Contaminant Level).

Modification – for purposes of 326 IAC 2-1, the following apply:

- (1) "Modification" does not include the repair or replacement of an air pollution emitting facility or air pollution control equipment or components thereof if the repair or replacement is made:
 - (a) in order to return the facility, process, or control equipment to normal operation after an upset, malfunction, mechanical failure; or
 - (b) in order to prevent impending and imminent failure of the facility, process, or control equipment.

MSDS – the information sheet required by federal OSHA on every chemical product used in the workplace; required to be available to workers and to the community (MSDS = Material Safety Data Sheet).

MSHA – Mine Safety and Health Administration. The federal agency which implements the Mine Safety and Health Act (30 CFR Part 46).

NAAQS – National Ambient Air Quality Standards (CAA)

National Emission Standards for Hazardous Air Pollutants (NESHAP) – NESHAP regulations are developed on a source category or emission source basis, and are designed to regulate sources of HAPs. Standards promulgated under 40 CFR Part 61 are based on the degree of control necessary to meet an acceptable risk level, and to date have been adopted for a limited number of HAPs. Standards which have been or will be promulgated under 40 CFR Part 63 are based on the technical feasibility of controls for specific industrial categories.

ND – Not Detected

NEPA – National Environmental Policy Act of 1969

NESHAP – National Emissions Standards for Hazardous Air Pollutants (CAA)

New Source Performance Standards (NSPS) – NSPS are promulgated by the U.S. EPA and apply to specific types of facilities or specific types of emission sources. The NSPS apply to

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affected sources that are constructed after the date NSPS was initially proposed and established levels of control based upon current industrial practices.

New Source – any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the publication of proposed pretreatment standards under section 307(c) of the Clean Water Act which will be applicable to such source if such standards are thereafter promulgated in accordance with that section.

NIOSH – National Institute for Occupational Safety and Health

Non-Point Source – water pollution from broad areas rather than from discrete sources, such as from a pipe, ditch or conduit.

Nonattainment – in air pollution control, an area whose air quality is not meeting the federal standard for a particular criteria pollutant; economic development for major sources emitting that pollutant is more difficult in such areas.

NOV – Notice of Violation

NO_x – oxides of nitrogen including nitrogen dioxide (NO₂) and nitrogen oxide (NO). NO_x is emitted by combustion sources; is a critical component in the gas pollutant mixture which in sunlight can create urban smog.

NPDES – National Pollutant Discharge Elimination System (CWA permit for discharge to surface water).

NPDES Permit – the detailed permit required for discharge of wastewater from a pipe or other point source to surface water.

NSPS – New Source Performance Standards (CAA)

NSR – New Source Review (CAA)

NTP – National Toxicology Program

OAM – Office of Air Management (IDEM)

OPPTA – Office of Pollution Prevention and Technical Assistance (IDEM)

Opt Out – an air pollution emission source subject to the Title V permitting requirements may “opt out” of the program by applying for a Federally Enforceable State Operating Permit (FESOP).

OSHA – the federal agency which regulates workplace safety; many states have been delegated authority to enforce the federal regulations (OSHA = Occupational Safety and Health Administration).

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OSHWM – Office of Solid and Hazardous Waste Management (IDEM)

OWM – Office of Water Management (IDEM)

PEL – Permissible Exposure Limits (OSHA)

PM – Particulate Matter (CAA)

Point Source – any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. Agriculture irrigation or agriculture stormwater runoff are exempt from the federal definition of point source. May also be referred to in air pollution regulations.

Potential to Emit – this is the maximum air emissions potential for a piece of equipment while operating under its maximum physical and operational design after imposition of federally enforceable conditions (such as those controls or conditions which are required by the Indiana State Implementation Plan (SIP) rules or operating permit restrictions approved as federally enforceable).

POTW – the name used for sewage treatment plants owned by a municipality or other unit of government; this is to distinguish from an industrial wastewater treatment facility owned by a private party (POTW = Publicly-Owned Treatment Works).

PPB – Parts Per Billion

PPM – Parts Per Million

Pretreatment – in wastewater control, the minimum federal conditions for the discharge of industrial wastewater into a public sanitary sewer system.

Process Wastewater – is any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product.

PRP – Potentially Responsible Parties (CERCLA)

PSD – Prevention of Significant Deterioration (CAA)

RACT – Reasonably Available Control Technology (CAA)

RCRA – the federal law specifying proper management of hazardous waste from time it is generated until its final disposal (“cradle-to-grave”); Subtitle C regulates hazardous waste and

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Subtitle D regulated solid waste landfill construction (RCRA = Resource Conservation and Recovery Act).

Regulated Air Pollutant – is any pollutant for which an emission limitation or requirement has been established under a State law or local regulation.

Regulation – generally passed by a board or other rulemaking body to implement laws or policies.

RQ – for any hazardous substance, the reportable quantity for which the release of requires notification to the National Response Center (NRC), the SERC, and the LEPC. The hazardous substance list is established in Table 302.4 of 40 CFR Part 302. For any SARA Title III extremely hazardous substance, the reportable quantity is one pound and the release of which requires notification to the SERC and to the LEPC (RQ = Reportable Quantity).

Sanitary Landfill – the landfill which accepts municipal solid waste, compacts it on-site, and covers it daily to prevent disease vectors from escaping; federal guidelines require all sanitary landfills to have impermeable bottoms to prevent waters from carrying contaminants into the groundwater.

Sanitary Sewer – a sewer which carries sewage to the municipal sewage treatment plant.

SARA – Superfund Amendments and Reauthorization Act of 1986 (to CERCLA)

SARA Title III – the 1986 community right-to-know act which requires those who store hazardous chemicals to report regularly to local officials; also requires manufacturers to report annually on routine releases of any of a certain list of chemicals (SARA Title III = Superfund Amendments and Reauthorization Act, Title III).

SDWA – Safe Drinking Water Act

SERC – the public/private hazardous materials emergency planning commission required by federal law (SARA Title III) in every state (SERC = State Emergency Response Commission).

SIC – Standard Industrial Classification (Code Numbers)

Significant Industrial User – any industrial discharger to a sewage treatment plant which is: (1) regulated by a national categorical pretreatment standard; (2) a non-categorical facility with a process wastewater discharge to a POTW greater than a specified number of gallons per day; (3) an industrial user with a reasonable potential to adversely affect the POTW, its treatment processes or operations, or its sludge use or disposal; (4) any other industrial user deemed to be significant by the operator of a sewer system.

SIP – the State Implementation Plan is the compilation of state and local air laws, rules and permit conditions which, after EPA approval, are the federally-enforceable conditions to assure that each community is in compliance with federal ambient air standards.

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Solid Waste – all solid, liquid, semisolid or contained gaseous material which is discarded; also any garbage, refuse, or sludge.

Source – this term has a different definition for air, water and waste programs. See rules or contact the appropriate IDEM office.

SPCC – Spill Prevention Control and Countermeasure (CWA, oil storage spill prevention).

Special Waste Landfill – a restricted waste site that has the necessary permits from IDEM to accept special waste for disposal.

SQG – Small Quantity Generator (HSWA)

SSOA – Source Specific Operating Agreement (General air permit for certain industries, including the aggregates industry).

SS – Suspended Solids

STEPS – a software program which facilities can use to help calculate their annual air emissions in order to prepare IDEM's required "Annual Emission Statement"; the applicability of the reporting requirements is triggered by a sources "potential emissions"; and reported emissions are the "actual emissions" (STEPS = State Environmental Program Systems).

Storm Drain or Storm Sewer – a sewer which carries storm and surface waters and drainage.

Stormwater – any flow occurring during or following any form of natural precipitation.

Superfund – (see CERCLA)

Suspended Solids – solids that either float on the surface of, or are in suspension in, water, sewage or other liquids, and which are removable by laboratory filtering (Suspended Solids = SS).

TCLP – Toxicity Characteristic Leaching Procedure (HSWA, to determine RCRA hazardous waste).

Title III – Superfund Amendments and Reauthorization Act (community right-to-know, hazardous materials emergencies)

TLV – Threshold Limit Value (OSHA exposure level)

TPQ – is the amount on-site of an extremely hazardous substance which requires a facility to notify the SERC and the LEPC for emergency response planning purposes (see 40 CFR Part 355) (TPQ = Threshold Planning Quantity).

TPY – Tons Per Year

TRI – under federal community right-to-know law, all manufacturers who use more than 10,000 pounds of any of a specific list of chemicals in one year must report to the state and federal government each July how much was released to the sewer, to solid waste, to surface water, to air (TRI = Toxic Release Inventory).

TSCA – Toxic Substances Control Act

TSD Facility – a facility which treats, stores or disposes of RCRA hazardous waste; these facilities require a permit under RCRA (TSD = Treatment, Storage, Disposal).

TSDF – Treatment, Storage and Disposal Facility (RCRA)

TSP – Total Suspended Particulate (CAA)

TSS – Total Suspended Solids (CWA)

TTO – Total Toxic Organics (CWA)

TWA – Time Weighted Average (OSHA)

Underground Storage Tank or UST – any one or combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is 10 percent or more beneath the surface of the ground. By federal law many such tanks must be registered with the state. This term does not include any:

- (a) Farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purpose.
- (b) Tank used for storing heating oil for consumptive use on the premises where stored.
- (c) Septic tank.
- (d) Pipeline facility (including gathering lines) regulated under:
 - (1) The Natural Gas Pipeline Safety Act of 1968 (49 USC App. 1671, et seq.), or
 - (2) The Hazardous Liquid Pipeline Safety Act of 1979 (49 USC App. 2001, et seq.), or
 - (3) Which is an intrastate pipeline facility regulated under state laws comparable to the provisions of the law referred to in paragraph (d)(1) or (d)(2) of this definition.

- (e) Surface impoundment, pit, pond, or lagoon.
- (f) Stormwater or wastewater collection system.
- (g) Flow through process tank.
- (h) Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations.
- (i) Storage tank situated in an underground area (such as a basement, cellar, mine, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

The term “underground storage tank” or “UST” does not include any pipes connected to any tank which is described in paragraphs (a) through (f) of this definition.

USC – United States Code (Federal Statutes)

USGS – U.S. Geological Survey

UST – Underground Storage Tanks (HSWA)

VOC – hydrocarbon air pollutants which combine with NO_x and sunlight to create urban smog; examples include gasoline, some industrial solvents, unburned hydrocarbon in a car exhaust, vapors from vegetation (VOC = Volatile Organic Compound).

Wastewater – a combination of the liquid and water-carried pollutants from residences, business buildings, institutions and industrial establishments, together with such ground, surface and stormwaters as may be present.

Wetlands – land which by its location and soil composition can support an ecosystem saturated with water; a permit is required to fill or otherwise develop a wetland; the federal program is administered by the U.S. Army Corps of Engineers with the U.S. EPA’s oversight for lands greater than one acre (states may have smaller minimum); a wetland is defined by soil, plant and hydrology and vary widely in quality of its wetland properties; if permission is granted to fill or otherwise destroy a wetland, replacement of the wetlands by one of equal or higher quality is expected (this is called “mitigation”).

APPENDIX C SUMMARY OF PERMITS

Rule Citation / Issuing Agency	Permit Description	Activities Covered / When is a Permit Needed?	Deadline / Renewal Date	Fee
MINING-RELATED PERMITS				
Local Zoning Ordinance / Local Zoning Board	Application to local or county zoning board for mineral extraction.	Extraction of Minerals	Before beginning operations.	Consult local ordinance, if one exists
WATER-RELATED PERMITS				
33 CFR Part 320 through 330 / U.S. Army Corps of Engineers (Corps)	Section 10 of the Rivers and Harbors Act Permit* - May be covered under a Letter of Permission or an Individual Permit.	All work performed on, over, or under "navigable waters of the United States".	Before beginning operations.	\$100 upon granting of the permit
33 CFR Parts 320 through 330 / Corps	Section 404 of the Clean Water Act Permit - May be covered under an Individual Permit, a Nationwide Permit, or a Regional General Permit.	Placement of fill materials in "waters of the United States", including non-isolated wetlands.	Before beginning operations.	\$100 upon granting of the permit
327 IAC 2-1-1.5 327 IAC 2-1-2 327 IAC 2-1-3 IDEM Office of Water Quality	Section 401 of the Clean Water Act Water Quality Certification.	Required when a Section 404 Permit is issued by the Corps.	401 Certification should be applied for at the same time the Corps 404 permit is applied for, and both must be granted before beginning operations.	No fee
327 IAC 17 Idem Office of Water Quality	State Regulated Wetland Activity Permit	Placement of fill materials in isolated wetlands not regulated by the Corps 404 Permitting authority.	Before beginning operations.	No fee
310 IAC 6-1-1 / Indiana Department of Natural Resources, Division of Water	Permit to construct in a floodway.	Development on land located within the floodplain of the regulatory flood (see Chapter 5).	Before development begins.	\$50
327 IAC 15-12 / IDEM Office of Water Quality	General permit to discharge to surface water for facilities engaged in sand, gravel, dimension stone, or crushed stone operations.	Discharge from certain operations that utilize sedimentation basin treatment for certain activities (see Chapter 6). However, in general, any discharge that is able to meet the limits specified in the general permit will likely be allowed to be covered under the general permit.	For new facilities, before discharge begins. For existing facilities, reapply 90 days before the expiration of permit or before expiration of coverage under the general rule.	\$100
327 IAC 5	Individual permit to discharge to surface water	Facilities not able to be covered under general permit (327 IAC 15-12) and who must obtain an individual permit.	For new facilities, 180 days before discharge begins. For existing facilities, 180 days before permit expires.	\$50 initial fee; annual base fee of \$1,000 for major permit, \$400 for minor permits. Annual discharge flow fees also apply.
327 IAC 15-5 / IDEM Office of Water Quality	Stormwater Discharge permit for construction activity – also requires submittal of a soil erosion control plan (SECP).	Construction activity that disturbs more than 5 acres. Stripping of overburden as a part of regular plant (production) operations is not considered construction.	Upon submittal of complete SECP, the NOI letter, and the fee, construction activity may begin. You must notify IDEM in writing upon completion of the project.	\$100

Rule Citation / Issuing Agency	Permit Description	Activities Covered / When is a Permit Needed?	Deadline / Renewal Date	Fee
WATER-RELATED PERMITS (Continued)				
327 IAC 15-6 / IDEM Office of Water Quality	General Stormwater Discharge Permit for industrial activity. NOTE: An individual permit to discharge stormwater may be obtained, but it is simpler for you and the agency to use the general permit process.	Stormwater discharges from mineral aggregate sites. If stormwater from processes (stockpiles, crushing operations, etc.) is discharged through a pipe or ditch, it must have a permit.	Once Notice of Intent is submitted, discharge may be begin.	\$100
IC 13-2-6.1 and 6.2 / Indiana Department of Natural Resources	Water withdrawal facility registration.	Combined capacity of groundwater withdrawal in excess of 100,000 gallons in one day.	Significant (>100,000 gallons) water withdrawal facilities must be registered within three months after facility is completed. Annual reports must be submitted by March 31 of east year.	No fee
310 IAC 16-10-2 / Indiana Department of Natural Resources	Temporary or permanent abandonment of well. NOTIFICATION ONLY – NO PERMIT REQUIRED.	Permanent abandonment of a well.	Notify DNR within 30 days of permanent abandonment.	No fee
Safe Drinking Water Act / IDEM Office of Water Quality, Safe Drinking Water Branch	No permit or registration – testing required.	Operation of a well that serves at least 25 of the same persons over six months per year.	Test well water for specific pollutants on a set schedules (see Chapter 7).	No fee, however, the testing can be quite expensive. Recommend looking into waivers to reduce some of testing requirements.
40 CFR 144 / U.S. EPA	Registration of Class V injection wells	Septic systems and stormwater drainage wells (see Chapter 7 for applicability thresholds).	For existing systems, deadline has passed. Submit the registration now, and it will be considered a minor violation. For new systems, register before operation.	No fee
Rule Citation / Issuing Agency	Permit Description	Activities Covered / When is a Permit Needed?	Deadline / Renewal Date	Fee
AIR-RELATED PERMITS				
326 IAC 2-1.1 and 326 IAC 2-5.1/ IDEM Office of Air Quality	Construction permit for air contaminant source.	Required for sources with a potential to emit of any regulated pollutant above exemption levels.	Before construction begins if a permit is required	\$3500 if a permit is required
326 IAC 2-5.5/ IDEM Office of Air Quality	Registration	see Chapter 8	Prior to operation. No renewal requirements apply.	\$100 filling fee and \$500 permit fee
326 IAC 2-5.5-6/ IDEM Office of Air Quality	Registration – Source Modification	Any person proposing to construct a new emission unit, modify an existing emission unit, modify the source affecting production, or any revision to the registration	Unless allowed by rule prior to construction.	\$100 filling fee and \$500 permit fee
326 IAC 2-6.1/ IDEM Office of Air Quality	Minor Source Operating Permit	see Chapter 8	Prior to construction and operation. Renewals must be submitted 90 days before permit expires.	\$3500 for a new source. Misc. fees could apply

Rule Citation / Issuing Agency	Permit Description	Activities Covered / When is a Permit Needed?	Deadline / Renewal Date	Fee
AIR-RELATED PERMITS (Continued)				
326 IAC 2-6.1-6/ IDEM Office of Air Quality	Minor Source Operating Permit - Permit Revisions	Any person proposing to construct a new emission unit, modify an existing emission unit, modify the source affecting production, or any revision to the MSOP.	The deadline is prior to construction unless allowed by rule.	\$100 filling fee and \$500 - \$3500 permit fee if a revision is required. Misc. fees could apply.
326 IAC 2-7 / IDEM Office of Air Quality	Title V Operating Permit	see Chapter 8	Renewals must be submitted 9 months before permit expires.	The fee is invoiced annually.
326 IAC 2-7-10.5 / IDEM Office of Air Quality	Part 70 permits; source modification	Any person proposing to construct new emissions units, modify existing emissions units, or modify the source affecting production.	The deadline is prior to construction unless allowed by rule.	\$500 - \$3500 permit fee misc. fees could apply.
326 IAC 2-7-11 and 326 IAC 2-7-12 / IDEM Office of Air Quality	Administrative permit amendment and Permit modification	Any revision to a Part 70 permit this is often automatically triggered when a source modification occurs.	The deadline is prior to operation unless allowed by rule.	Not applicable
326 IAC 2-8 / IDEM Office of Air Quality	Federally Enforceable State Operating Permit (FESOP)	see Chapter 8	Renewals must be submitted 9 months before permit expires.	The fee is invoiced annually.
326 IAC 2-8-10 and 326 IAC 2-8-11.1 / IDEM Office of Air Quality	Federally Enforceable State Operating Permit (FESOP) – Administrative permit amendments and Permit Revisions	Any person proposing to construct a new emission unit, modify an existing emission unit, modify the source affecting production, or any revision to the FESOP.	The deadline is prior to construction and operation unless allowed by rule.	AA: Not applicable Revision: \$500 - \$3500 permit fee. Misc. fees could apply.
326 IAC 2-9 / IDEM Office of Air Quality	Source Specific Operating Agreement (SSOA) for sand and gravel, crushed stone, and concrete batch plants.	Sources who meet the applicability requirements for an SSOA.	The deadline is prior to construction and operation unless allowed by rule. No renewal requirements apply	\$500 unless otherwise noted in the rule.
326 IAC 2-10 / IDEM Office of Air Quality	Permit by Rule	see Chapter 8	Prior to operation. No renewal requirements apply.	\$100
326 IAC 2-14 / IDEM Office of Air Quality	Portable Sources	Available to Registration or MSOP level sources and as an alternate operating scenario associated with a Title V or FESOP source.	Prior to relocation unless allowed by rule.	Not Applicable
WASTE-RELATED PERMITS				
40 CFR 262 / U.S. EPA	EPA Identification Number	Anyone who generates hazardous waste in quantities exceeding 220 pounds per month.	Before disposal of hazardous waste.	No fee
329 IAC 2-21/ IDEM Office of Solid and Hazardous Waste	Special Waste Certification	If any special waste is generated in quantities exceeding 220 pounds per month, it must be certified by IDEM and be disposed of in a special waste landfill.	Certification must be received prior to disposal. Certifications are usually good for five years.	\$250 per waste stream
329 IAC 2-23 / IDEM	Certification to Operate a Waste Tire Storage or Processing Facility			
329 IAC 2-24 / IDEM	Waste Tire Transporter Registration	Transporter must use a manifest or form provided by the IDEM to accompany shipments of used ("waste") tires.		

*No permit is required for activity that is located above the ordinary high water mark of a waterway, defined as the upper limit of a flood plain. The IDNR Division of Water has maps that delineate the ordinary high water mark of a waterway.