

VI. SUMMARY OF APPLICABLE FEDERAL STATUTES AND REGULATIONS

This section discusses the federal regulations that may apply to this sector. The purpose of this section is to highlight and briefly describe the applicable federal requirements, and to provide citations for more detailed information. The three following sections are included:

- Section VI.A contains a general overview of major statutes
- Section VI.B contains a list of regulations specific to this industry
- Section VI.C contains a list of pending and proposed regulatory requirements.

The descriptions within Section VI are intended solely for general information. Depending upon the nature or scope of the activities at a particular facility, these summaries may or may not necessarily describe all applicable environmental requirements. Moreover, they do not constitute formal interpretations or clarifications of the statutes and regulations. For further information, readers should consult the Code of Federal Regulations and other state or local regulatory agencies. EPA Hotline contacts are also provided for each major statute.

VI.A. General Description of Major Statutes

Clean Water Act

The primary objective of the Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA), is to restore and maintain the chemical, physical, and biological integrity of the nation's surface waters. Pollutants regulated under the CWA are classified as either “toxic” pollutants; “conventional” pollutants, such as biochemical oxygen demand (BOD), total suspended solids (TSS), fecal coliform, oil and grease, and pH; or “non-conventional” pollutants, including any pollutant not identified as either conventional or priority.

The CWA regulates both direct and “indirect” dischargers (those who discharge to publicly owned treatment works). The National Pollutant Discharge Elimination System (NPDES) permitting program (CWA section 402) controls direct discharges into navigable waters. Direct discharges or “point source” discharges are from sources such as pipes and sewers. NPDES permits, issued by either EPA or an authorized state (EPA has authorized 43 states and one territory to administer the NPDES program), contain industry-specific, technology-based and water quality-based limits and establish pollutant monitoring and reporting requirements. A facility that proposes to discharge into the nation's waters must obtain a permit prior to initiating a discharge. A permit applicant must provide quantitative analytical data identifying the types of pollutants present in the facility's

effluent. The permit will then set forth the conditions and effluent limitations under which a facility may make a discharge.

Water quality-based discharge limits are based on federal or state water quality criteria or standards, that were designed to protect designated uses of surface waters, such as supporting aquatic life or recreation. These standards, unlike the technology-based standards, generally do not take into account technological feasibility or costs. Water quality criteria and standards vary from state to state, and site to site, depending on the use classification of the receiving body of water. Most states follow EPA guidelines which propose aquatic life and human health criteria for many of the 126 priority pollutants.

Storm Water Discharges

In 1987 the CWA was amended to require EPA to establish a program to address storm water discharges. In response, EPA promulgated NPDES permitting regulations for storm water discharges. These regulations require that facilities with the following types of storm water discharges, among others, apply for an NPDES permit: (1) a discharge associated with industrial activity; (2) a discharge from a large or medium municipal storm sewer system; or (3) a discharge which EPA or the state determines to contribute to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.

The term “storm water discharge associated with industrial activity” means a storm water discharge from one of 11 categories of industrial activity defined at 40 CFR Part 122.26. Six of the categories are defined by SIC codes while the other five are identified through narrative descriptions of the regulated industrial activity. If the primary SIC code of the facility is one of those identified in the regulations, the facility is subject to the storm water permit application requirements. If any activity at a facility is covered by one of the five narrative categories, storm water discharges from those areas where the activities occur are subject to storm water discharge permit application requirements.

Those facilities/activities that are subject to storm water discharge permit application requirements are identified below. To determine whether a particular facility falls within one of these categories, the regulation should be consulted.

Category i: Facilities subject to storm water effluent guidelines, new source performance standards, or toxic pollutant effluent standards.

Category ii: Facilities classified as SIC 24-lumber and wood products (except wood kitchen cabinets); SIC 26-paper and allied products (except paperboard containers and products); SIC 28-chemicals and allied products

(except drugs and paints); SIC 29-petroleum refining; SIC 311-leather tanning and finishing; SIC 32 (except 323)-stone, clay, glass, and concrete; SIC 33-primary metals; SIC 3441-fabricated structural metal; and SIC 373-ship and boat building and repairing.

Category iii: Facilities classified as SIC 10-metal mining; SIC 12-coal mining; SIC 13-oil and gas extraction; and SIC 14-nonmetallic mineral mining.

Category iv: Hazardous waste treatment, storage, or disposal facilities.

Category v: Landfills, land application sites, and open dumps that receive or have received industrial wastes.

Category vi: Facilities classified as SIC 5015-used motor vehicle parts; and SIC 5093-automotive scrap and waste material recycling facilities.

Category vii: Steam electric power generating facilities.

Category viii: Facilities classified as SIC 40-railroad transportation; SIC 41-local passenger transportation; SIC 42-trucking and warehousing (except public warehousing and storage); SIC 43-U.S. Postal Service; SIC 44-water transportation; SIC 45-transportation by air; and SIC 5171-petroleum bulk storage stations and terminals.

Category ix: Sewage treatment works.

Category x: Construction activities except operations that result in the disturbance of less than five acres of total land area.

Category xi: Facilities classified as SIC 20-food and kindred products; SIC 21-tobacco products; SIC 22-textile mill products; SIC 23-apparel related products; SIC 2434-wood kitchen cabinets manufacturing; SIC 25-furniture and fixtures; SIC 265-paperboard containers and boxes; SIC 267-converted paper and paperboard products; SIC 27-printing, publishing, and allied industries; SIC 283-drugs; SIC 285-paints, varnishes, lacquer, enamels, and allied products; SIC 30-rubber and plastics; SIC 31-leather and leather products (except leather and tanning and finishing); SIC 323-glass products; SIC 34-fabricated metal products (except fabricated structural metal); SIC 35-industrial and commercial machinery and computer equipment; SIC 36-electronic and other electrical equipment and components; SIC 37-transportation equipment (except ship and boat building and repairing); SIC 38-measuring, analyzing, and controlling instruments; SIC 39-miscellaneous manufacturing industries; and SIC 4221-4225-public warehousing and storage.

Phase II storm water requirements were established in 1999. Permits are now required for certain small municipal separate storm sewer systems (MS4s) and for construction activity disturbing between one and five acres of land (i.e., small construction activities). The Phase II rule also revised the “no exposure” exclusion and the temporary exemption for certain industrial facilities that had been established under Phase I regulations.

Pretreatment Program

Another type of discharge that is regulated by the CWA is one that goes to a publicly owned treatment works (POTW). The national pretreatment program (CWA section 307(b)) controls the indirect discharge of pollutants to POTWs by “industrial users.” Facilities regulated under section 307(b) must meet certain pretreatment standards. The goal of the pretreatment program is to protect municipal wastewater treatment plants from damage that may occur when hazardous, toxic, or other wastes are discharged into a sewer system and to protect the quality of sludge generated by these plants.

EPA has developed technology-based standards for industrial users of POTWs. Different standards apply to existing and new sources within each category. “Categorical” pretreatment standards applicable to an industry on a nationwide basis are developed by EPA. In addition, another kind of pretreatment standard, “local limits,” are developed by the POTW in order to assist the POTW in achieving the effluent limitations in its NPDES permit.

Regardless of whether a state is authorized to implement either the NPDES or the pretreatment program, if it develops its own program, it may enforce requirements more stringent than federal standards.

Wetlands

Wetlands, commonly called swamps, marshes, fens, bogs, vernal pools, playas, and prairie potholes, are a subset of “waters of the United States,” as defined in Section 404 of the CWA. The placement of dredge and fill material into wetlands and other water bodies (i.e., waters of the United States) is regulated by the U.S. Army Corps of Engineers (Corps) under 33 CFR Part 328. The Corps regulates wetlands by administering the CWA Section 404 permit program for activities that impact wetlands. EPA’s authority under Section 404 includes veto power of Corps permits, authority to interpret statutory exemptions and jurisdiction, enforcement actions, and delegating the Section 404 program to the states.

EPA’s Office of Water, at 202-566-1730, will direct callers with questions about the CWA to the appropriate EPA office. EPA also maintains a bibliographic database of Office of Water publications which can be accessed through the Ground Water and Drinking Water Resource Center, at 800-426-4791.

Oil Pollution Prevention Regulation

Section 311(b) of the CWA prohibits the discharge of oil, in such quantities as may be harmful, into the navigable waters of the United States and adjoining shorelines. The EPA Discharge of Oil regulation, 40 CFR Part 110, provides information regarding these discharges. The Oil Pollution Prevention regulation, 40 CFR Part 112, under the authority of Section 311(j) of the CWA, requires regulated facilities to prepare and implement Spill Prevention Control and Countermeasure (SPCC) plans. The intent of a SPCC plan is to prevent the discharge of oil from onshore and offshore non-transportation-related facilities. In 1990 Congress passed the Oil Pollution Act which amended Section 311(j) of the CWA to require facilities that because of their location could reasonably be expected to cause “substantial harm” to the environment by a discharge of oil to develop and implement Facility Response Plans (FRP). The intent of a FRP is to provide for planned responses to discharges of oil.

A facility is SPCC-regulated if the facility, due to its location, could reasonably be expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines, and the facility meets one of the following criteria regarding oil storage: (1) the capacity of any aboveground storage tank exceeds 660 gallons, or (2) the total aboveground storage capacity exceeds 1,320 gallons, or (3) the underground storage capacity exceeds 42,000 gallons. 40 CFR Part 112.7 contains the format and content requirements for a SPCC plan. In New Jersey, SPCC plans can be combined with discharge prevention, containment and countermeasures (DPCC) plans, required by the state, provided there is an appropriate cross-reference index to the requirements of both regulations at the front of the plan.

According to the FRP regulation, a facility can cause “substantial harm” if it meets one of the following criteria: (1) the facility has a total oil storage capacity greater than or equal to 42,000 gallons and transfers oil over water to or from vessels; or (2) the facility has a total oil storage capacity greater than or equal to one million gallons and meets any one of the following conditions: (i) does not have adequate secondary containment, (ii) a discharge could cause “injury” to fish and wildlife and sensitive environments, (iii) shut down a public drinking water intake, or (iv) has had a reportable oil spill greater than or equal to 10,000 gallons in the past five years. Appendix F of 40 CFR Part 112 contains the format and content requirements for a FRP. FRPs that meet EPA’s requirements can be combined with U.S. Coast Guard FRPs or other contingency plans, provided there is an appropriate cross-reference index to the requirements of all applicable regulations at the front of the plan.

For additional information regarding SPCC plans, contact EPA’s RCRA, Superfund, and EPCRA Call Center, at 800-424-9346. Additional documents and resources can be obtained from the hotline’s homepage at

www.epa.gov/epaoswer/hotline. The hotline operates weekdays from 9:00 a.m. to 6:00 p.m., EST, excluding federal holidays.

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) mandates that EPA establish regulations to protect human health from contaminants in drinking water. The law authorizes EPA to develop national drinking water standards and to create a joint federal-state system to ensure compliance with these standards. The SDWA also directs EPA to protect underground sources of drinking water through the control of underground injection of fluid wastes.

EPA has developed primary and secondary drinking water standards under its SDWA authority. EPA and authorized states enforce the primary drinking water standards, which are contaminant-specific concentration limits that apply to certain public drinking water supplies. Primary drinking water standards consist of maximum contaminant level goals (MCLGs), which are non-enforceable health-based goals, and maximum contaminant levels (MCLs), which are enforceable limits set generally as close to MCLGs as possible, considering cost and feasibility of attainment.

Part C of the SDWA mandates EPA to protect underground sources of drinking water from inadequate injection practices. EPA has published regulations codified in 40 CFR Parts 144 to 148 to comply with this mandate. The Underground Injection Control (UIC) regulations break down injection wells into five different types, depending on the fluid injected and the formation that receives it. The regulations also include construction, monitoring, testing, and operating requirements for injection well operators. All injection wells have to be authorized by permit or by rule depending on their potential to threaten Underground Sources of Drinking Water (USDW). RCRA also regulates hazardous waste injection wells and a UIC permit is considered to meet the requirements of a RCRA permit. EPA has authorized delegation of the UIC for all wells in 35 states, implements the program in 10 states and all Indian lands, and shares responsibility with five states.

The SDWA also provides for a federally-implemented Sole Source Aquifer program, which prohibits federal funds from being expended on projects that may contaminate the sole or principal source of drinking water for a given area, and for a state-implemented Wellhead Protection program, designed to protect drinking water wells and drinking water recharge areas.

The SDWA Amendments of 1996 require states to develop and implement source water assessment programs (SWAPs) to analyze existing and potential threats to the quality of the public drinking water throughout the state. Every state is required to submit a program to EPA and to complete all assessments within 3 ½ years of EPA approval of the program. SWAPs include: (1)

delineating the source water protection area, (2) conducting a contaminant source inventory, (3) determining the susceptibility of the public water supply to contamination from the inventories sources, and (4) releasing the results of the assessments to the public.

EPA's Safe Drinking Water Hotline, at 800-426-4791, answers questions and distributes guidance pertaining to SDWA standards. The Hotline operates from 9:00 a.m. through 5:30 p.m., EST, excluding federal holidays. Visit the website at www.epa.gov/ogwdw for additional material.

Resource Conservation and Recovery Act

The Solid Waste Disposal Act (SWDA), as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, addresses solid and hazardous waste management activities. The Act is commonly referred to as RCRA. The Hazardous and Solid Waste Amendments (HSWA) of 1984 strengthened RCRA's waste management provisions and added Subtitle I, which governs underground storage tanks (USTs).

Regulations promulgated pursuant to Subtitle C of RCRA (40 CFR Parts 260-299) establish a "cradle-to-grave" system governing hazardous waste from the point of generation to disposal. RCRA hazardous wastes include the specific materials listed in the regulations (discarded commercial chemical products, designated with the code "P" or "U"; hazardous wastes from specific industries/sources, designated with the code "K"; or hazardous wastes from non-specific sources, designated with the code "F") or materials which exhibit a hazardous waste characteristic (ignitability, corrosivity, reactivity, or toxicity and designated with the code "D").

Entities that generate hazardous waste are subject to waste accumulation, manifesting, and recordkeeping standards. A hazardous waste facility may accumulate hazardous waste for up to 90 days (or 180 days depending on the amount generated per month) without a permit or interim status. Generators may also treat hazardous waste in accumulation tanks or containers (in accordance with the requirements of 40 CFR Part 262.34) without a permit or interim status. Facilities that treat, store, or dispose of hazardous waste are generally required to obtain a RCRA permit.

Subtitle C permits are required for treatment, storage, or disposal facilities. These permits contain general facility standards such as contingency plans, emergency procedures, recordkeeping and reporting requirements, financial assurance mechanisms, and unit-specific standards. RCRA also contains provisions (40 CFR Subparts I and S) for conducting corrective actions which govern the cleanup of releases of hazardous waste or constituents from solid waste management units at RCRA treatment, storage, or disposal facilities.

Although RCRA is a federal statute, many states implement the RCRA program. Currently, EPA has delegated its authority to implement various provisions of RCRA to 47 of the 50 states and two U.S. territories. Delegation has not been given to Alaska, Hawaii, or Iowa.

Most RCRA requirements are not industry specific but apply to any company that generates, transports, treats, stores, or disposes of hazardous waste. Here are some important RCRA regulatory requirements:

- **Criteria for Classification of Solid Waste Disposal Facilities and Practices** (40 CFR Part 257) establishes the criteria for determining which solid waste disposal facilities and practices pose a reasonable probability of adverse effects on health or the environment. The criteria were adopted to ensure non-municipal, non-hazardous waste disposal units that receive conditionally exempt small quantity generator waste do not present risks to human health and environment.
- **Criteria for Municipal Solid Waste Landfills** (40 CFR Part 258) establishes minimum national criteria for all municipal solid waste landfill units, including those that are used to dispose of sewage sludge.
- **Identification of Solid and Hazardous Wastes** (40 CFR Part 261) establishes the standard to determine whether the material in question is considered a solid waste and, if so, whether it is a hazardous waste or is exempted from regulation.
- **Standards for Generators of Hazardous Waste** (40 CFR Part 262) establishes the responsibilities of hazardous waste generators including obtaining an EPA identification number, preparing a manifest, ensuring proper packaging and labeling, meeting standards for waste accumulation units, and recordkeeping and reporting requirements. Generators can accumulate hazardous waste on-site for up to 90 days (or 180 days depending on the amount of waste generated) without obtaining a permit.
- **Land Disposal Restrictions** (LDRs) (40 CFR Part 268) are regulations prohibiting the disposal of hazardous waste on land without prior treatment. Under the LDRs program, materials must meet treatment standards prior to placement in a RCRA land disposal unit (landfill, land treatment unit, waste pile, or surface impoundment). Generators of waste subject to the LDRs must provide notification of such to the designated TSD facility to ensure proper treatment prior to disposal.

- **Used Oil Management Standards** (40 CFR Part 279) impose management requirements affecting the storage, transportation, burning, processing, and re-refining of the used oil. For parties that merely generate used oil, regulations establish storage standards. For a party considered a used oil processor, re-refiner, burner, or marketer (one who generates and sells off-specification used oil directly to a used oil burner), additional tracking and paperwork requirements must be satisfied.
- RCRA contains unit-specific standards for all units used to store, treat, or dispose of hazardous waste, including **Tanks and Containers**. Tanks and containers used to store hazardous waste with a high volatile organic concentration must meet emission standards under RCRA. Regulations (40 CFR Part 264-265, Subpart CC) require generators to test the waste to determine the concentration of the waste, to satisfy tank and container emissions standards, and to inspect and monitor regulated units. These regulations apply to all facilities who store such waste, including large quantity generators accumulating waste prior to shipment offsite.
- **Underground Storage Tanks** (USTs) containing petroleum and hazardous substances are regulated under Subtitle I of RCRA. Subtitle I regulations (40 CFR Part 280) contain tank design and release detection requirements, as well as financial responsibility and corrective action standards for USTs. The UST program also includes upgrade requirements for existing tanks that were to be met by December 22, 1998.
- **Boilers and Industrial Furnaces** (BIFs) that use or burn fuel containing hazardous waste must comply with design and operating standards. BIF regulations (40 CFR Part 266, Subpart H) address unit design, provide performance standards, require emissions monitoring, and, in some cases, restrict the type of waste that may be burned.

EPA's RCRA, Superfund, and EPCRA Call Center, at 800-424-9346, responds to questions and distributes guidance regarding all RCRA regulations. Additional documents and resources can be obtained from the hotline's homepage at www.epa.gov/epaoswer/hotline. The RCRA Hotline operates weekdays from 9:00 a.m. to 6:00 p.m., EST, excluding federal holidays.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), a 1980 law commonly known as Superfund, authorizes EPA to respond to releases, or threatened releases, of hazardous substances that

may endanger public health, welfare, or the environment. CERCLA also enables EPA to force parties responsible for environmental contamination to clean it up or to reimburse the Superfund for response or remediation costs incurred by EPA. The Superfund Amendments and Reauthorization Act (SARA) of 1986 revised various sections of CERCLA, extended the taxing authority for the Superfund, and created a free-standing law, SARA Title III, also known as the Emergency Planning and Community Right-to-Know Act (EPCRA).

The CERCLA hazardous substance release reporting regulations (40 CFR Part 302) direct the person in charge of a facility to report to the National Response Center (NRC) any environmental release of a hazardous substance which equals or exceeds a reportable quantity. Reportable quantities are listed in 40 CFR Part 302.4. A release report may trigger a response by EPA or by one or more federal or state emergency response authorities.

EPA implements hazardous substance responses according to procedures outlined in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR Part 300). The NCP includes provisions for cleanups. The National Priorities List (NPL) currently includes approximately 1,300 sites. Both EPA and states can act at other sites; however, EPA provides responsible parties the opportunity to conduct cleanups and encourages community involvement throughout the Superfund response process.

EPA's RCRA, Superfund and EPCRA Call Center, at 800-424-9346, answers questions and references guidance pertaining to the Superfund program. Documents and resources can be obtained from the hotline's homepage at www.epa.gov/epaoswer/hotline. The Superfund Hotline operates weekdays from 9:00 a.m. to 6:00 p.m., EST, excluding federal holidays.

Emergency Planning And Community Right-To-Know Act

The Superfund Amendments and Reauthorization Act (SARA) of 1986 created the Emergency Planning and Community Right-to-Know Act (EPCRA, also known as SARA Title III), a statute designed to improve community access to information about chemical hazards and to facilitate the development of chemical emergency response plans by state and local governments. Under EPCRA, states establish State Emergency Response Commissions (SERCs), responsible for coordinating certain emergency response activities and for appointing Local Emergency Planning Committees (LEPCs).

EPCRA and the EPCRA regulations (40 CFR Parts 350-372) establish four types of reporting obligations for facilities which store or manage specified chemicals:

- **EPCRA section 302** requires facilities to notify the SERC and LEPC of the presence of any extremely hazardous substance at the facility in an amount in excess of the established threshold planning quantity. The list of extremely hazardous substances and their threshold planning quantities is found at 40 CFR Part 355, Appendices A and B.
- **EPCRA section 303** requires that each LEPC develop an emergency plan. The plan must contain (but is not limited to) the identification of facilities within the planning district, likely routes for transporting extremely hazardous substances, a description of the methods and procedures to be followed by facility owners and operators, and the designation of community and facility emergency response coordinators.
- **EPCRA section 304** requires the facility to notify the SERC and the LEPC in the event of a release exceeding the reportable quantity of a CERCLA hazardous substance (defined at 40 CFR Part 302) or an EPCRA extremely hazardous substance.
- **EPCRA sections 311 and 312** require a facility at which a hazardous chemical, as defined by the Occupational Safety and Health Act, is present in an amount exceeding a specified threshold to submit to the SERC, LEPC and local fire department material safety data sheets (MSDSs) or lists of MSDSs and hazardous chemical inventory forms (also known as Tier I and II forms). This information helps the local government respond in the event of a spill or release of the chemical.
- **EPCRA section 313** requires certain covered facilities, including SIC codes 20 through 39 and others, which have ten or more employees, and which manufacture, process, or use specified chemicals in amounts greater than threshold quantities, to submit an annual toxic chemical release report. This report, commonly known as the Form R, covers releases and transfers of toxic chemicals to various facilities and environmental media. EPA maintains the data reported in a publically accessible database known as the Toxics Release Inventory (TRI).

All information submitted pursuant to EPCRA regulations is publicly accessible, unless protected by a trade secret claim.

EPA's RCRA, Superfund and EPCRA Call Center, at 800-424-9346, answers questions and distributes guidance regarding the emergency planning and community right-to-know regulations. Documents and resources can be obtained from the hotline's homepage at www.epa.gov/epaoswer/hotline.

The EPCRA Hotline operates weekdays from 9:00 a.m. to 6:00 p.m., EST, excluding federal holidays.

Clean Air Act

The Clean Air Act (CAA) and its amendments are designed to “protect and enhance the nation's air resources so as to promote the public health and welfare and the productive capacity of the population.” The CAA consists of six sections, known as Titles, which direct EPA to establish national standards for ambient air quality and for EPA and the states to implement, maintain, and enforce these standards through a variety of mechanisms. Under the CAA, many facilities are required to obtain operating permits that consolidate their air emission requirements. State and local governments oversee, manage, and enforce many of the requirements of the CAA. CAA regulations appear at 40 CFR Parts 50-99.

Pursuant to Title I of the CAA, EPA has established national ambient air quality standards (NAAQSs) to limit levels of “criteria pollutants,” including carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur dioxide. Geographic areas that meet NAAQSs for a given pollutant are designated as attainment areas; those that do not meet NAAQSs are designated as non-attainment areas. Under section 110 and other provisions of the CAA, each state must develop a State Implementation Plan (SIP) to identify sources of air pollution and to determine what reductions are required to meet federal air quality standards. Revised NAAQSs for particulates and ozone were proposed in 1996 and will become effective in 2001.

Title I also authorizes EPA to establish New Source Performance Standards (NSPS), which are nationally uniform emission standards for new and modified stationary sources falling within particular industrial categories. NSPSs are based on the pollution control technology available to that category of industrial source (see 40 CFR Part 60).

Under Title I, EPA establishes and enforces National Emission Standards for Hazardous Air Pollutants (NESHAPs), nationally uniform standards oriented toward controlling specific hazardous air pollutants (HAPs). Section 112(c) of the CAA further directs EPA to develop a list of source categories that emit any of 188 HAPs, and to develop regulations for these categories of sources. To date EPA has listed 185 source categories and developed a schedule for the establishment of emission standards. The emission standards are being developed for both new and existing sources based on “maximum achievable control technology” (MACT). The MACT is defined as the control technology achieving the maximum degree of reduction in the emission of the HAPs, taking into account cost and other factors.

Title II of the CAA pertains to mobile sources, such as cars, trucks, buses, and planes. Reformulated gasoline, automobile pollution control devices, and vapor recovery nozzles on gas pumps are a few of the mechanisms EPA uses to regulate mobile air emission sources.

Title IV-A establishes a sulfur dioxide and nitrogen oxides emissions program designed to reduce the formation of acid rain. Reduction of sulfur dioxide releases will be obtained by granting to certain sources limited emissions allowances that are set below previous levels of sulfur dioxide releases.

Title V of the CAA establishes an operating permit program for all “major sources” (and certain other sources) regulated under the CAA. One purpose of the operating permit is to include in a single document all air emissions requirements that apply to a given facility. States have developed the permit programs in accordance with guidance and regulations from EPA. Once a state program is approved by EPA, permits are issued and monitored by that state.

Title VI is intended to protect stratospheric ozone by phasing out the manufacture of ozone-depleting chemicals and restricting their use and distribution. Production of Class I substances, including 15 kinds of chlorofluorocarbons (CFCs), were phased out (except for essential uses) in 1996.

EPA's Clean Air Technology Center, at 919-541-0800 or www.epa.gov/ttn/catc, provides general assistance and information on CAA standards. The Stratospheric Ozone Information Hotline, at 800-296-1996 or www.epa.gov/ozone, provides general information about regulations promulgated under Title VI of the CAA; EPA's EPCRA Call Center, at 800-424-9346 or www.epa.gov/epaoswer/hotline, answers questions about accidental release prevention under CAA section 112(r); and information on air toxics can be accessed through the Unified Air Toxics website at <http://www.epa.gov/ttn/atw/>. In addition, the Clean Air Technology Center's website includes recent CAA rules, EPA guidance documents, and updates of EPA activities.

Federal Insecticide, Fungicide, and Rodenticide Act

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) was first passed in 1947, and amended numerous times, most recently by the Food Quality Protection Act (FQPA) of 1996. FIFRA provides EPA with the authority to oversee, among other things, the registration, distribution, sale and use of pesticides. The Act applies to all types of pesticides, including insecticides, herbicides, fungicides, rodenticides and antimicrobials. FIFRA covers both intrastate and interstate commerce.

Establishment Registration

Section 7 of FIFRA requires that establishments producing pesticides, or active ingredients used in producing a pesticide subject to FIFRA, register with EPA. Registered establishments must report the types and amounts of pesticides and active ingredients they produce. The Act also provides EPA inspection authority and enables the agency to take enforcement actions against facilities that are not in compliance with FIFRA.

Product Registration

Under section 3 of FIFRA, all pesticides (with few exceptions) sold or distributed in the U.S. must be registered by EPA. Pesticide registration is very specific and generally allows use of the product only as specified on the label. Each registration specifies the use site i.e., where the product may be used and the amount that may be applied. The person who seeks to register the pesticide must file an application for registration. The application process often requires either the citation or submission of extensive environmental, health and safety data.

To register a pesticide, the EPA Administrator must make a number of findings, one of which is that the pesticide, when used in accordance with widespread and commonly recognized practice, will not generally cause unreasonable adverse effects on the environment.

FIFRA defines “unreasonable adverse effects on the environment” as “(1) any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of the pesticide, or (2) a human dietary risk from residues that result from a use of a pesticide in or on any food inconsistent with the standard under section 408 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 346a).”

Under FIFRA section 6(a)(2), after a pesticide is registered, the registrant must also notify EPA of any additional facts and information concerning unreasonable adverse environmental effects of the pesticide. Also, if EPA determines that additional data are needed to support a registered pesticide, registrants may be requested to provide additional data. If EPA determines that the registrant(s) did not comply with their request for more information, the registration can be suspended under FIFRA section 3(c)(2)(B).

Use Restrictions

As a part of the pesticide registration, EPA must classify the product for general use, restricted use, or general for some uses and restricted for others (Miller, 1993). For pesticides that may cause unreasonable adverse effects on the environment, including injury to the applicator, EPA may require that the pesticide be applied either by or under the direct supervision of a certified applicator.

Reregistration

Due to concerns that much of the safety data underlying pesticide registrations becomes outdated and inadequate, in addition to providing that registrations be reviewed every 15 years, FIFRA requires EPA to reregister all pesticides that were registered prior to 1984 (section 4). After reviewing existing data, EPA may approve the reregistration, request additional data to support the registration, cancel, or suspend the pesticide.

Tolerances and Exemptions

A tolerance is the maximum amount of pesticide residue that can be on a raw product and still be considered safe. Before EPA can register a pesticide that is used on raw agricultural products, it must grant a tolerance or exemption from a tolerance (40 CFR Parts 163.10 through 163.12). Under the Federal Food, Drug, and Cosmetic Act (FFDCA), a raw agricultural product is deemed unsafe if it contains a pesticide residue, unless the residue is within the limits of a tolerance established by EPA or is exempt from the requirement.

Cancellation and Suspension

EPA can cancel a registration if it is determined that the pesticide or its labeling does not comply with the requirements of FIFRA or causes unreasonable adverse effects on the environment (Haugrud, 1993).

In cases where EPA believes that an “imminent hazard” would exist if a pesticide were to continue to be used through the cancellation proceedings, EPA may suspend the pesticide registration through an order and thereby halt the sale, distribution, and usage of the pesticide. An “imminent hazard” is defined as an unreasonable adverse effect on the environment or an unreasonable hazard to the survival of a threatened or endangered species that would be the likely result of allowing continued use of a pesticide during a cancellation process.

When EPA believes an emergency exists that does not permit a hearing to be held prior to suspending, EPA can issue an emergency order which makes the suspension immediately effective.

Imports and Exports

Under FIFRA section 17(a), pesticides not registered in the U.S. and intended solely for export are not required to be registered provided that the exporter obtains and submits to EPA, prior to export, a statement from the foreign purchaser acknowledging that the purchaser is aware that the product is not registered in the United States and cannot be sold for use there. EPA sends these statements to the government of the importing country. FIFRA sets forth additional requirements that must be met by pesticides intended solely for export. The enforcement policy for exports is codified at 40 CFR Parts 168.65, 168.75, and 168.85.

Under FIFRA section 17(c), imported pesticides and devices must comply with U.S. pesticide law. Except where exempted by regulation or statute, imported pesticides must be registered. FIFRA section 17(c) requires that EPA be notified of the arrival of imported pesticides and devices. This is accomplished through the Notice of Arrival (NOA) (EPA Form 3540-1), which is filled out by the importer prior to importation and submitted to the EPA regional office applicable to the intended port of entry. U.S. Customs regulations prohibit the importation of pesticides without a completed NOA. The EPA-reviewed and signed form is returned to the importer for presentation to U.S. Customs when the shipment arrives in the U.S. NOA forms can be obtained from contacts in the EPA Regional Offices or www.epa.gov/oppfead1/international/noalist.htm.

Additional information on FIFRA and the regulation of pesticides can be obtained from a variety of sources, including EPA's Office of Pesticide Programs www.epa.gov/pesticides, EPA's Office of Compliance, Agriculture and Ecosystem Division <http://www.epa.gov/compliance/assistance/sectors/agriculture.html>, or The National Agriculture Compliance Assistance Center, 888-663-2155 or <http://www.epa.gov/agriculture/>. Other sources include the National Pesticide Telecommunications Network, 800-858-7378, and the National Antimicrobial Information Network, 800-447-6349.

Toxic Substances Control Act

Because the Toxic Substances Control Act (TSCA) applies primarily to the chemical industry, it is discussed in Section VI.B., Industry Specific Requirements.

Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) encourages states/tribes to preserve, protect, develop, and where possible, restore or enhance valuable natural coastal resources such as wetlands, floodplains, estuaries, beaches, dunes, barrier islands, and coral reefs, as well as the fish and wildlife using those habitats. It includes areas bordering the Atlantic, Pacific, and Arctic Oceans, Gulf of Mexico, Long Island Sound, and Great Lakes. A unique feature of this law is that participation by states/tribes is voluntary.

In the Coastal Zone Management Act Reauthorization Amendments (CZARA) of 1990, Congress identified nonpoint source pollution as a major factor in the continuing degradation of coastal waters. Congress also recognized that effective solutions to nonpoint source pollution could be implemented at the state/tribe and local levels. In CZARA, Congress added Section 6217 (16 U.S.C. section 1455b), which calls upon states/tribes with federally-approved coastal zone management programs to develop and implement coastal nonpoint pollution control programs. The Section 6217

program is administered at the federal level jointly by EPA and the National Oceanic and Atmospheric Agency (NOAA).

Section 6217(g) called for EPA, in consultation with other agencies, to develop guidance on “management measures” for sources of nonpoint source pollution in coastal waters. Under Section 6217, EPA is responsible for developing technical guidance to assist states/tribes in designing coastal nonpoint pollution control programs. On January 19, 1993, EPA issued its *Guidance Specifying Management Measures For Sources of Nonpoint Pollution in Coastal Waters*, which addresses five major source categories of nonpoint pollution: (1) urban runoff, (2) agriculture runoff, (3) forestry runoff, (4) marinas and recreational boating, and (5) hydromodification.

Additional information on coastal zone management may be obtained from EPA’s Office of Wetlands, Oceans, and Watersheds, www.epa.gov/owow, or from the Watershed Information Network www.epa.gov/win. The NOAA website, <http://www.ocrm.nos.noaa.gov/czm/>, also contains additional information on coastal zone management.

VI.B. Industry Specific Requirements

The organic chemical industry is affected by nearly all federal environmental statutes. In addition, the industry is subject to numerous laws and regulations from state and local governments designed to protect and improve the nation’s health, safety, and environment. A summary of the major federal regulations affecting the chemical industry follows.

Clean Air Act (CAA)

National Ambient Air Quality Standards

At organic chemistry manufacturing facilities, air emissions from both processes and supporting equipment (e.g., boilers, storage tanks, and equipment leaks) are regulated under the National Ambient Air Quality Standards (NAAQS) and the State Implementation Plans (SIP) that enforce the standards. States may implement controls to limit emissions of particulate matter (PM), nitrogen dioxide (NO₂), ozone (O₃), and sulfur dioxide (SO₂), lead, and carbon monoxide (CO).

Although many limits are implemented at the state level, there are national guidelines that serve as a basis for more specific limits. Sources that are considered “major” under the Clean Air Act are subject to new source review (NSR), which includes the prevention of significant deterioration (PSD) review. Both NSR and PSD are permit programs for facilities that were constructed, reconstructed, or modified after a certain date.

Facilities in NAAQS attainment areas must follow PSD requirements by demonstrating that the construction/modification project will not cause a violation of air quality limits and by implementing the best available control technology (BACT).

New or modified facilities in nonattainment areas must follow NSR requirements, which require the source to meet the lowest achievable emission rate (LAER) and to obtain emission offsets to ensure that the nonattainment problem is not made worse by the new/modified source.

In addition to the PSD/NSR pre-construction obligations, there are process-specific operational standards: New Source Performance Standards (NSPS). 40 CFR 60 lists these standards, which serve as minimum requirements in states SIPs. Individual states may impose requirements that are more strict. The following NSPSs are particularly relevant to the organic chemicals industry:

Subparts D, Db, Dc	Industrial boilers (Regulates PM, nitrogen oxides (NO _x) and sulfur dioxide (SO ₂) from new boilers)
Subpart Ka, Kb	Volatile organic liquid storage vessels (Including Petroleum Liquid Storage Vessels) (Regulates VOC from applicable storage tanks containing volatile organic liquids)
Subpart VV	Equipment leaks (Regulates VOC from equipment in the organic chemicals industry)
Subpart DDD	Polymer manufacturing [Regulates VOC from facilities manufacturing polypropylene, polyethylene, polystyrene, or poly(ethylene terephthalate)]
Subpart III	Air oxidation unit processes (Regulates VOC from processes that use oxygen in air as a reactant)
Subpart NNN	Distillation operations (Regulates VOC from processes that separate vapor-phase chemicals from liquid-phase chemicals)
Subpart RRR	Reactor processes (Regulates VOC from processes that combine or decompose chemicals)

Hazardous Air Pollutants

Air toxics regulations apply to several parts of the organic chemical manufacturing process. The most important National Emission Standards for Hazardous Air Pollutants (NESHAP) for the industry is the Hazardous Organic NESHAP, referred to as HON (40 CFR 63 subparts F,G,H, and I). The HON regulates emissions of 111 hazardous air pollutants emitted by the organic chemicals industry from process vents, transfer operations, storage vessels, wastewater, and equipment leaks. The HON applies to “major sources,” which are defined as facilities that emit or have the potential to emit 10 tons per year or more of any hazardous air pollutant (HAP) or 25 tons per year or more of any combination of HAPs.

Among other NESHAPs that are important to the industry are:

- Vinyl chloride manufacturers (40 CFR part 61 subpart F)
- Benzene equipment leaks (40 CFR part 61 subpart J)
- Equipment leaks (fugitive emission sources) (40 CFR 61 subpart V)
- Benzene storage vessels (40 CFR 61 subpart Y)
- Benzene transfer operations (40 CFR 61 subpart BB)
- Benzene waste operations (40 CFR part 61 subpart FF)
- Industrial cooling towers (40 CFR 63 subpart Q)

Part 61 NESHAPs can apply to a facility of any size and are not limited to major sources.

Risk Management Program

Organic chemical facilities are subject to section 112(r) of CAA, which states that stationary sources using extremely hazardous substances have a “general duty” to initiate specific activities to prevent and mitigate accidental releases. The general duty requirements apply to stationary sources that produce, process, handle, or store these substances, regardless of the quantity of managed at the facility. Although there is no list of “extremely hazardous substances,” EPA’s Chemical Emergency Preparedness and Prevention Office provides some guidance at its website: <http://yosemite.epa.gov/oswer/ceppoweb.nsf/content/index.html>. The general duty clause requires facilities to identify hazards that may result from accidental releases, to design and maintain a safe facility, and to minimize the consequences of releases when they occur.

Many large organic chemical facilities are subject to additional, more explicit risk management requirements. Facilities that have more than a threshold quantity of any of the 140 regulated substances in a single process are required to develop a risk management program and to summarize their program in a risk management plan (RMP). Facilities subject to the

requirements were required to submit a registration and RMP in 1999 or whenever they first exceed the threshold for a listed regulated substance after that date.

All facilities meeting the RMP threshold requirements must follow Program 1 requirements:

- An offsite consequence analysis that evaluates specific potential release scenarios, including worst-case and alternative scenarios.
- A five-year history of certain accidental releases of regulated substances from covered processes.
- A risk management plan, revised at least once every five years, that describes and documents these activities for all covered processes.

In addition, many organic chemicals facilities may be subject to the requirements of Program 2 or 3. These additional requirements include:

- An integrated prevention program to manage risk. The prevention program will include identification of hazards, written operating procedures, training, maintenance, and accident investigation.
- An emergency response program.
- An overall management system to put these program elements into effect.

The list of chemicals that trigger RMP requirements can be found in 40 CFR 68.130; information to determine the required program level also can be found in 40 CFR 68.

Title V permits

Title V requires that all “major sources” (and certain minor sources) obtain an operating permit. Large organic chemical facilities are required to have a Title V permit, and may be required to submit information about emissions, control devices, and the general process at the facility in the permit application. Permits may limit pollutant emissions and impose monitoring, record keeping, and reporting requirements.

Monitoring requirements for many facilities with Title V permits are specified in the Compliance Assurance Monitoring (CAM) regulations. For facilities that meet emissions requirements on their permits through the use of pollution control equipment, CAM requires that the facilities conduct monitoring of that control equipment in order to assure that the equipment is operated and maintained as prescribed in their permits.

Title VI Stratospheric Ozone Protection

Many organic chemical facilities operate industrial process refrigeration units, such as chillers for chlorine dioxide plants. For those units that utilize

ozone-depleting chemicals, such as chlorofluorocarbons (CFCs), facilities are required under Title VI to follow leak repair requirements.

Consolidated Air Rule (CAR)

The Consolidated Air Rule (CAR) is a pilot project for the synthetic organic chemical manufacturing industry (SOCMI). The primary goal of the CAR is to reduce the burden and potential confusion of complying with multiple air regulations for the sources at a single facility, while ensuring protection of the environment and improving compliance. The program is an *optional* alternative rule for facilities subject to SOCMI air regulations.

For facilities that wish to comply with the CAR, the program consolidates major portions of the following new source performance standards (NSPS) and national emission standards for hazardous air pollutants (NESHAP) applicable to storage vessels, process vents, transfer operations, and equipment leaks within the SOCMI:

- 40 CFR part 60, subparts A, Ka, Kb, VV, DDD, III, NNN, and RRR
- 40 CFR part 61, subparts A, V, Y, and BB
- 40 CFR part 63, subparts A, F, G, and H

The CAR regulations, codified in 40 CFR 65, organize the requirements by specific emission point; as a result, the subparts more clearly delineate the requirements that would apply to each plant function. It is important to note that the CAR consolidates only those CFR subparts listed above. Organic chemicals facilities may be subject to other regulations under the CAA or other statutes, such as RCRA.

Toxic Substances Control Act (TSCA)

The Toxic Substances Control Act (TSCA) granted EPA authority to create a regulatory framework to collect data on chemicals in order to evaluate, assess, mitigate, and control risks that may be posed by their manufacture, processing, and use. TSCA provides a variety of control methods to prevent chemicals from posing unreasonable risk. It is important to note that pesticides as defined in FIFRA are not included in the definition of a “chemical substance” when manufactured, processed, or distributed in commerce for use as a pesticide.

Section 4 of TSCA requires testing of existing chemicals – both mixtures and individual substances. EPA has established a “Master Testing List” that presents testing priorities, based on risk and exposure potential. For example, EPA is currently working with manufacturers to encourage testing on chemicals that are produced and used in large volumes (High Production Volume Testing). At present these tests are voluntary, but EPA has authority

to develop a testing rule if it determines such a rule is necessary. Detail is provided in 40 CFR 766, 790-799.

Section 5 states the requirements for premanufacture notices (PMNs). Chemical manufacturers are required to notify EPA 90 days before manufacturing or importing a chemical if the chemical is not listed in EPA's Chemical Substance Inventory, or if its use would be a "significant new use." See 40 CFR 700, 720-725, 747 for more information.

Section 6 regulates or bans the use of chemicals that pose unreasonable risks. Chemicals regulated under this rule include asbestos, chlorofluorocarbons (CFCs), lead, and polychlorinated biphenyls (PCBs). Details are listed in 40 CFR 747, 749, 761, and 763.

Section 8 has several recordkeeping and reporting requirements, which are listed in 40 CFR 710-717. The Inventory Update Rule (IUR) under TSCA Section 8(a) requires companies that manufacture or import more than 10,000 lbs. of certain chemicals included in the TSCA Chemical Substance Inventory to report current data on the production volume, plant site, and site-limited status of these chemicals. Reporting under the IUR takes place at four-year intervals that began in 1986.

The Preliminary Assessment Information Rule (PAIR) under TSCA Section 8(a) requires site-specific information on the manufacture or importing for commercial purposes of any chemicals listed in 40 CFR 712.30. The information includes: quantity of chemical, amount lost to the environment during production or importation, quantity of releases (controlled and non-controlled) of the chemical, and per release worker exposure information.

The Allegations of Significant Adverse Reactions Rule under TSCA Section 8(c) requires companies to keep a file of allegations of significant adverse reactions (to human health or the environment) of any chemical it manufactures, imports, processes, or distributes. The company must provide this information to EPA upon request.

The Unpublished Health and Safety Studies Rule under TSCA Section 8(d) requires companies to submit to EPA a list and/or copies of unpublished studies that address the health or safety issues of certain listed chemicals.

The Substantial Risk Information Requirement in Section 8(e) requires companies to report to EPA within 15 days any new information that reasonably supports the conclusions that a substance or mixture manufactured, imported, processed, or distributed by the company presents a substantial risk of injury to health or the environment.

Section 12 of TSCA requires that exporters of chemicals subject to Sections 5, 6, or 7 of TSCA must notify EPA of the country of destination the first time a chemical is shipped to the country during a calendar year. Companies manufacturing chemicals subject to Section 4 of TSCA must notify EPA of the country of destination the first time that chemical is shipped to the country. Specific requirements are listed in 40 CFR 707.

Section 13 requires importers of a chemical substance or mixture to certify at the port of entry that the shipment is either subject to and in compliance with TSCA (a positive certification), or that the shipment is not subject to TSCA (a negative certification). Details are listed in 40 CFR 707 and 19 CFR 12.118-12.128.

EPA's TSCA Assistance Information Service, at 202-554-1404, answers questions and distributes guidance pertaining to Toxic Substances Control Act standards. The Service operates from 8:30 a.m. through 4:30 p.m., EST, excluding federal holidays.

Clean Water Act (CWA)

There are two industry-specific components of the Clean Water Act (CWA) requirements: NPDES permitting and pretreatment programs. Other general CWA requirements, such as those for wetlands and stormwater, may also apply to the organic chemicals facilities and are described in Section VI.A.

Individual NPDES requirements have been developed for specific subcategories of the industry; they are described in 40 CFR 414. For each of these subcategories (commodity organic chemicals, bulk organic chemicals, and specialty organic chemicals), the regulations outline some or all of the following for facilities that discharge wastewater directly to the environment:

- best practicable control technology currently available (BPT) and best conventional control technology (BCT) guidelines for the control of conventional pollutants (biological oxygen demand, total suspended solids, and pH).
- best available technology economically achievable (BAT) guidelines for the control of toxic and nonconventional pollutants.
- new source performance standards (NSPS) for the control of conventional, non-conventional, and toxic pollutants from new facilities that discharge directly to the environment. Approximately 60 chemicals are regulated under BAT and NSPS guidelines for the organic chemicals industry.

For facilities that discharge their wastewater to a publicly-owned treatment works (POTW), pretreatment standards may apply. In addition to general standards established by EPA that address all industries, there are Pretreatment Standards for New Sources (PSNS) and Pretreatment Standards for Existing Sources (PSES) that are specific to 45 chemicals processed within the organic chemicals industry. These standards also are listed in 40 CFR 414.

Emergency Planning and Community Right-to-Know Act (EPCRA)

Three of the components of EPCRA are directly relevant to the organic chemicals industry:

- Emergency Planning (§302(a)) - Businesses that produce, use or store “hazardous substances” must: 1) submit material safety data sheets or the equivalent, and 2) Tier I/Tier II annual inventory report forms to the appropriate local emergency planning commission. Those handling “extremely hazardous substances” above threshold planning quantities (TPQs) also are required to submit a one-time notice to the state emergency response commission.
- Emergency Notification of Extremely Hazardous Substance Release (§304) - A business that unintentionally releases a reportable quantity of an extremely hazardous substance must report that release to the state emergency planning commission and the local emergency planning commission.
- Release Reporting (§313) - Manufacturing businesses with ten or more employees that manufactured, processed, or otherwise used a listed toxic chemical in excess of the “established threshold” must file annually a Toxic Chemical Release form with EPA and the state. Documentation supporting release estimates must be kept for three years. If an organic chemicals company produces chemicals on the TRI list, the company has a duty to notify its customers of the percentage by weight of the listed chemicals. The company must also notify its customers whenever changes are made to the product that affect the amount of TRI chemicals, or when chemicals in its products become newly added to the TRI list by EPA.

Resource Conservation and Recovery Act (RCRA)

Many RCRA requirements outlined in Section VI.A pertain to facilities in the organic chemicals industry. 40 CFR 261 presents guidelines for identifying

hazardous waste. There are over 50 materials listed as hazardous waste from specific sources in the organic chemicals industry (K wastes), and many more hazardous wastes from non-specific sources (F wastes) and materials with hazardous waste characteristics (D wastes) are generated by the industry. Facilities that generate hazardous wastes must follow the standards for hazardous waste generators (40 CFR 262) as discussed in Section VI.A.

Many organic chemical facilities store some hazardous wastes at the facility beyond the accumulation time limits available to generators (e.g., 90 or 180 days). Such facilities are required to have a RCRA treatment, storage, and disposal facility (TSDF) permit (40 CFR 262.34). Some organic chemical facilities are considered TSDF facilities and therefore may be subject to the following regulations covered under 40 CFR 264:

- Contingency plans and emergency procedures (subpart D)
- Manifesting, record keeping, and reporting (subpart E)
- Use and management of containers (subpart I)
- Tank systems (subpart J)
- Surface impoundments (subpart K)
- Land treatment (subpart I)
- Corrective action of hazardous waste releases (subpart S)
- Air emissions standards for process vents of processes that process or generate hazardous wastes (subpart AA)
- Emissions standards for leaks in hazardous waste handling equipment (subpart BB)
- Emissions standards for containers, tanks, and surface impoundments that contain hazardous wastes (subpart CC)

It should be noted that many recycling and reclamation activities involving hazardous waste are considered to be “treatment,”² depending on the particular recycling activities involved and the materials being recycled. Thus it is important to ensure that any time a facility is processing secondary materials it is not unknowingly engaging in hazardous waste treatment.

Many organic chemical facilities are also subject to the underground storage tank (UST) program (40 CFR part 280). The UST regulations apply to facilities that store either petroleum products or hazardous substances (except hazardous waste) identified under the Comprehensive Environmental Response, Compensation, and Liability Act. (Hazardous waste is regulated

² 40 CFR 260.10 states that the definition of treatment is: “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 waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.”

by other components of RCRA discussed above). UST regulations address design standards, leak detection, operating practices, response to releases, financial responsibility for releases, and closure standards.

A number of RCRA wastes have been prohibited from land disposal unless treated to meet specific standards under the RCRA Land Disposal Restriction (LDR) program. The wastes covered by the RCRA LDRs are listed in 40 CFR part 268 subpart C and include a number of wastes that could potentially be generated at organic chemical facilities. Standards for the treatment and storage of restricted wastes are described in subparts D and E, respectively.

VI.C. Pending and Proposed Regulatory Requirements

Information regarding proposed regulations affecting the organic chemical industry were obtained from EPA's United Agenda, which can be found at www.epa.gov/fedrgstr/unified.htm. The United Agenda is updated twice per year. The contacts listed after each proposed regulation can provide more information.

*Clean Air Act*NSPS: Synthetic Organic Chemicals Manufacturing Industry – Wastewater

This rule will develop a new source performance standard to control air emissions of VOCs from wastewater treatment operations of the synthetic chemical manufacturing industry. As of mid-2002, a final rule was anticipated in December 2002. (Contact: Mary Tom Kissell, Office of Air and Radiation, 919-541-4516 or Kent Hustvedt, Office of Air and Radiation, 919-541-5395).

NESHAP: Miscellaneous Organic Chemical Manufacturing and Miscellaneous Coating Manufacturing

This regulation will cover organic chemical manufacturing processes not covered by the HON or other MACT standards. The regulation will control process vents (continuous and batch, including mixing operations), equipment leaks, storage tanks, wastewater, solvent recovery, and heat exchange systems. As mid-2002, a final rule is anticipated in late 2003. (Contact: Randy McDonald, Office of Air and Radiation, 919-541-5402 or Penny Lassiter, Office of Air and Radiation, 919-541-5396).

NESHAP: Combustion Turbine

The combustion turbine source category is listed as a major source of HAPs under section 112 of the Clean Air Act. Combustion turbines also emit NO_x, SO₂, CO, and PM. Combustion turbines are already regulated for NO_x and SO₂ emissions under section 111 of the CAA. EPA will gather information on HAP emissions from combustion turbines and determine the appropriate maximum achievable control technology (MACT) to reduce HAP emissions. As of mid-2002, a final rule was anticipated in late 2003. (Contact: Sims Roy, Office of Air and Radiation, 919-541-5263 or Robert J. Wayland, Office of Air and Radiation, 919-541-1045).

NESHAP: Generic MACT For Carbon Black, Ethylene, Cyanide and Spandex

Several of the source categories that are subject to MACT standards contain only a few sources (e.g., less than five). EPA plans to develop a generic MACT standard for these source categories. As of mid-2002, a final rule was imminent. (Contact: Mark Morris, Office of Air and Radiation, 919-541-5416 or Penny Lassiter, Office of Air and Radiation, 919-541-5396).

*Resource Conservation and Recovery Act*Standardized Permit for RCRA Hazardous Waste Management Facilities

EPA is considering creating a new type of general permit, called a standardized permit, for facilities that generate waste and routinely manage the waste on-site in tanks, containers, and containment buildings. Under the standardized permit, facility owners and operators would certify compliance with generic design and operating conditions set on a national basis. The permitting agency would review the certifications submitted by the facility owners and operators. The permitting agency would also be able to impose additional site-specific terms and conditions for corrective action or other purposes, as called for by RCRA. The standardized permit should streamline the permit process by allowing facilities to obtain and modify permits more easily while maintaining the protectiveness currently existing in the individual RCRA permit process. As of mid-2002, a final rule was anticipated in early 2003. (Contact: Vernon Myers, Office of Solid Waste and Emergency Response, 703-308-8660).

VII. COMPLIANCE AND ENFORCEMENT PROFILE

Background

Until recently, EPA has focused much of its attention on ensuring compliance with specific environmental statutes. This approach allows the Agency to track compliance with the Clean Air Act, the Resource Conservation and Recovery Act, the Clean Water Act, and other environmental statutes. Within the last several years, the Agency has begun to supplement single-media compliance indicators with facility-specific, multimedia indicators of compliance. In doing so, EPA is in a better position to track compliance with all statutes at the facility level, and within specific industrial sectors.

A major step in building the capacity to compile multimedia data for industrial sectors was the creation of EPA's Integrated Data for Enforcement Analysis (IDEA) system. IDEA has the capacity to "read into" the Agency's single-media databases, extract compliance records, and match the records to individual facilities. The IDEA system can match Air, Water, Waste, Toxics/Pesticides/EPCRA, TRI, and Enforcement Docket records for a given facility, and generate a list of historical permit, inspection, and enforcement activity. IDEA also has the capability to analyze data by geographic area and corporate holder. As the capacity to generate multimedia compliance data improves, EPA will make available more in-depth compliance and enforcement information. Additionally, sector-specific measures of success for compliance assistance efforts are under development.

Compliance and Enforcement Profile Description

Using inspection, violation and enforcement data from the IDEA system, this section provides information regarding the historical compliance and enforcement activity of this sector. Compliance and enforcement records from EPA's data systems are compiled to the facility level using the Facility Registry System's (FRS) Master Source ID, which links records from virtually any of EPA's data systems to a facility record. For each facility (i.e., Master Source ID), the Industry Sector Notebooks analysis uses the facility-level SIC code that is designated by IDEA, which can be described as follows:

1. If the facility reports to TRI, then the designated SIC code is the primary SIC reported in the most recent TRI reporting year.
2. If the facility does not report to TRI, the first SIC codes from all linked AFS, PCS, RCRAInfo, BRS ID/permits are assembled. If more than one permit/ID exists for a particular program then only one record from that data system is used. The SIC code that occurs most often, if there is one,

becomes the designated SIC code.

3. If the facility does not report to TRI and no SIC code occurs more often than others, the designated SIC code is chosen from the linked programs in the following order: AFS, PCS, BRS, RCR, NCD, DCK. If more than one permit/ID exists for a particular program then only one record from that data system is used.

Note that EPA does not attempt to define the actual number of facilities that fall within each sector. Instead, the information presented in this section portrays the records of a subset of facilities within the sector that are well defined within EPA databases.

As a check on the relative size of the full sector universe, most notebooks contain an estimated number of facilities within the sector according to the Bureau of Census (See Section II). With sectors dominated by small businesses, such as metal finishers and printers, the reporting universe within the EPA databases may be small in comparison to Census data. However, the group selected for inclusion in this data analysis section should be consistent with this sector's general make-up.

Following this introduction is a list defining each data column presented within this section. These values represent a retrospective summary of inspections or enforcement actions, and solely reflect EPA, state and local compliance assurance activity that have been entered into EPA databases. To identify any changes in trends, the EPA ran two data queries, one for the past five calendar years (September 16, 1997 to September 15, 2002) and the other for the most recent 24-month period (September 16, 2000 to September 15, 2002). The five-year analysis gives an average level of activity for that period for comparison to the more recent activity.

Because most inspections focus on single-media requirements, the data queries presented in this section are taken from single media databases. These databases do not provide data on whether inspections are state/local or EPA-led. However, the table breaking down the universe of violations does give the reader a general measurement of the EPA's and states' efforts within each media program. The presented data illustrate the variations across Regions for certain sectors.³ This variation may be attributable to state/local data entry variations, specific geographic concentrations, proximity to population centers, sensitive ecosystems, highly toxic chemicals used in production, or historical noncompliance. Hence, the exhibited data

³ EPA Regions include the following states: I (CT, MA, ME, RI, NH, VT); II (NJ, NY, PR, VI); III (DC, DE, MD, PA, VA, WV); IV (AL, FL, GA, KY, MS, NC, SC, TN); V (IL, IN, MI, MN, OH, WI); VI (AR, LA, NM, OK, TX); VII (IA, KS, MO, NE); VIII (CO, MT, ND, SD, UT, WY); IX (AZ, CA, HI, NV, Pacific Trust Territories); X (AK, ID, OR, WA).

do not rank regional performance or necessarily reflect which regions may have the most compliance problems.

Compliance and Enforcement Data Definitions

General Definitions

Facility Registry System (FRS) -- this system assigns a common Master Source ID to EPA single-media permit records. The Master Source ID allows EPA to compile and review all permit, compliance, enforcement and pollutant release data for any given regulated facility.

Integrated Data for Enforcement Analysis (IDEA) -- is a data integration system that can retrieve information from the major EPA program office databases. IDEA uses the FRS maintained Master Source ID identification number to "glue together" separate data records from EPA's databases. This is done to create a "master list" of data records for any given facility. Some of the data systems accessible through IDEA are: AIRS (Air Facility Indexing and Retrieval System, Office of Air and Radiation), PCS (Permit Compliance System, Office of Water), RCRAInfo (Resource Conservation and Recovery Information System, Office of Solid Waste), NCDB (National Compliance Data Base, Office of Prevention, Pesticides, and Toxic Substances), CERCLIS (Comprehensive Environmental and Liability Information System, Superfund), and TRIS (Toxic Release Inventory System). IDEA also contains information from outside sources such as Dun and Bradstreet and the Occupational Safety and Health Administration (OSHA). Most data queries displayed in notebook sections IV and VII were conducted using IDEA.

Data Table Column Heading Definitions

Facilities in Search -- are based on the number of the FRS maintained Master Source IDs that were designated to the listed SIC code range. The SIC code range selected for each search is defined by each notebook's selected SIC code coverage described in Section II.

Facilities Inspected -- indicates the level of EPA and state agency inspections for the facilities in this data search. These values show what percentage of the facility universe is inspected in a 24- or 60- month period.

Number of Inspections -- measures the total number of inspections conducted in this sector. An inspection event is counted each time it is entered into a single media database.

Average Time Between Inspections -- provides an average length of time, expressed in months, that a compliance inspection occurs at a facility within

the defined universe.

Facilities with One or More Enforcement Actions -- expresses the number of facilities that were party to at least one enforcement action within the defined time period. This category is broken down further into federal and state actions. Data are obtained for administrative, civil/judicial, and criminal enforcement actions. Administrative actions include Notices of Violation (NOVs). A facility with multiple enforcement actions is only counted once in this column (facility with three enforcement actions counts as one). All percentages that appear are referenced to the number of facilities inspected.

Total Enforcement Actions -- describes the total number of enforcement actions identified for an industrial sector across all environmental statutes. A facility with multiple enforcement actions is counted multiple times (a facility with three enforcement actions counts as three).

State Lead Actions -- shows what percentage of the total enforcement actions are taken by state and local environmental agencies. Varying levels of use by states of EPA data systems may limit the volume of actions accorded state enforcement activity. Some states extensively report enforcement activities into EPA data systems, while other states may use their own data systems.

Federal Lead Actions -- shows what percentage of the total enforcement actions are taken by the United States Environmental Protection Agency. This value includes referrals from state agencies. Many of these actions result from coordinated or joint state/federal efforts.

Enforcement to Inspection Rate -- expresses how often enforcement actions result from inspections. This value is a ratio of enforcement actions to inspections, and is presented for comparative purposes only. This measure is a rough indicator of the relationship between inspections and enforcement. This measure simply indicates historically how many enforcement actions can be attributed to inspection activity. Reported inspections and enforcement actions under the Clean Water Act (CWA), the Clean Air Act (CAA) and the Resource Conservation and Recovery Act (RCRA) are included in this ratio. Inspections and actions from the TSCA/FIFRA/EPCRA database are not factored into this ratio because most of the actions taken under these programs are not the result of facility inspections. This ratio does not account for enforcement actions arising from non-inspection compliance monitoring activities (e.g., self-reported water discharges) that can result in enforcement action within the CAA, CWA and RCRA.

Facilities with One or More Violations Identified -- indicates the

percentage of inspected facilities having a violation identified in one of the following data categories: In Violation or Significant Violation Status (CAA); Reportable Noncompliance, Current Year Noncompliance, Significant Noncompliance (CWA); Noncompliance and Significant Noncompliance (FIFRA, TSCA, and EPCRA); Unresolved Violation and Unresolved High Priority Violation (RCRA). The values presented for this column reflect the extent of noncompliance within the measured time frame, but do not distinguish between the severity of the noncompliance. Percentages within this column can exceed 100 percent because facilities can be in violation status without being inspected. Violation status may be a precursor to an enforcement action, but does not necessarily indicate that an enforcement action will occur.

Media Breakdown of Enforcement Actions and Inspections -- four columns identify the proportion of total inspections and enforcement actions within EPA Air, Water, Waste, and TSCA/FIFRA/EPCRA databases. Each column is a percentage of either the “Total Inspections,” or the “Total Actions” column.

VII.A. Organic Chemicals Compliance History

Table 18 provides an overview of the reported compliance and enforcement data for the organic chemical industry over the past five years (September 16, 1997 to September 15, 2002). These data are also broken out by EPA Region thereby permitting geographical comparisons. A few points evident from the data are listed below.

- Regions 6, 4, and 5 contain the largest number of organic chemical facilities, and account for the majority of inspections and enforcement actions.
- Region 3 conducts a disproportionately high number of inspections relative to the number of facilities in the region, and the region has the lowest average time between inspections (5 months).
- Regions 9 and 1 have the highest average time between inspections of organic chemicals facilities (50 and 22 months, respectively), but also have the highest rate of enforcement actions per inspection (0.16).

Table 18: Five-Year Enforcement and Compliance Summary for the Organic Chemicals Industry, by Region

A	B	C	D	E	F	G	H	I	J
Region	Facilities In Search	Facilities Inspected	Number of Inspections	Average Months Between Inspections	Facilities with 1 or More Enforcement Actions	Total Enforcement Actions	Percent of State Lead Actions	Percent of Federal Lead Actions	Enforcement to Inspection Rate
National	1,107	832	8,839	8	574	811	72%	28%	0.09
1	32	25	88	22	12	14	50%	50%	0.16
2	149	111	933	10	88	105	78%	22%	0.11
3	106	83	1,225	5	62	102	80%	20%	0.08
4	216	156	2,211	6	102	163	82%	18%	0.07
5	156	118	1,165	8	78	76	59%	41%	0.07
6	267	214	2,433	7	184	304	69%	31%	0.12
7	103	77	516	12	20	23	65%	35%	0.04
8	24	16	116	12	10	6	17%	83%	0.05
9	31	13	37	50	10	6	17%	83%	0.16
10	23	19	115	12	8	12	58%	42%	0.10

VII.B. Comparison of Enforcement Activity Between Selected Industries

Tables 19 and 20 allow the compliance history of the organic chemical industry to be compared with the other industries covered by the industry sector notebooks. Comparisons between Tables 19 and 20 permit the identification of trends in compliance and enforcement records of the industry by comparing data covering the last five years to that of the past two years. Some points evident from the data are listed below.

- The organic chemical industry has a relatively high frequency of inspections compared to the other sectors shown. On average, organic chemical facilities were inspected every six months.
- Organic chemical industry has a relatively high percent of facilities with violations and enforcement actions and a relatively high rate of enforcement per inspection compared to the other sectors listed.
- Of the sectors shown, the organic chemical industry has one of the highest percentage of EPA led enforcement actions versus state led actions.

Tables 21 and 22 provide a more in-depth comparison between the organic chemical industry and other sectors by breaking out the compliance and enforcement data by environmental statute. As in Tables 18 and 19, the data cover the last five years (Table 21) and the previous two years (Table 22) to facilitate the identification of recent trends. A few points evident from the data are listed below.

- Inspections and actions conducted under the CAA and RCRA account for the vast majority of the industry's inspections and actions.
- In the past two years, the proportion of CAA inspections has decreased, but these inspections have resulted in a higher proportion of CAA enforcement actions.

Table 19: Five-Year Enforcement and Compliance Summary for Selected Industries										
A	B	C	D	E	F	G	H	I	J	
Industry Sector	Facilities in Search	Facilities Inspected	Number of Inspections	Average Months Between Inspections	Facilities with 1 or More Enforcement Actions	Total Closed Enforcement Actions	Percent State Lead Actions	Percent Federal Lead Actions	Enforcement to Inspection Rate	
Agricultural Crop Production	146	73	164	53	10	5	60%	40%	0.03	
Agricultural Livestock Production	71	30	114	37	8	6	33%	67%	0.05	
Metal Mining	293	188	1,003	18	58	60	82%	18%	0.06	
Oil and Gas Extraction	2,675	1,620	6,386	25	794	640	94%	6%	0.1	
Non-Fuel, Non-Metal Mining	3,771	2,193	10,806	21	532	548	94%	6%	0.05	
Textiles	1,284	911	4,002	19	278	271	86%	14%	0.07	
Lumber and Wood	3,260	2,181	11,336	17	834	759	85%	15%	0.07	
Wood Furniture and Fixtures	1,746	1,166	5,822	18	386	314	86%	14%	0.05	
Pulp and Paper	585	495	6,383	5	332	503	85%	15%	0.08	
Printing	2,445	1,589	5,100	29	434	378	87%	13%	0.07	
Inorganic Chemicals	1,092	700	5,654	12	386	421	74%	26%	0.07	
Plastic Resins and Fibers	779	545	4,964	9	320	429	84%	16%	0.09	
Pharmaceuticals	628	463	2,605	14	204	215	78%	22%	0.08	
Organic Chemicals	1,107	832	8,839	8	574	811	72%	28%	0.09	
Ag. Chem. Pesticide & Fertilizer	674	375	2,290	18	218	160	52%	48%	0.07	
Petroleum Refining	476	324	6,238	5	348	1,153	70%	31%	0.18	
Rubber and Plastic	3,870	2,313	8,651	27	834	685	88%	12%	0.08	
Stone, Clay, Glass and Concrete	3,625	2,214	13,144	17	838	933	90%	10%	0.07	
Iron and Steel	704	517	7,285	6	320	493	72%	28%	0.07	
Metal Castings	1,383	822	3,728	22	338	343	78%	22%	0.09	
Nonferrous Metals	561	358	3,340	10	258	446	89%	11%	0.13	
Metal Products	8,426	5,268	16,959	30	1,982	1,593	75%	25%	0.09	
Electronics and Computers	1,663	925	2,670	37	296	220	74%	26%	0.08	
Motor Vehicle Assembly	1,880	1,247	5,340	21	424	381	82%	18%	0.07	
Aerospace	791	549	2,756	17	258	239	62%	38%	0.09	
Shipbuilding and Repair	230	171	859	16	100	110	74%	26%	0.13	
Ground Transportation	4,991	3,316	13,160	23	796	662	0%	0%	0.05	
Water Transportation	263	166	406	39	42	33	82%	18%	0.08	
Air Transportation	436	242	669	39	72	65	74%	26%	0.1	
Fossil Fuel Electric Power	3,295	2,335	18,122	11	1,062	1,346	83%	17%	0.07	
Dry Cleaning	3,390	1,851	3,469	59	210	141	91%	9%	0.04	

* Transportation equipment cleaning sector not included because sector is not classified by SIC code and no compliance data are available.

Table 20: Two-Year Enforcement and Compliance Summary for Selected Industries									
A Industry Sector	B Facilities in Search	C Facilities Inspected	D Number of Inspections	E Facilities with 1 or More Violations		F Facilities with 1 or more Enforcement Actions		G Total Closed Enforcement Actions	H Enforcement to Inspection Rate
				Number	Percent*	Number	Percent*		
Agricultural Crop Production	146	38	65	10	26%	2	5%	1	0.02
Agricultural Livestock Production	71	8	16	6	75%	6	75%	5	0.31
Metal Mining	293	124	290	74	60%	28	23%	23	0.08
Oil and Gas Extraction	2,675	931	2,135	363	39%	546	59%	352	0.16
Non-Fuel, Non-Metal Mining	3,771	1,340	3,389	328	24%	234	17%	204	0.06
Textiles	1,284	630	1,256	220	35%	174	28%	145	0.12
Lumber and Wood	3,260	1,467	3,714	580	40%	380	26%	328	0.09
Wood Furniture and Fixtures	1,746	752	1,916	316	42%	182	24%	139	0.07
Pulp and Paper	585	379	1,837	238	63%	158	42%	185	0.1
Printing	2,445	855	1,699	359	42%	234	27%	162	0.1
Inorganic Chemicals	1,092	473	1,793	242	51%	172	36%	141	0.08
Plastic Resins and Fibers	779	411	1,652	215	52%	164	40%	161	0.1
Pharmaceuticals	628	288	828	155	54%	76	26%	62	0.07
Organic Chemicals	1,107	599	2,782	365	61%	264	44%	261	0.09
Agricultural Chemical Pesticide & Fertilizer	674	232	734	108	47%	60	26%	37	0.05
Petroleum Refining	476	240	1,738	191	80%	224	93%	447	0.26
Rubber and Plastic	3,870	1,443	2,992	641	44%	408	28%	313	0.1
Stone, Clay, Glass and Concrete	3,625	1,488	4,254	496	33%	388	26%	351	0.08
Iron and Steel	704	373	2,201	250	67%	144	39%	149	0.07
Metal Castings	1,383	495	1,153	302	61%	180	36%	172	0.15
Nonferrous Metals	561	223	965	150	67%	118	53%	159	0.16
Metal Products	8,426	2,908	5,704	1,728	59%	884	30%	588	0.1
Electronics and Computers	1,663	469	862	320	68%	140	30%	86	0.1
Motor Vehicle Assembly	1,880	816	1,897	410	50%	218	27%	167	0.09
Aerospace	791	329	854	179	54%	96	29%	69	0.08
Shipbuilding and Repair	230	100	295	63	63%	48	48%	35	0.12
Ground Transportation	4,991	2,059	4,696	490	24%	458	22%	327	0.07
Water Transportation	263	81	126	31	38%	6	7%	4	0.03
Air Transportation	436	112	216	52	46%	32	29%	18	0.08
Fossil Fuel Electric Power Generation	3,295	1,810	6,355	701	39%	520	29%	493	0.08
Dry Cleaning	3,390	785	1,212	238	30%	74	9%	50	0.04

*Percentages in Columns E and F are based on the number of facilities inspected (Column C). Percentages can exceed 100% because violations and actions can occur without a facility inspection.

* Transportation equipment cleaning sector not included because sector is not classified by SIC code and no compliance data are available.

Table 21: Five-Year Inspection and Enforcement Summary by Statute for Selected Industries

Industry Sector	Facilities Inspected	Total Inspections	Total Closed Enforcement Actions	Clean Air Act		Clean Water Act		RCRA		FIFRA/ISCA/EPCRA/Other	
				% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions
Agricultural Crop Production	73	164	5	61%	40%	0%	0%	36%	20%	3%	40%
Agricultural Livestock Production	30	114	6	48%	50%	0%	17%	49%	17%	3%	17%
Metal Mining	188	1,003	60	61%	52%	26%	43%	13%	3%	1%	2%
Oil and Gas Extraction	1,620	6,386	640	96%	93%	0%	1%	4%	6%	0%	0%
Non-Fuel, Non-Metal Mining	2,193	10,806	548	97%	98%	1%	1%	1%	1%	0%	0%
Textiles	911	4,002	271	74%	56%	13%	27%	13%	13%	1%	4%
Lumber and Wood	2,181	11,336	759	77%	73%	1%	2%	22%	24%	1%	2%
Wood Furniture and Fixtures	1,166	5,822	314	75%	74%	0%	1%	24%	24%	1%	1%
Pulp and Paper	495	6,383	503	68%	73%	24%	20%	7%	5%	1%	2%
Printing	1,589	5,100	378	65%	66%	0%	0%	35%	32%	1%	2%
Inorganic Chemicals	700	5,654	421	50%	50%	12%	13%	36%	28%	2%	10%
Plastic Resins and Fibers	545	4,964	429	51%	55%	19%	22%	29%	21%	2%	3%
Pharmaceuticals	463	2,605	215	48%	46%	6%	8%	44%	36%	2%	10%
Organic Chemicals	832	8,839	811	48%	48%	12%	15%	38%	30%	3%	7%
Agricultural Chemical Pesticide & Fertilizer	375	2,290	160	57%	31%	12%	9%	26%	21%	5%	39%
Petroleum Refining	324	6,238	1,153	63%	79%	12%	8%	24%	12%	1%	1%
Rubber and Plastic	2,313	8,651	685	69%	69%	1%	1%	29%	24%	1%	6%
Stone, Clay, Glass and Concrete	2,214	13,144	933	86%	87%	1%	1%	12%	10%	1%	2%
Iron and Steel	517	7,285	493	66%	62%	11%	14%	23%	21%	0%	3%
Metal Castings	822	3,728	343	64%	60%	2%	3%	33%	33%	1%	5%
Nonferrous Metals	358	3,340	446	65%	68%	7%	8%	27%	22%	1%	2%
Metal Products	5,268	16,959	1,593	45%	41%	2%	2%	52%	51%	1%	7%
Electronics and Computers	925	2,670	220	34%	16%	4%	4%	60%	67%	2%	13%
Motor Vehicle Assembly	1,247	5,340	381	61%	59%	1%	1%	37%	36%	0%	4%
Aerospace	549	2,756	239	48%	36%	3%	3%	48%	57%	0%	3%
Shipbuilding and Repair	171	859	110	58%	30%	5%	9%	36%	61%	1%	0%
Ground Transportation	3,316	13,160	662	78%	0%	1%	0%	21%	0%	0%	0%
Water Transportation	166	406	33	40%	33%	2%	0%	57%	67%	1%	0%
Air Transportation	242	669	65	31%	28%	2%	2%	67%	66%	0%	2%
Fossil Fuel Electric Power Generation	2,335	18,122	1,346	75%	85%	19%	9%	5%	4%	1%	2%
Dry Cleaning	1,851	3,469	141	36%	20%	0%	0%	64%	80%	0%	0%

* Transportation equipment cleaning sector not included because sector is not classified by SIC code and no compliance data are available.

Table 22: Two-Year Inspection and Enforcement Summary by Statute for Selected Industries											
Industry Sector	Facilities Inspected	Total Inspections	Total Closed Enforcement Actions	Clean Air Act		Clean Water Act		RCRA		FIFRA/TSCA/EPCRA/Other	
				% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions	% of Total Inspections	% of Total Actions
Agricultural Crop Production	38	65	1	59%	100%	0%	0%	37%	0%	5%	0%
Agricultural Livestock Production	8	16	5	81%	60%	0%	20%	19%	0%	0%	20%
Metal Mining	124	290	23	46%	61%	35%	39%	19%	0%	0%	0%
Oil and Gas Extraction	931	2,135	352	97%	97%	0%	1%	3%	2%	0%	0%
Non-Fuel, Non-Metal Mining	1,340	3,389	204	97%	99%	1%	1%	2%	1%	0%	1%
Textiles	630	1,256	145	71%	61%	16%	22%	13%	13%	0%	3%
Lumber and Wood	1,467	3,714	328	75%	75%	1%	1%	24%	22%	0%	2%
Wood Furniture and Fixtures	752	1,916	139	75%	85%	0%	0%	25%	14%	0%	1%
Pulp and Paper	379	1,837	185	64%	81%	28%	13%	7%	4%	0%	1%
Printing	855	1,699	162	64%	0%	0%	0%	35%	0%	1%	0%
Inorganic Chemicals	473	1,793	141	44%	56%	14%	12%	42%	25%	0%	7%
Plastic Resins and Fibers	411	1,652	161	50%	65%	21%	14%	29%	19%	0%	2%
Pharmaceuticals	288	828	62	44%	45%	7%	11%	49%	37%	0%	6%
Organic Chemicals	599	2,782	261	43%	52%	14%	13%	40%	31%	2%	4%
Agricultural Chemical Pesticide & Fertilizer	232	734	37	51%	38%	13%	14%	33%	24%	3%	24%
Petroleum Refining	240	1,738	447	52%	83%	16%	6%	32%	10%	0%	1%
Rubber and Plastic	1,443	2,992	313	69%	79%	2%	0%	29%	20%	0%	2%
Stone, Clay, Glass and Concrete	1,488	4,254	351	86%	85%	2%	2%	12%	10%	0%	2%
Iron and Steel	373	2,201	149	60%	70%	13%	9%	27%	17%	0%	4%
Metal Castings	495	1,153	172	58%	60%	3%	2%	38%	33%	0%	4%
Nonferrous Metals	223	965	159	59%	80%	8%	3%	32%	16%	0%	2%
Metal Products	2,908	5,704	588	43%	46%	3%	1%	54%	43%	0%	9%
Electronics and Computers	469	862	86	30%	12%	5%	5%	65%	63%	1%	21%
Motor Vehicle Assembly	816	1,897	167	57%	63%	2%	1%	41%	32%	0%	5%
Aerospace	329	854	69	46%	44%	4%	0%	50%	51%	0%	6%
Shipbuilding and Repair	100	295	35	59%	37%	6%	11%	35%	51%	0%	0%
Ground Transportation	2,059	4,696	327	75%	0%	1%	0%	24%	0%	0%	0%
Water Transportation	81	126	4	43%	50%	2%	0%	56%	50%	0%	0%
Air Transportation	112	216	18	29%	39%	1%	0%	69%	56%	0%	6%
Fossil Fuel Electric Power Generation	1,810	6,355	493	73%	87%	21%	8%	6%	3%	0%	2%
Dry Cleaning	785	1,212	50	37%	6%	0%	0%	63%	94%	0%	0%

* Transportation equipment cleaning sector not included because sector is not classified by SIC code and no compliance data are available.

Sector Facility Indexing Project -- Additional compliance information for the pulp and paper industry is available through EPA's Sector Facility Indexing Project (SFIP). This is a website that brings together environmental and other information from a number of data systems to produce facility-level profiles for five industry sectors (pulp manufacturing, petroleum refining, iron and steel production, primary nonferrous metal refining and smelting, and automobile assembly) and a subset of major federal facilities. SFIP information relates to compliance and inspection history, chemical releases and spills, demographics of the surrounding population and production. (Contact: SFIP hotline at 617-520-3015 or the website at <http://www.epa.gov/sfipmtn1/>)

VII.C. Review of Major Legal Actions

This section provides summary information about major cases that have affected this sector, and a list of Supplementary Environmental Projects (SEPs). SEPs are compliance agreements that reduce a facility's stipulated penalty in return for an environmental project that exceeds the value of the reduction. Often, these projects fund pollution prevention activities that can significantly reduce the future pollutant loadings of a facility.

This section discusses major legal cases and pending litigation within the organic chemical industry as well as supplemental environmental projects (SEPs) involving organic chemicals facilities. Information regarding major cases or pending litigation is available from the Office of Regulatory Enforcement.

VII.C.1. Review of Major Cases

Amspec Chemical Corporation. In March 2000, Region 2 issued an administrative consent order resolving the multi-media cases brought against this company under §313 of EPCRA and §§5 and 8 of TSCA. In addition to paying a \$47,245 penalty, Amspec will perform two SEPs, with an estimated value of over \$115,000. The first one consists of the installation and operation of equipment to recover some materials previously in the waste stream from the facility's manufacturing operations. The second SEP involves the company's purchase of equipment for the local city's Office of Emergency Management allowing it to more effectively respond to emergencies involving chemical substances.

Troy Chemical. In June 2000, Region 2 issued a final administrative order on consent to Troy Chemical. The agreement resolved a combined EPCRA §313 and TSCA §8 multi-media enforcement action involving the company's facility in Newark, New Jersey. Under the settlement, Troy will perform three separate SEPs with a combined worth of more than \$220,000, and will also pay a civil penalty of \$90,700. Troy will install equipment at its Newark

facility to reduce emissions of four listed chemical substances to both air (approximately 10,000 pounds annually) and water (more than 200,000 pounds annually). Troy had been cited for failure to submit TSCA-required Inventory Update Reports for five chemicals, and for under-reporting eleven others; and for failure to submit EPCRA-required reports for two chemicals. These violations occurred in the early 1990's.

Occidental and Olin Corporation. Region 2 entered a consent decree with Occidental (the successor to the Hooker Chemical Company) and Olin Corp. in October, 1999, resolving their liability for Superfund response costs incurred by the United States and the State of New York at the 102nd Street Landfill Site in Niagara Falls, New York. Both companies disposed of hazardous substances at the site. The consent decree called for the companies to reimburse EPA about \$6.87 million and New York approximately \$690,000 for past costs and interest. In conjunction with remedial work at the landfill valued at about \$44 million, pursuant to a 1991 unilateral administrative order issued by Region 2, the companies will have paid about 96% of the total site response costs. The decree also secured the companies' commitment to about \$700,000 in payment of natural resource damages and replacement projects for lost resources.

Shell Chemical Company. On July 19, 2000, EPA issued a Consent Agreement and Final Order (CAFO) in settlement of a complaint filed on September 20, 1999, that included a proposed penalty of \$27,500 (EPA Docket No. CAA-6-99-039-99), for violations of the Clean Air Act and the Louisiana State Implementation Plan. The facility failed to correctly set the counter (FQ948) which resulted in a spill on December 8, 1998, of 148 lbs of hydrochloric acid to flow out through the hatch top of a tank car in violation of the Louisiana Administrative Code: Title 33, Part III, Section 905. The facility agreed to pay a \$6,875 penalty and fund a Supplemental Environmental Project (SEP) in the amount of \$27,796. The SEP provides for the following equipment for the St. Charles Parish Department of Emergency Preparedness: a weather data unit; risk map emergency response software; and an emergency operation center phone system.

Westlake Petrochemicals Corporation. The U.S. Environmental Protection Agency Region 6 (EPA), in consultation with the Louisiana Department of Environmental Quality (LDEQ), issued a Consent Agreement and Final Order to Westlake Petrochemicals, for violations of federal and state regulations governing air emissions, the storage and handling of hazardous materials, and the use of toxic substances. Federal assessed penalties total \$76,458.

Clean Air Act alleged violations included the facility repeatedly failed to control the smoke from a flare and failed to report the violations, failure to properly label at least five pieces of leaking equipment which contributed to

illegal air emissions, and the facility was cited for improperly sampling and testing waste for benzene. Under the Emergency Planning and Community Right to Know Act, the facility had failed to report its use of chlorine dioxide from 1993 through 1997, a chemical which is required to be included in the annual Toxic Release Inventory report. The EPA also alleged that the company failed to accurately report its use of pyrolysis oil as required by the Toxic Substances Control Act. Under the Resource Conservation Recovery Act portion of the complaint, the facility is charged with improperly labeling and storing hazardous chemicals including mercury, chloroform and benzene, alleges that the company did not inspect areas where hazardous waste was stored to ensure that it was stored safely and that surrounding areas were not contaminated, and is charged with failing to train employees in safe handling of these materials and in correct emergency response procedures.

Westlake Petrochemical has agreed to install and operate air monitoring equipment at its fence-line to measure various hazardous constituents for 3 years. The facility will also maintain a web site, as a mechanism to provide data from its air monitoring equipment. In addition, Westlake Petrochemical has agreed to respond to local resident's concerns regarding data from the air monitoring equipment within 24 hours of their request. The estimated cost for implementation of the air monitoring project is \$568,500. Westlake Petrochemical has also agreed to perform a third party compliance audit of its Sulphur facility. This audit will include all applicable State and Federal programs for its facility.

E.I. Du Pont de Nemours. The Department of Justice and EPA reached a \$1.5 million settlement on August 1, 2000 with E.I. Du Pont de Nemours (DuPont) related to a catastrophic chemical release in eastern Kentucky that led to the evacuation of several communities surrounding the plant. DuPont is a large chemical manufacturer that failed to maintain a safe facility under the General Duty Clause of the Clean Air Act. The charge arose from DuPont's use of cast iron piping in a tank used to store oleum (sulfur trioxide dissolved in sulfuric acid), and the company's failure to inspect the piping. The oleum solution corroded the cast iron piping, which ultimately fractured leading to the release of 23,800 gallons of sulfuric acid into the air. DuPont agreed to pay a \$850,000 penalty and spend about \$650,000 to create a state of the art emergency notification system for a 10-county region of Kentucky.

U.S. v. Jack L. Aronowitz, et al. On January 31, 2000, the United States District Court for the Southern District of Florida, Fort Lauderdale Division, entered a judgment against Defendants, Jack L. Aronowitz and his company, Technical Chemicals and Products, Inc., and ordered them to pay past remaining costs of \$401,177, plus interest and enforcement costs in EPA's CERCLA Section 107 Cost Recovery action to recover costs incurred at the Lauderdale Chemical Warehouse Site. On April 26, 2000, this Court granted the United States' Request of Award of Trial and Related Expenses, holding

the defendants jointly and severally liable for an additional amount of \$348,383.

In 1994, EPA conducted a fund lead removal action at the Lauderdale Chemical Warehouse Site, in Ft. Lauderdale, Florida to remove chemicals that had been abandoned at the Site. From late 1977 through October 1992, this Site was used as a medical diagnostic chemical manufacturing plant, processing plant, and chemical storehouse. In a referral submitted to the Department of Justice in August of 1997, EPA requested a cost recovery suit be brought against the former owner/operators at the facility, Dr. Theodore Holstein, Jack L. Aronowitz and his company Technical Chemicals & Products, Inc., D.H. Blair & Co. and its President, Kenton Wood. EPA settled with D.H. Blair & Co. and Kenton Wood for \$80,000. EPA has also settled with Theodore Holstein for \$230,000. EPA then went to trial for two weeks before the U.S. District Court for the Southern District of Florida to seek a judgment that the remaining potentially responsible parties, Jack L. Aronowitz and his company, Technical Chemicals and Products, Inc., pay all the United States' outstanding costs in this case, plus the costs of the trial. On January 31, 2000 the Court found for the United States, and against the defendants who are ordered to pay the United States' outstanding costs of \$401,177, plus interest and enforcement costs.

US. v. B.P. Amoco, Des Moines TCE Site, Des Moines, Iowa. This Consent Decree entered into pursuant to Sections 106 and 107 of CERCLA provides for the settling defendants (BP Amoco PLC, Bayer Corporation, Chevron Chemical Company, Monsanto Company, and Shell Oil) to pay the United States \$2,513,808, plus interest. This amount represents the Settling Defendants' fair share of all past and estimates future response and oversight costs for Operable Units 2 and 4 (OU2/4) of the Des Moines TCE Site. EPA calculated the Settling Defendants' fair share based upon a Non-Binding Preliminary Allocation of Responsibility (NBAR) prepared in accordance with Section 122(e) (3) of CERCLA. This amount includes a settlement premium based on anticipated future work at the site. This amount exceeds EPA's outstanding costs, with interest, so the balance of the settlement amount will be placed in a Special Account to be used for future work at the Site, i.e., long-term operation and maintenance of already completed removal actions and institutional controls.

The other two identified potentially responsible parties, Dico, Inc. and its parent Titan Wheel International, which own and operate the Site, declined to participate in the settlement negotiations and are not parties to the Consent Decree.

VII.C.2. Supplementary Environmental Projects (SEPs)

SEPs are compliance agreements that reduce a facility's non-compliance

penalty in return for an environmental project that exceeds the value of the reduction. Often, these projects fund pollution prevention activities that can reduce the future pollutant loadings of a facility. Information on SEP cases can be accessed via the Internet at <http://www.epa.gov/compliance/resources/policies/civil/seps/index.html>.

Table 36 presents 25 examples of SEPs negotiated with facilities. The majority of SEPs were developed in Region VI (Arkansas, Louisiana, Oklahoma, and Texas).

The three most common types of SEPs undertaken by the organic chemical industry were process changes, control technology installations or improvements, and non process-related projects.

- Nine of the SEPs were associated with process changes. Projects have included the recirculation of wastewater for reuse, the enclosure of equipment that previously released pollutants to the environment, and the replacement of PCB-containing electrical transformers. The value of these projects ranged from \$22,280 to \$12,000,000.
- Five of the projects involved control technology. These include the installation of particulate matter filtration units, upgraded thermal oxidizers, and concrete containment structures. The value of these projects ranged from \$134,000 to \$1,000,000.
- Twelve of the projects were not process-related. One of these required a cleanup of contaminated soil, but most of the others involved funding of Local Emergency Planning Committees (LEPC) or other emergency response organizations. These SEPs supported LEPC conferences and emergency response groups with equipment. The value of projects ranged from \$3,000 to \$19,596.

Table 23: FY 1995-1999 Supplemental Environmental Projects Overview: Organic Chemical Industry

FY	General Information			Violation Information			Supplemental Environmental Project Information	
	Docket #	Company Name	State/ Region	Type	Assessed Penalty	SEP Cost to Company	SEP Category	SEP Description
1998	02-1997-0342	Buffalo Color Corporation	NY	CERCLA 103 EPCRA 304	\$12,364	\$19,596	Emergency planning and response	Purchase emergency response equipment for Buffalo Fire Department.
1998	06-1998-0151	Dow Chemical Company	TX	CERCLA 103	\$2,500	\$9,500	Emergency planning and response	Donate \$1,500 in equipment to LEPC and \$8,000 to Oklahoma LEPC regional conference.
1998	06-1997-0792	Formosa Plastics Corporation	LA	CERCLA 103	\$1,500	\$13,500	Emergency planning and response	Donate \$4,000 in equipment, \$5,500 to Oklahoma LEPC conference, and \$4,000 in assistance over two years to LEPC.
1998	02-1995-0171	Olin Corporation	NY	CERCLA 103 EPCRA 104	\$47,810	\$25,675	Emergency planning and response	Purchase emergency response equipment for Niagara County Health Department at a cost of \$26,439.
1998	06-1998-0744	Shell Chemical Company – Geismar Plant	LA	CERCLA 103	\$4,000	\$14,000	Emergency planning and response	Donate \$5,000 in equipment, \$5,000 to Lake Charles LEPC conference, and \$4,000 in assistance to LEPC.
1997	08-95-0131	Boulder Scientific Co.	CO	EPCRA 313	\$17,000	\$22,280	Pollution prevention	Purchase, install, and implement facility chemical tracking system (FCTS) to create and maintain central database to track chemical usage and inventories to support pollution prevention.
1997	06-97-0542	Condea Vista Company	LA	CERCLA 103	\$3,000	\$9,000	Emergency planning and preparedness	Donate \$2,000 in equipment, \$3,000 to Oklahoma LEPC regional conference, and \$4,000 in assistance over to years to LEPC.
1997	06-97-0212	Dow Chemical Company	TX	CERCLA 103	\$3,000	\$15,000	Emergency planning and preparedness	Donate \$5,000 to Oklahoma LEPC conference and \$10,000 for ICS training course.

Table 23: FY 1995-1999 Supplemental Environmental Projects Overview: Organic Chemical Industry (Continued)

FY	General Information			Violation Information			Supplemental Environmental Project Information	
	Docket #	Company Name	State/ Region	Type	Assessed Penalty	SEP Cost to Company	SEP Category	SEP Description
1997	10-92-0226	Kalama Chemical, Inc.	WA	CAA 112 RCRA 3002 RCRA 3004 RCRA 3005	\$370,000	\$1,094,338	Assessments and audits Pollution prevention Pollution reduction	Conduct pollution prevention audit and fugitive emissions audit; install regenerative thermal oxidizer, benzene tank tie-in, and toluene tank tie-in; upgrade carbon beds and install CEMS.
1997	06-97-0689	Mackenzie Corporation	LA	RCRA 3002 RCRA 3005	\$3,750	\$15,000	Environmental restoration and protection	Remediate contaminated soil area.
1997	06-97-0286	Schenectady International, Inc.	TX	RCRA 3005	\$7,000	\$140,185	Pollution prevention	Modify production tanks to significantly reduce working loss emissions of phenol – a hazardous air pollutant.
1997	06-92-0091	Texaco Chemical Co. (now known as Huntsman Petrochemical Co.)	TX	CAA 110 CERCLA 103 EPCRA 313 RCRA 3002 TSCA 15(1)(c)	\$300,000	\$945,000	Pollution prevention Pollution reduction	Institute a process change at PO/MTBE unit in Port Neches, TX, which involves installation of systems to treat propylene recovery column overheads.
1997	06-97-0720	WITCO Corporation	LA	CERCLA 103	\$4,000	\$14,000	Emergency planning and preparedness	Donate \$6,000 to Oklahoma LEPC regional conference, \$2,000 in assistance over one year, and \$4,000 for employee training on release reporting.
1996	07-95-0004	ALLCO Chemical Corporation	KS	TSCA 15	\$8,500	\$148,148	Pollution prevention Pollution reduction	Construction of a fully enclosed processing system, an auto make repackaging system and a dust control baghouse to reduce exposure to pyromellitic acid (PMA) powder.

Table 23: FY 1995-1999 Supplemental Environmental Projects Overview: Organic Chemical Industry (Continued)

FY	General Information			Violation Information			Supplemental Environmental Project Information	
	Docket #	Company Name	State/ Region	Type	Assessed Penalty	SEP Cost to Company	SEP Category	SEP Description
1996	06-96-0118	E.I. duPont de Nemours & Co.	TX	CERCLA 103	\$3,750	\$19,167	Emergency planning and preparedness	Donate equipment to LEPC, fund a LEPC conference, provide 2 years assistance to LEPC (\$4,000), and purchase pollution prevention equipment.
1996	06-96-0008	Olin Chemical	LA	CERCLA 103	\$200	\$7,200	Emergency planning and preparedness	Donate equipment to LEPC, Perform a hazards analysis of hazardous materials. Conduct an in-plant drill with LEPC, SERC and EPA.
1996	06-91-0106	PPG Industries, Inc.	LA	TSCA 15(1)(c)	\$8,182	\$324,318	Pollution prevention Pollution reduction	Change of heat transfer fluid to eliminate the source of inadvertently produced PCBs. Replace 69 PCB capacitors with non-PCB capacitors, and reclassify five PCB-contaminated transformers to non-PCB transformers.
1996	03-92-0432	Neville Chemical Company	PA	RCRA 3004 RCRA 3005 RCRA 3007 RCRA 3008	\$0	\$390,000	Pollution reduction	Install concrete containment structures for two non-hazardous waste oil storage tanks to prevent spillage.
1996	06-96-0207	WITCO Corporation	TX	CERCLA 103	\$1,250	\$3,000	Emergency planning and preparedness	Fund an LEPC regional conference.
1995	03-93-0108	Anzon, Inc.	PA	TSCA 16	\$57,800	\$198,000	Pollution reduction	Remove four operational PCB transformers from its Philadelphia facility (cost: \$68,000), improve, above regulatory requirements, the air fabric filtration system for antimony oxide particulate matter at its Loredo, TX facility (cost: \$134,000). Anzon also cleaned up PCB leaks at the Philadelphia facility.

Table 23: FY 1995-1999 Supplemental Environmental Projects Overview: Organic Chemical Industry (Continued)

FY	General Information			Violation Information			Supplemental Environmental Project Information	
	Docket #	Company Name	State/ Region	Type	Assessed Penalty	SEP Cost to Company	SEP Category	SEP Description
1995	02-94-0140	E.I. DuPont de Nemours & Co.	NJ	EPCRA 313	\$56,250	\$70,000	Pollution reduction	Modify the dinitrobenzene manufacturing process by installing automatic water flow controls. This will enable DuPont to reduce dinitrobenzene output in waste by up to 50,000 pounds per year. DuPont is required to provide status reports at six, twelve, and eighteen months.
1995	03-89-1618	General Chemical Corporation (Allied-Signal)	DE, PA	RCRA 3008	\$350,000	\$951,000	Pollution prevention	Reduce the release of pollutants to the environment by eliminating the current use of a sluceway where chemicals are treated and subsequently discharged into the Delaware River, and modify the current industrial process at the Marcus Hook manufacturing plant by recirculating and recycling the wastewater for process reuse.
1995	01-95-0060	Hampshire Chemical Corporation	NH	CERCLA 103(a) EPCRA 304	\$7,140	\$7,140	Emergency planning and preparedness	Donate computer equipment to LEPC.
1995	02-94-0260	Monsanto, The Chemical Group	NJ	EPCRA 313	\$5,100	\$1,000,000	Pollution reduction	Install a thermal oxidizer to destroy chloroethane.
1995	02-91-0208	Eastman Kodak	NY	CERCLA 104 RCRA 3002 RCRA 3004 RCRA 3005 RCRA 9003	\$5,000,000	\$12,000,000	Pollution prevention Pollution reduction	Modify in-process refrigeration systems; eliminate CFC usage; modify food grade oxidant process; reformulate film manufacturing process; and 2 CBI material substitution/process modification SEPs.

VIII. COMPLIANCE ACTIVITIES AND INITIATIVES

This section highlights the activities undertaken by this industry sector and public agencies to voluntarily improve the sector's environmental performance. These activities include those independently initiated by industrial trade associations. In this section, the notebook also contains a listing and description of national and regional trade associations.

VIII.A. Sector-related Environmental Programs and Activities

ChemAlliance

ChemAlliance is an internet-based source of regulatory information for the chemical industry. It is funded by EPA and is operated by a partnership of environmental professionals in academia, government and industry. It seeks to help the industry comply with environmental regulations by providing the following resources:

- Regular feature articles by ChemAlliance staff and guest authors, providing timely and informative views on issues of importance to its readers.
- Up-to-date information on the regulations affecting chemical manufacturers, and cost-effective strategies to insure compliance
- Regulatory and compliance tools for technical assistance providers and industry professionals alike
- Information about pollution prevention in the chemical industry, and why it is an important part of any compliance strategy.
- Fun tools for managing information and customizing ChemAlliance to meet users' needs.

ChemAlliance can be found at www.chemalliance.org.

New Jersey Chemical Industry Project

The U.S. Environmental Protection Agency's Industry Sector Policy Division is working with the New Jersey Department of Environmental Protection (NJ DEP), US EPA Region 2, and a stakeholder group of industry, environmental groups, and community representatives on a project with the batch chemical manufacturing industry in New Jersey. The New Jersey Chemical Industry Project is an effort to assess current environmental protection strategies on a sector basis and develop better approaches.

The project has identified and analyzed corporate decision-making factors (drivers and barriers) that affect environmental performance at batch process chemical manufacturing facilities in New Jersey. New environmental protection strategies are being tested with a small number of these facilities. These strategies have been designed to address key issues identified in the analysis of drivers and barriers. The issues relate to permitting, reporting, process changes to reduce emissions, voluntary performance programs, and other types of flexibility in exchange for better environmental results. The stakeholder process ensures that the expertise and perspectives of industry, environmental groups, and community members are included in developing and evaluating the new strategies. (Contact: Catherine Tunis at EPA's Office Policy, Economics, and Innovation at 202-260-2698 or Tunis.Catherine@epa.gov, or see the project's website at <http://www.epa.gov/sectors/sectors.html#chemical>.)

Green Chemistry Initiative

EPA's Green Chemistry Program promotes the research, development, and implementation of innovative chemical technologies that accomplish pollution prevention in both a scientifically-sound and cost-effective manner. To accomplish these goals, the Green Chemistry Program recognizes and supports chemical technologies that reduce or eliminate the use or generation of hazardous substances during the design, manufacture, and use of chemical products and processes. More specifically, the Green Chemistry Program supports fundamental research in the area of environmentally benign chemistry as well as a variety of educational activities, international activities, conferences and meetings, and tool development, all through voluntary partnerships with academia, industry, other government agencies, and non-government organizations. There are 45 companies, trade associations, scientific and research organizations, and other groups that are partners in the program. (Contact: Rich Engler at 202-564-8587 or engler.richard@epa.gov, or Carol Farris at 202-564-8554 or farris.carol@epa.gov in the Office of Prevention, Pesticides, and Toxic Substances, or see the website at www.epa.gov/greenchemistry/.)

Design for the Environment

The Design for the Environment (DfE) Program works with individual industry sectors to compare and improve the performance and human health and environmental risks and costs of existing and alternative products, processes, and practices. DfE partnership projects promote integrating cleaner, cheaper, and smarter solutions into everyday business practices. DfE has developed partnerships with industries directly downstream from the organic chemical industry, including detergent formulators, adhesive manufacturers, and ink manufacturers. (Contact: David Di Fiore at 202-260-3374 or difiore.david@epa.gov, or Mary Cushmac at 202-260-4443 or

cushmac.mary@epa.gov in the Office of Prevention, Pesticides, and Toxic Substances, or see the website at www.epa.gov/dfe/projects/formulat/.)

VIII.B. EPA Voluntary Programs

High Production Volume Challenge

As part of EPA's Chemical Right-to-Know Initiative, chemical producers and importers have been invited to provide basic toxicity information voluntarily on their high production volume (HPV) chemicals. HPV chemicals are those chemicals which are produced in or imported to the U.S. in amounts over 1 million pounds per year. The information generated through the Voluntary Challenge Program is made available to the public through the EPA website.

Chemical companies that participate in the voluntary program make commitments identifying the chemicals they will adopt and test, and the schedule of which chemicals they will begin to test in each year of the program. Following the guidance established by EPA, participating companies will assess the adequacy of existing data; design and submit test plans; provide test results as they are generated; and prepare summaries of the data characterizing each chemical.

The voluntary program uses the same tests, testing protocols, and basic information summary formats employed by the Screening Information Data Set (SIDS) program, a cooperative, international effort to secure basic toxicity information on HPV chemicals worldwide. Information prepared for this U.S. domestic program will be acceptable in the international effort as well. As of 2002, the program has been very successful; 403 companies have committed to providing health and environmental data on 2,011 chemicals. (For more information, see the website at www.epa.gov/opptintr/chemrtk/).

National Environmental Performance Track

The US EPA's National Environmental Performance Track Program is designed to motivate and reward top environmental performance. By encouraging a systematic approach to managing environmental responsibilities, taking extra steps to reduce and prevent pollution, and being good corporate neighbors, the program is rewarding companies that strive for environmental excellence. At the same time, many participating companies are finding that they are saving money and improving productivity. A number of organic chemical manufacturing facilities are participating in the Performance Track program. (Contact: Performance Track hotline at 888-339-PTRK or the website at www.epa.gov/performancectrack/.)

WasteWi\$e Program

The WasteWi\$e Program was started in 1994 by EPA's Office of Solid Waste and Emergency Response. The program is aimed at reducing municipal solid wastes by promoting waste minimization, recycling collection and the manufacturing and purchase of recycled products. As of 2001, the program had about 1,175 companies as members, including a number of major corporations. Members agree to identify and implement actions to reduce their solid wastes and must provide EPA with their waste reduction goals along with yearly progress reports. EPA in turn provides technical assistance to member companies and allows the use of the WasteWi\$e logo for promotional purposes. Over thirty chemical companies currently are members of WasteWi\$e. (Contact: Jeff Tumarkin at EPA's Office of Solid Waste and Emergency Response at (703) 308-8686 or Tumarkin.Jeff@epa.gov, or the WasteWi\$e Hotline at 800-EPA-WISE (372-9473) or www.epa.gov/wastewise.)

Project XL

Project XL, which stands for "eXcellence and Leadership," is a national pilot program that allows state and local governments, businesses and federal facilities to develop with EPA innovative strategies to test better or more cost-effective ways of achieving environmental and public health protection. In exchange, EPA will issue regulatory, program, policy, or procedural flexibilities to conduct the experiment. Under Project XL, private businesses, federal facilities, business sectors and state and local governments are conducting experiments that address the following eight Project XL selection criteria:

- produce superior environmental results beyond those that would have been achieved under current and reasonably anticipated future regulations or policies
- produce benefits such as cost savings, paperwork reduction, regulatory flexibility or other types of flexibility that serve as an incentive to both project sponsors and regulators
- supported by stakeholders
- achieve innovation/pollution prevention
- produce lessons or data that are transferable to other facilities
- demonstrate feasibility
- establish accountability through agreed upon methods of monitoring,

reporting, and evaluations

- avoid shifting the risk burden, i.e., do not create worker safety or environmental justice problems as a result of the experiment.

By 2001, three chemical companies (Crompton, Eastman Kodak, and PPG) had undertaken projects under Project XL. (For more information, contact Chris Knopes in the Office of Reinvention Programs at (202) 260-9298 or Knopes.Christopher@epa.gov, or the website at www.epa.gov/projectxl.)

Energy Star[®]

In 1991, EPA introduced Green Lights[®], a program designed for businesses and organizations to proactively combat pollution by installing energy efficient lighting technologies in their commercial and industrial buildings. In April 1995, Green Lights[®] expanded into Energy Star[®] Buildings—a strategy that optimizes whole-building energy-efficiency opportunities. The energy needed to run commercial and industrial buildings in the United States produces 19 percent of U.S. carbon dioxide emissions, 12 percent of nitrogen oxides, and 25 percent of sulfur dioxide, at a cost of \$110 billion a year. If implemented in every U.S. commercial and industrial building, the Energy Star[®] Buildings upgrade approach could prevent up to 35 percent of the emissions associated with these buildings and cut the nation's energy bill by up to \$25 billion annually.

The more than 7,000 participants include corporations, small businesses, universities, health care facilities, nonprofit organizations, school districts, and federal and local governments. Energy Star[®] has successfully delivered energy and cost savings across the country, saving businesses, organizations, and consumers more than \$5 billion a year. Over the past decade, Energy Star[®] has been a driving force behind the more widespread use of such technological innovations as LED traffic lights, efficient fluorescent lighting, power management systems for office equipment, and low standby energy use.

Manufacturers can become partners in Energy Star[®] by pledging to undertake the following steps:

- Measure, track, and benchmark their organization's energy performance by using tools such as those offered by Energy Star[®]
- Develop and implement a plan to improve energy performance in their facilities and operations by adopting the strategy provided by Energy Star[®]
- Educate their staff and the public about our partnership with Energy

Star[®], and highlight our achievements with the Energy Star label, where available.

(Contact: Energy Star Hotline, 1-888-STAR-YES (1-888-782-7937) or visit the website at <http://www.energystar.gov/default.shtml>.)

NICE³

The U.S. Department of Energy administers a grant program called The National Industrial Competitiveness through Energy, Environment, and Economics (NICE³). By providing grants of up to 50 percent of the total project cost, the program encourages industry to reduce industrial waste at its source and become more energy-efficient and cost-competitive through waste minimization efforts. Grants are used by industry to design, test, demonstrate, and assess the feasibility of new processes and/or equipment with the potential to reduce pollution and increase energy efficiency. The program is open to all industries; however, priority is given to proposals from participants in the chemicals, agriculture, aluminum, pulp and paper, glass, metal casting, mining, petroleum, and steel industries. (Contact: DOE's Golden Field Office at 303-275-4728, or see the website at www.oit.doe.gov/nice3.)

EPA Audit Policy

The U.S. Environmental Protection Agency (EPA) encourages companies with multiple facilities to take advantage of the Agency's Audit Policy (Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations, 65 Fed. Reg. 19618 (April 11, 2000)) to conduct audits and develop environmental compliance systems. The Audit Policy eliminates gravity-based penalties for companies that voluntarily discover, promptly disclose and expeditiously correct violations of federal environmental law. More information on EPA's Audit Policy can be obtained from the Web site at: <http://www.epa.gov/compliance/resources/policies/incentives/auditing/index.html>.

Small Business Compliance Policy

The Small Business Compliance Policy promotes environmental compliance among small businesses (those with 100 or fewer employees) by providing incentives to discover and correct environmental problems. EPA will eliminate or significantly reduce penalties for small businesses that voluntarily discover violations of environmental law and promptly disclose and correct them. A wide range of resources are available to help small businesses learn about environmental compliance and take advantage of the Small Business Compliance Policy. These resources include: training, checklists, compliance guides, mentoring programs, and other activities.

Businesses can find more information through links on the Web site:
<http://www.epa.gov/smallbusiness/>.

Compliance Assistance Clearinghouse

The National Environmental Compliance Assistance Clearinghouse is a Web-based clearinghouse designed to provide quick access to compliance assistance tools, contacts, and planned activities across EPA and other compliance assistance providers. The Clearinghouse also serves as a forum to collaborate and exchange information. The Clearinghouse provides links to compliance assistance activities, tools, or technical assistance that: 1) assist the regulated community in understanding and complying with environmental regulations; or 2) assist compliance assistance providers in helping the regulated community to comply with environmental regulations. The Clearinghouse Web site is <http://www.epa.gov/clearinghouse/>.

VIII.C. Trade Association/Industry Sponsored Activity

VIII.C.1. Environmental Programs

Responsible Care[®]

The Responsible Care[®] initiative of the American Chemistry Council requires all members and partners to continuously improve their health, safety, and environmental performance in a manner that is responsive to the public. Launched in 1988, the Responsible Care[®] concepts are now being applied in over 40 countries around the world. Responsible Care[®] is a comprehensive, performance-oriented initiative composed of the following ten elements:

- **Guiding principles.** The Responsible Care[®] Guiding Principles are commitments that detail ethical ways the chemistry industry can benefit society, the environment and the economy. Every member and partner company CEO must sign the Guiding Principles and commit their company to working toward the vision of no accidents, injuries, or harm to the environment.
- **Codes of management practices.** The Codes are environmental, health and safety guidelines that member and partner companies must implement. Individual codes reflect the following: community awareness and emergency response, pollution prevention, process safety, distribution, employee health and safety, and product stewardship.

- **Dialogue with the public.** With the help of environmentalists, educators, and health and safety specialists, we seek to identify and address public concerns.
- **Self-evaluation.** Each member and partner must annually report their progress toward implementing the Codes to help us direct our assistance efforts.
- **Measures of performance.** With specific performance measures, the industry and public can readily view the progress of Responsible Care[®].
- **Performance goals.** To measure individual progress, each member and partner must establish company-specific goals to be publicly reported each year.
- **Management systems verification.** This process provides members and partners with an independent review of the effectiveness of their systems for implementing Responsible Care.
- **Mutual assistance.** Company-to-company dialogue at all levels is one of the most effective methods of advancing Responsible Care[®]. Networking occurs in organized leadership groups, regional forums and via the Internet.
- **Partnership program.** We help companies who transport, store, or distribute chemicals to participate in Responsible Care[®].
- **Obligation of membership.** As council members and partners, all companies are required to participate in Responsible Care[®] and follow each of these requirements.

These elements cover all aspects of the chemical industry's operations, from research to manufacturing, distribution, transportation, sales and marketing, and to downstream users of chemical products. Through Responsible Care[®], Council members and partners gain insight from the public through, among other means, a national Public Advisory Panel and over 250 local Community Advisory Panels. This, coupled with the fact that participation in Responsible Care[®] is an obligation of membership with the Council, make this performance improvement initiative unique.

The Synthetic Organic Chemical Manufacturers Association (SOCMA), whose membership consists of smaller batch and custom chemical manufacturers with typically fewer than 50 employees and less than \$50 million in annual sales, also has mandated that its members comply with Responsible Care[®]. (Contact: American Chemistry Council, 703-741-5000or

<http://www.americanchemistry.com/>, or SOCMA at 202-721-4100 or www.socma.com.)

Green Chemistry Institute

The Green Chemistry Institute (GCI) is a non-profit organization founded in 1997 to promote Green Chemistry through research, education, information dissemination, conferences and symposia. GCI works across disciplines and academic, government and industry sectors to promote the development and implementation of science and technology to avoid the generation and production of hazardous wastes. GCI Board members are drawn from government, industry, academia and the National Laboratories to reflect a broad set of environmental interests and capabilities. GCI activities strive to discover, develop and deploy quantifiable new science and technology alternatives to existing chemical practice and achieve measurable declines in damage to human health and the environment. Green chemistry is a science-based approach to pollution prevention that has proven economically profitable to companies who have adopted greener technologies.

In January 2001, GCI entered into a partnership agreement with The American Chemical Society (ACS). ACS seeks to address global issues at the intersection of chemistry and the environment. The ACS believes that it is better to prevent the entry of chemical substances into the environment than to address their known and unknown consequences at a later date. The ACS has articulated its support of green chemistry in its statements on sustainability and environmental protection. The alliance between ACS and the Green Chemistry Institute affords an opportunity to reaffirm and extend the importance of green chemistry in pollution prevention. (Contact: Dr. Dennis L. Hjeresen, Director, at 202-872-4078, or see the ACS website at www.chemistry.org.)

Center for Waste Reduction Technologies

The Center for Waste Reduction Technologies is under the aegis of the American Institute of Chemical Engineers. The center coordinates collaborative research on innovative, non-proprietary technologies and organizes regular meetings to help its members reduce environmental impacts. The center focuses its resources on four areas: sustainability, source reduction, waste management, and remediation. (Contact: 212-591-7424 or www.aiche.org/cwrt.)

Global Environmental Management Initiative

The Global Environmental Management Initiative (GEMI) is made up of group of leading companies dedicated to fostering environmental excellence by business. GEMI promotes a worldwide business ethic for environmental

management and sustainable development, to improve the environmental performance of business through example and leadership. In 2001, GEMI's membership consisted of about 40 major corporations including Ashland, Dow Chemical, DuPont, Eastman Kodak, Koch Industries, and Occidental. (Contact: GEMI at 202-296-7449 or see the website at: www.gemi.org.)

ISO 14000

ISO 14000 is a series of internationally-accepted standards for environmental management. The series includes standards for environmental management systems (EMS), guidelines on conducting EMS audits, standards for auditor qualifications, and standards and guidance for conducting product lifecycle analysis. Standards for auditing and EMS were adopted in September 1996, while other elements of the ISO 14000 series are currently in draft form. While regulations and levels of environmental control vary from country to country, ISO 14000 attempts to provide a common standard for environmental management. The governing body for ISO 14000 is the International Organization for Standardization (ISO), a worldwide federation of over 110 country members based in Geneva, Switzerland. The American National Standards Institute (ANSI) is the United States representative to ISO. Information on ISO is available at the following Internet site: <http://www.iso.ch/iso/en/ISOOnline.openpage>.

VIII.C.2. Summary of Trade Associations**American Chemical Society**

1155 16th Street, NW
Washington, D.C. 20036
Phone: 202-872-4600
Fax: 202-872-4615
Internet: www.chemistry.org

Budget: \$192,000,000
Staff: 1,700
Members: 145,000

The American Chemical Society (ACS) has an educational and research focus. The ACS produces approximately thirty different industry periodicals and research journals, including *Environmental Science and Technology* and *Chemical Research in Toxicology*. In addition to publishing, the ACS presently conducts studies and surveys; legislation monitoring, analysis, and reporting; and operates a variety of educational programs. The ACS library and on-line information services are extensive. Available fee-based services include STN[®], which offers current and archival information from over 200 scientific, technical, business, and patent databases covering a broad range of scientific fields, including chemistry, engineering, life sciences, pharmaceuticals, biotechnology, regulatory compliance, patents, business. Founded in 1876, the ACS is presently comprised of 184 local groups and nearly 900 student groups nationwide.

American Chemistry Council

1300 Wilson Boulevard
Arlington, VA
Phone: 703-741-5000
Fax: 703-741-6000
Internet: <http://www.americanchemistry.com>

Members: 185
Staff: 246
Budget: \$36,000,000

A principal focus of the American Chemistry Council is on regulatory issues facing chemical manufacturers at the local, state, and federal levels. At its inception in 1872, the focus of the Council (formerly the Chemical Manufacturers Association) was on serving chemical manufacturers through research. Research is still ongoing at the Council. Member committees, task groups, and work groups routinely sponsor research and technical data collection that is then provided to the public in support of the Council's advocacy. Much additional research takes place through the CHEMSTAR[®] program. CHEMSTAR[®] consists of a variety of self-funded panels working on single-chemical research agendas. This research fits within the overall regulatory focus of the Council; CHEMSTAR[®] study results are provided to both the Council membership and regulatory agencies. Other initiatives include the Responsible Care[®] program, which includes six codes of

management practices designed to go beyond simple regulatory compliance. (This program is described earlier in Section VIII.C.1 of this document.) The Council also conducts workshops and technical symposia, promotes in-plant safety, operates a chemical emergency center (CHEMTREC[®]) which offers guidance in chemical emergency situations, and operates the Chemical Referral Center which provides chemical health and safety information to the public.

Ethylene Oxide Industry Council

c/o American Chemistry Council
1300 Wilson Boulevard
Arlington, VA
Phone: 703-741-5000

The Ethylene Oxide Industry Council (EOIC), founded in 1981, is an example of a panel group within the CHEMSTAR[®] program of the American Chemistry Council. The EOIC consists of ethylene oxide producers and users. Ethylene oxide is used in the manufacture of antifreeze and polyester fibers, and is widely used as a sterilizing agent. The EOIC develops scientific, technological, and economic data on the safe use and manufacture of ethylene oxide. Other duties include informing scientific and governmental organizations of the industry's views and interests.

Synthetic Organic Chemicals Manufacturers Association

1850 M St N.W., Suite 700
Washington, D.C. 20036
Phone: 202-721-4100
Fax: 202-296-8120
Internet: www.socma.org

Members: 250
Staff: 50

Synthetic Organic Chemicals Manufacturers Association (SOCMA) is the national trade association representing the legislative, regulatory, and commercial interests of some 300 companies that manufacture, distribute, or market organic chemicals. Most of SOCMA's members are batch and custom chemical manufacturers who are the highly innovative, entrepreneurial and customer-driven sector of the U.S. chemical industry. The majority of SOCMA's members are small businesses with annual sales of less than \$50 million and fewer than 50 employees. SOCMA assists its members in improving their environmental, safety, and health performance through various programs focusing on continuous improvement. A bi-monthly newsletter provides information on legislative and regulatory developments, as well as on education and training opportunities. SOCMA

holds an annual meeting in May and also sponsors INFORMEX, the largest custom chemical trade show in the U.S. In addition, SOCMA's Association Management Center includes 40 self-funded groups that focus on single chemical issues.

Consumer Specialties Products Association

900 17th St, NW, Suite 300
Washington, DC 20006
Phone: 202-872-8110
Fax: 202-872-8114
Internet: www.cspa.org

Members: 425
Staff: 31

This organization represents the manufacturers of such specialty chemical products as pesticides, cleaners, disinfectants, sanitizers, and polishes. The Consumer Specialties Products Association (CSPA) was founded in 1914. Today, the CSPA works with federal and state agencies and public representatives, to provide their membership with information on governmental activities and scientific developments. Some committees include: Government Affairs Advisory and Scientific Affairs. Publications include the quarterly *Chemical Times & Trends*, and the biweekly *Executive Newswatch*, an electronic newsletter summarizing legislative, regulatory and marketing developments.

Halogenated Solvents Industry Alliance

2001 L Street NW, Suite 506a
Washington, DC 20036
Tel: 202-775-0232
Fax: 202-833-0381
Internet: www.hsia.org

Members: 200
Budget: \$1,400,000

The goal of the Halogenated Solvents Industry Alliance (HSIA) is to develop programs to address problems involving halogenated solvents. The group is actively involved in legislative and regulatory issues affecting the industry, providing industry comments and information to agencies, and representing the industry at administrative hearings. The HSIA also sponsors working groups on issues specific to the solvent industry. Publications include the bimonthly newsletter *Halogenated Solvents Industry Alliance*, which includes a listing of publications available from the group and the monthly newsletter *Solvents Update*, which covers regulatory development and HSIA actions.

American Institute of Chemical Engineers

3 Park Avenue
New York, NY 10016
Phone: 212-591-7338
Fax: 212-591-8897
Internet: www.aiche.org

Members: 54,000
Staff: 103

The American Institute of Chemical Engineers (AIChE) is a professional society of chemical engineers. AIChE develops chemical engineering curricula and sponsors a variety of chemical study forums. AIChE is split into twelve divisions including the Environmental, Forest Products, Fuels and Petrochemical, and Safety and Health divisions. Approximately fourteen publications are produced by AIChE, such as the quarterly *Environmental Progress*, a periodic directory of members, and a variety of pamphlets. AIChE holds three conferences per year in various locations.

Color Pigments Manufacturers Association, Inc.

300 N. Washington St., Ste. 102
Alexandria, VA 22314
Phone: 703-684-4044
Fax: 703-684-1795

Members: 50
Staff: 5

The Color Pigments Manufacturers Association (CPMA) represents North American manufacturers of pigments and pigment ingredients (i.e., dyes). The CPMA also represents the affiliates of manufacturers of those products who happen to manufacture the product overseas. The CPMA represents its membership before government agencies. No further information is available at this time.

Fire Retardant Chemical Association

1681 Crown Avenue, Suite 202
Lancaster, PA 17601
Phone: 717-291-5616
Fax: 717-295-8455
Internet: www.fireretardants.org

Members: 42
Staff: 5

Chemical distributors/manufacturers active in promoting fire safety through chemical technology comprise the Fire Retardant Chemical Association (FRCA), founded in 1973. The FRCA serves as a forum for information dissemination on new developments, new applications, and current testing procedures for fire retardants and chemical fire safety products. Publications include the periodic *Fire Retardant Chemicals Association - Membership Directory* and the *Fire Retardant Chemical Association Proceedings*. Educational conferences are held semiannually.

National Paint and Coatings Association

1500 Rhode Island Avenue, NW
Washington, DC 20005
Phone: 202-462-6272
Fax: 202-462-8549
Internet: www.paint.org

Members: 700
Staff: 40

Founded in 1933, the National Paint and Coatings Association (NPCA) represents manufacturers of paints and chemical coatings as well as suppliers of paint manufacturing equipment and raw materials. NPCA is involved in government relations programs, statistical surveys, and industry research.

Committees include Labeling, Scientific, and Government Supply. The NPCA publishes an annual report, a periodic newsletter and trade directory, and a variety of guides.

Drug, Chemical, and Allied Trades Association

510 Route 130, Suite B1
East Windsor, NJ 08520
Phone: 609-448-1000
Fax: 609-448-1944

Members:500
Staff: 3
Budget: \$500,000

Founded in 1890, The Drug, Chemical & Allied Trades Association, Inc. (DCAT) is a business development association whose membership is comprised of companies that manufacture, distribute or provide services to the drug, chemical, nutritional and related industries. The Association provides services, programs and activities designed to support the business development objectives of its membership.

National Association of Chemical Recyclers

1875 Connecticut Ave., NW
Suite 1200
Washington, DC 20009
Phone: 202-986-8150
Fax: 202-986-2021

Members: 70
Staff: 3

National Association of Chemical Recyclers (NACR) founded in 1980, consists of recyclers of used industrial solvents. The organization promotes “responsible and intelligent” regulation and the beneficial reuse of waste. NACR monitors and reports on regulatory and legislative action affecting the practice of solvent recycling. NACR also compiles industry statistics. NACR publishes *Flashpoint* and a semiannual membership list. NACR holds a semiannual conference, usually in April or October.

IX. CONTACTS/ACKNOWLEDGMENTS/RESOURCE MATERIALS/BIBLIOGRAPHY

For further information on selected topics within the organic chemical industry a list of publications and contacts are provided below:

Contacts⁴

Name	Organization	Contact Information	Subject
Walter DeRieux	U.S. EPA, Office of Enforcement and Compliance Assistance	202-564-7067 derieux.walter@epa.gov	Organic chemical industry sector lead
Marcia Mia	U.S. EPA, Office of Enforcement and Compliance Assistance	202-564-7042 mia.marcia@epa.gov	Industrial processes and enforcement issues
Bruce Varner	U.S. EPA, Region V	312-886-6793 varner.bruce@epa.gov	Clean Air Act, air toxics
Carol Rawie	U.S. EPA, Office of Pollution Prevention and Toxics	202-564-8798 rawie.carol@epa.gov	Toxic Substances Control Act
Velu Senthil	U.S. EPA, Office of Pollution Prevention and Toxics	202-566-0749 senthil.velu@epa.gov	Toxics Release Inventory
Jim Seidel	EPA, National Enforcement Investigations Center	303-236-6147 seidel.jimmy@epa.gov	Industrial processes and regulatory requirements
Dickson Ozokwelu	U.S. Department of Energy, Office of Industrial Technology	202-586-8501 dickson.ozokwelu@ee.doe.gov	Technologies and processes with the potential for energy, environmental, and cost savings
Jeff Gunnulfson	Synthetic Organic Chemical Manufacturers Association	202-721-4198 gunnulfsonj@socma.org	Industrial processes and federal environmental requirements

⁴ Many of the contacts listed above have provided valuable background information and comments during development of this document. EPA appreciates this support and acknowledges that the individuals listed do not necessarily endorse all statements made within this notebook.

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