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Agency

Office of Pollution
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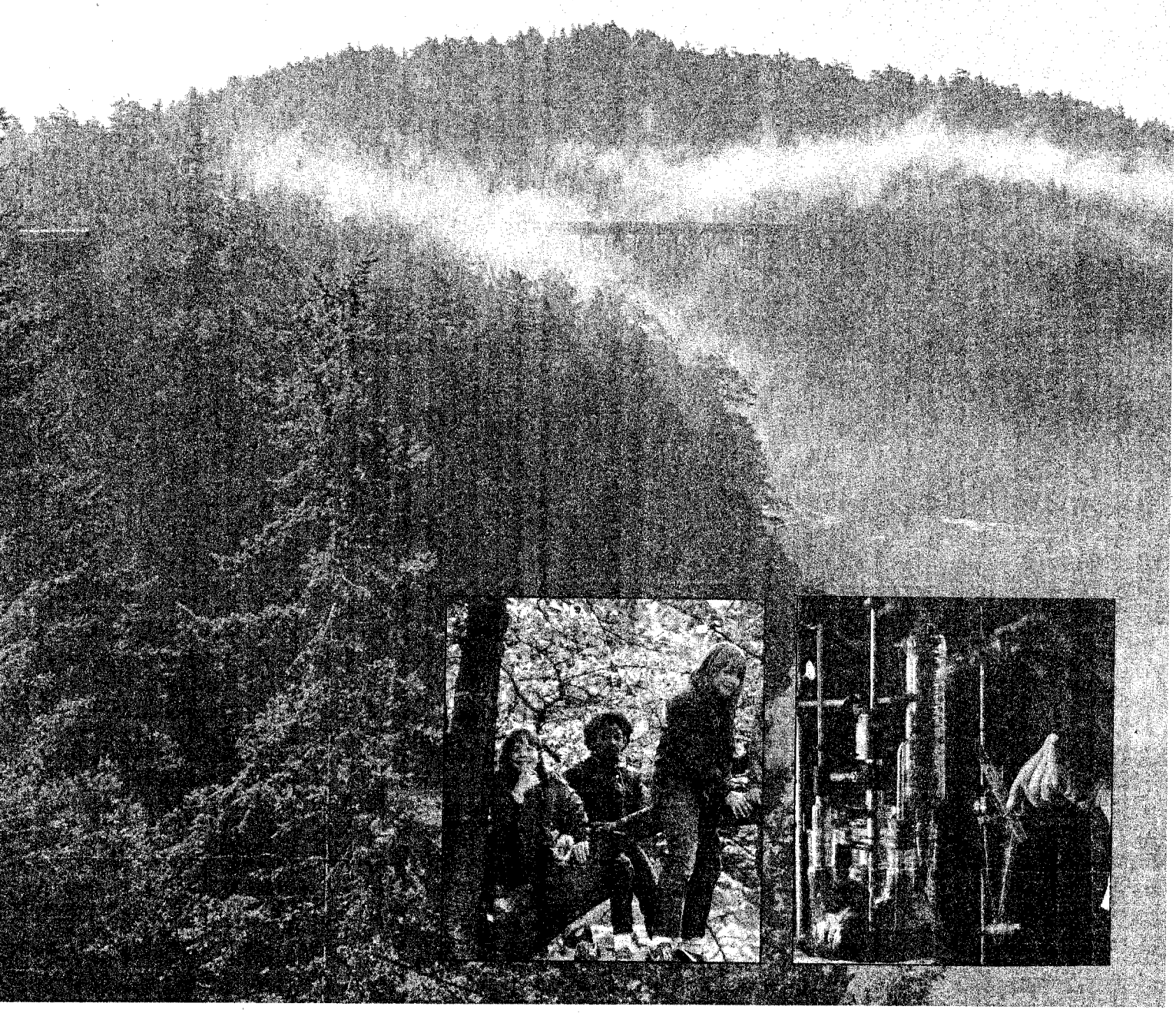
OPPT Annual Report

Fiscal Year 1996



OPPT Annual Report

fiscal year 1996

Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency

May 1997

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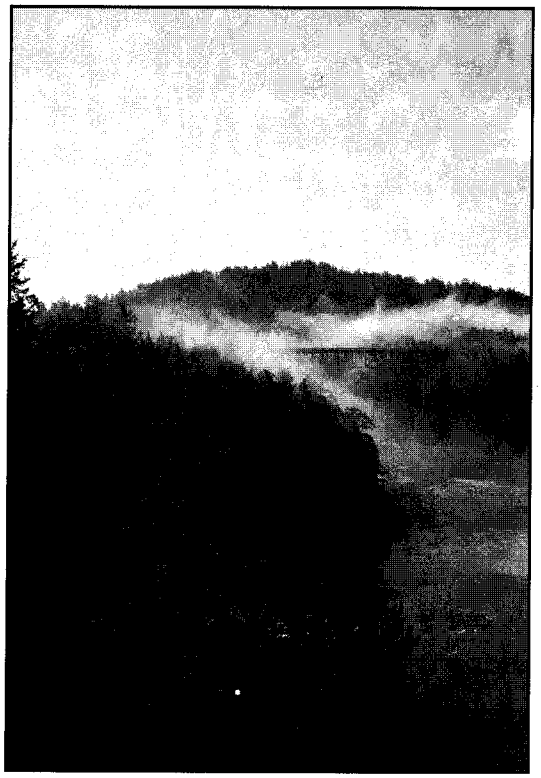
Office of Pollution Prevention and Toxics

FY96 annual report



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Foreword

"It was the best of times, it was the worst of times." Charles Dickens used this wonderful opening line in *A Tale of Two Cities,* but it could work as well for the *Office of Pollution Prevention and Toxics" FY96 Annual Report.* This past year saw two government-wide shutdowns and the longest, most serious budget crisis EPA has faced in its history. These two events dramatically affected our jobs and the work that we do. But despite these significant obstacles, FY96 also saw:

- The successful completion of the 33/50 Program, the Agency's first voluntary initiative.
- The expansion of the public's right-to-know about toxic chemicals — both by providing homeowners the opportunity to learn of known lead hazards before they buy a home and by proposing to broaden the breadth of reporting to the Toxics Release Inventory.
- Presentation of the first annual Green Chemistry Challenge Awards.

As these examples indicate, OPPT engages in much more than traditional regulatory activities.

Not one of these or our many other FY96 achievements would have been possible without the hard work and commitment I saw from the first-rate professionals in this Office, and our many partners and constituents who worked with us to carry out our mission. The personal dedication this year on the part of so many to meet tight deadlines and get the job done was truly commendable. As diverse a group as you will find anywhere in EPA, both with respect to culture and educational background — economists, engineers, scientists, policy analysts, administrative support staff, and others are all necessary to carry out OPPT's programs — we recognize the need to communicate openly and work together efficiently and effectively to reach our common goals. This philosophy extends to our partners outside the Office, evident in the innovative ways OPPT has found to use participatory and voluntary means, in addition to traditional regulatory approaches, to achieve environmental objectives. We did that this year, under the worst of circumstances, and I am proud to share with you our best efforts in the following pages.

This year's report, like our first one last year, highlights not only what we do but how we make a difference. The Introduction outlines our mission and guiding principles and how they help shape and direct our activities. Our achievements are described in the next four chapters, with background information and contact points for readers interested in obtaining more details.

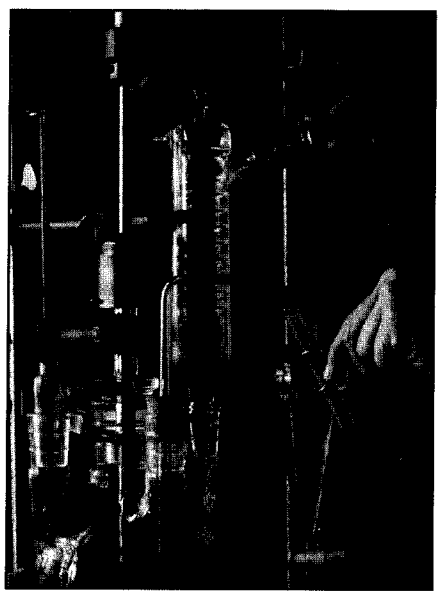
As we move toward the next century, our commitment to you to advance pollution prevention, promote the design and safe use of chemicals, and provide the information and tools necessary to make informed decisions is firm. Our efforts to better serve you and our many other stakeholders and customers will continue. By continually rethinking the way we do business, we are reinventing ourselves to provide improved service, to better measure and define success, and to expand our contribution toward a healthier environment.

William H. Sanders, III, Dr. P.H., P.E.
Director, Office of Pollution Prevention and Toxics

Introduction

EPA

Office of Pollution Prevention and Toxics FY96 Annual Report



The Environmental Protection Agency's (EPA's) Office of Pollution Prevention and Toxics (OPPT) works to protect the public from toxic chemicals — those already in the environment and marketplace, and those that manufacturers would like to put into commerce. This report provides descriptions of approximately 100 of our Fiscal Year 1996 activities. It also supplies sources for additional information and briefly previews OPPT's planned future activities. By furnishing this information, OPPT hopes not only to provide a reference tool for our customers, but also to demonstrate the many ways this Office protects the public and the environment.

For a number of years, OPPT has been developing innovative methods to protect public health and the environment from the harmful effects of toxic chemicals. As with other environmental programs, OPPT initially relied almost exclusively on issuing regulations to protect the public and the environment. This method has eliminated many of our worst pollution problems, but often is not flexible enough to deal with today's environmental challenges. Accordingly, OPPT has turned to more flexible, voluntary, and cooperative programs. These new approaches often provide faster results at lower costs than traditional regulatory methods. The aim is to better protect the public's health and decrease environmental pollution, while saving the regulated community time and money.

EPA's goal is to protect and improve public health and the environment, the keys to long-term sustainability and a high quality of life. OPPT directly supports this overall Agency goal by using both regulatory

Legislative Authorities

- **Toxic Substances Control Act (TSCA)**
- **Section 104 (I) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**
- **Section 313 and 322 of the Emergency Planning and Community Right-to-Know Act (EPCRA)**
- **Pollution Prevention Act (PPA)**
- **Residential Lead-Based Paint Hazard Reduction Act**
- **Asbestos School Hazard Abatement Act (ASHAA)**
- **Asbestos Hazard Emergency Response Act (AHERA)**

approaches (issuing rules) and nonregulatory approaches (voluntary agreements and partnerships, information, and other tools), acting within the legislative authorities and boundaries set by Congress.

OPPT's mission statement focuses on the Office's unique contributions. The mission of OPPT is comprised of four components (see box). Highlighted below are some examples of the environmental and public health benefits associated with carrying out each of the four parts of our mission.

Promote Pollution Prevention

The Pollution Prevention Act of 1990 made pollution prevention national policy. At EPA, pollution prevention means source reduction — preventing or reducing waste where it originates, at the source — including practices that conserve natural resources by reducing or eliminating pollutants through increased efficiency in the use of raw materials, energy, water, and land. OPPT works to promote pollution prevention both inside and outside the Agency. This is done in several ways, such as using voluntary pollution reduction programs, engaging in partnerships, providing technical assistance, funding demonstration projects and incorporating cost-effective pollution prevention alternatives into regulations and other initiatives.

Promote Safer Chemicals

A fundamental role of OPPT is to encourage the use of safer chemicals and processes in the basic operations of the industrial sector. Through a combination of regulatory and partnership efforts, OPPT can point to suc-

The Mission of OPPT

Promote pollution prevention as a principle of first choice to encourage society to care for and think about the environment in a more protective manner, preventing harm before it occurs.

Promote the design, development and application of less toxic chemicals, processes and technologies in the industrial sector of the economy.

Promote the reduction of risks, particularly due to exposure, and encourage responsible risk management practices throughout the life cycle of major chemicals of concern.

Promote public understanding of the risks of chemicals and public involvement in environmental decision-making through the development and dissemination of information on toxic chemicals.

cesses in pollution prevention, reduction of risk, environmental justice, and a greater understanding of the impact of chemicals and processes on the environment and public health.

All new chemicals or new genetically engineered microorganisms introduced into commerce must be evaluated by OPPT before they can be manufactured in this country or imported. This is the ultimate embodiment of pollution prevention, as it allows OPPT to prevent the introduction of unacceptably toxic chemicals into commerce before they can harm public health or the environment. Indeed, this program is the only opportunity the government has, at any level, for reviewing an industrial chemical prior to its entry into commerce. Without the new chemicals program, many harmful chemicals might make their way into commerce, causing unnecessary harm and potentially massive cleanup costs. This pre-commercial evaluation is also an avenue for the swift introduction of safer alternatives into the marketplace. It encourages the chemical industry at the early stage of design and pre-manufacture to produce and use safer chemicals.

All industrial chemicals currently in commerce in the United States, approximately 70,000, are captured on a list known as the Toxic Substances Control Act (TSCA) Inventory. OPPT has the enormous task of evaluating the list to identify chemicals that are of most concern, and using a variety of methods to manage potential risks from these chemicals. This effort helps reduce the public's exposure to harmful chemicals.

Promote Reduction of Risks

While preventing future pollution is central to the work of OPPT, large amounts of toxic chemicals are already present and persist in the environment from past activities. OPPT works to minimize exposure to such highly toxic substances as lead, asbestos, dioxin, and polychlorinated biphenyls (PCBs). These substances have been around for a long time, and their health risks are well documented and widely known. EPA will continue to manage them indefinitely.

Promote Public Understanding of Risks

OPPT is committed, as is the Agency as a whole, to providing understandable, accessible, and complete information on chemical risks to the broadest audience possible. OPPT believes that an informed public is better able to make responsible decisions about protecting itself and the environment. By providing the public with the necessary information, the greatest environmental benefit will be achieved at the least cost and without resorting to expensive regulations.

Guiding Principles of OPPT

As OPPT carries out the four parts of its mission, several principles overlay many of its activities. These include an increased focus on: 1) developing voluntary partnerships; 2) working cooperatively with customers (interested/affected parties) to further environmental protection; 3) protecting children and other vulnerable populations from environmental risks; and 4) targeting solutions to specific situations instead of trying to come up with a "one-size-fits-all" answer.

Voluntary Partnerships

While the command and control techniques of environmental regulation have served this country well in reducing some of the most severe environmental threats, today's environmental challenges and societal conditions invite the use of more cooperative, sophisticated and voluntary approaches as well. OPPT and other EPA offices now engage in many voluntary activities with a wide range of participants — industry, state and local governments, the business community, and academia — to prevent pollution and achieve environmental improvement.

Working Cooperatively

In this spirit of increased cooperation, OPPT has intensified efforts to communicate with customers who have an interest in the issue at hand. While the focus previously was on chemical manufacturers, there is now wide recognition that our customers also include environmental and labor groups, other government organizations, industries which use toxic chemicals, and the public at large. All these parties are concerned about the issues OPPT deals with, and their input can improve the decisions EPA makes.

OPPT is continuing efforts to promote environmentally preferable choices in the design, manufacture, and stewardship of chemicals. The Office is engaging environmental and labor groups in dialogue about various programs to ensure that their needs are understood and met. OPPT is also working with other government agencies to ensure that the federal government coordinates its programs, and that states, tribes, and local communities have the information they need to make informed choices.

Protecting Children

In assessing risk, it has become increasingly evident that some populations are more vulnerable to the effects of toxic substances than others. Children are known to be at higher risk for several reasons. Their neurological and repro-

ductive systems are potentially more susceptible to toxic chemicals; they are potentially exposed to larger amounts of toxic chemicals because of the large amounts of food and drink they take in compared to their body weight; and their behavior, such as playing outside and mouthing objects, can lead to greater exposure. OPPT has taken many steps to reduce children's environmental health risks, and has expanded the information available to the public — an important tool for parents.

Targeting Solutions

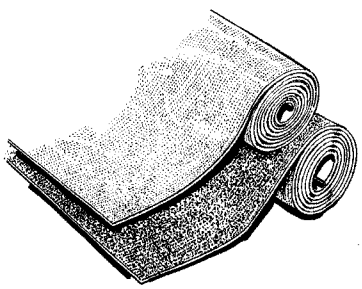
OPPT is expanding the traditional chemical-by-chemical approach to focus on individual facilities, a whole industry sector, or the environmental problems faced by an entire community, as appropriate. Though a chemical approach has value in many situations, focusing on facilities, industries, and communities allows us to tailor environmental solutions to a given setting.

The following four chapters, corresponding to the four mission areas, describe the activities and accomplishments of this Office in Fiscal Year 1996. Projects are presented in alphabetic order in the mission area to which they primarily belong. For projects with overlapping missions, icons indicate the other mission areas that they address. For each project, a contact/phone number is provided for additional information.

Promoting Pollution Prevention

Promote pollution prevention as a principle of first choice to encourage society to care for and think about the environment in a more protective manner, preventing harm before it occurs.

Carpet Dialogue Forum and The Technical Evaluation Panel



The Carpet Policy Dialogue (with representatives of government, industry, and other interested parties) came together voluntarily to reduce total volatile organic compound (TVOC) emissions associated with new carpet installation.

In 1990, EPA received a citizen's petition under Section 21 of TSCA from Local 2050 of the National Federation of Federal Employees. The petition focused attention on employee concerns about a variety of health reports claimed to be related to emissions from newly installed carpets. The Carpet Policy Dialogue was created as a result. Participants developed a brochure to provide the interested public with information about carpet emissions and indoor air quality. In addition, the three carpet product industries agreed to a voluntary testing program of TVOCs in their products.

Several initiatives grew out of this project. The Carpet and Rug Institute has completed the TVOC testing of carpets committed to in the Carpet dialogue and has implemented its "green tag" product stewardship effort on carpet to encourage production of lower emitting carpets. The Carpet Cushion Council tested TVOC emissions from new carpet cushion products. Currently underway is a second phase of testing by the Carpet Cushion Council which includes an expanded evaluation of the differences in the emissions from carpet cushions manufactured from different materials at different locations. The Floor Covering Adhesive Manufacturers Committee examined multipurpose and pressure sensitive adhesives and considered both traditional and low emitting adhesives.

As a result of these tests received in FY96, EPA concluded that TVOC emissions from solvent-based multipurpose adhesives were much higher than emissions from any other type of adhesive (multipurpose solvent-free, pressure sensitive solvent-based, and pressure sensitive solvent-free). As part of its follow-up, the Office is implementing a voluntary program to encourage development of lower emitting carpet adhesives. For more information, contact: Charlie Auer, (202) 260-3749.

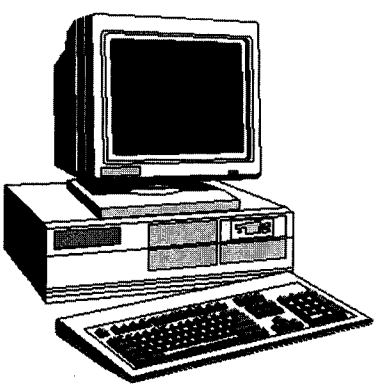
Common Sense Initiative

OPPT staff have represented the Office and its interests in all sectors of the EPA Common Sense Initiative (CSI), launched by Administrator Carol Browner two years ago to identify "cleaner, cheaper and smarter" approaches to environmental protection in partnership with industry, the environmental community, and others. In addition to heading the Common Sense Initiative's

computers and electronics sector (see next project below), OPPT staff and initiatives have played important roles in all CSI sectors. In fact, pollution prevention and reporting reform have become two of the most prominent themes among the projects proposed by the six CSI sectors in the past year. The metal finishing CSI sector intends to test a "zero-discharge" or closed loop system for various plating lines. It has also begun a chrome plating pollution prevention (P2) project which would apply low-cost technologies to bring companies into compliance with Maximum Achievable Control Technology (MACT) standards.

The CSI printing sector is another sector with two strong prevention activities: multimedia flexible permitting and the New York Education project, which would incorporate P2 principles into the operations of community printing establishments. OPPT staff also support the CSI auto assembly sector, whose auto life-cycle management/partnerships initiative will utilize supplier/producer relationships to improve environmental stewardship in an economically efficient manner. Further, major OPPT initiatives like International Standards Organization (ISO) 14000, facility identification initiative, and environmental accounting are being pursued in several sectors. For more information, contact: John Cross, (202) 260-3557.

Common Sense Initiative: Computer and Electronics Subcommittee



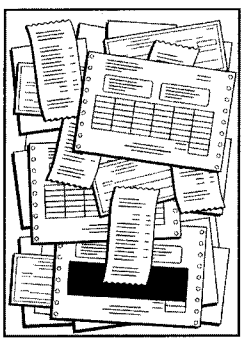
A major purpose of the EPA Common Sense Initiative is to examine how industry can increase its recycling activities and minimize pollution. OPPT leads the Computer and Electronics Subcommittee, which has focused on providing these industries with needed pollution prevention information.

The Common Sense Initiative was undertaken so that EPA and affected groups could examine opportunities for environmental protection by industrial sectors rather than by individual facility or chemical. OPPT is responsible for the computer and electronics sector. In December, 1994, the EPA Administrator appointed a diverse membership of 26 to the computer and electronics subcommittee. Members have examined regulations, technology, pollution prevention, and other factors important to protecting the environment.

In response to the subcommittee's recommendation, EPA offices are cooperating in developing a document with policy interpretations and guidance materials related to recycling. The goal is to inform industrial facilities about exactly what they need to do when they undertake activities to prevent pollution and to recycle waste material. One goal of the Common Sense Initiative is to remove barriers that hinder industry from taking on such activities. For further assistance, industrial facilities will be able to use EPA's regulatory database to easily see which regulations apply to their pollution prevention activities, again encouraging them to tackle recycling and other

pollution prevention activities. For more information, contact: John Bowser, (202) 260-1771; John Alter, (202) 260-4315.

Environmental Accounting Project



Working with industry, this project provides businesses with information on costs and benefits of using pollution prevention (P2) measures as a business tool.

The Environmental Accounting Project began in 1992 as a means of encouraging businesses to understand the full spectrum of their environmental costs, including costs of waste disposal. Stakeholders believed that industries would be more willing to adopt pollution prevention measures when they could clearly see the benefits, especially monetary benefits. By making the costs visible, business managers could use them in decisionmaking. At a stakeholders meeting in 1993, an action agenda was developed for the Environmental Accounting Project. The project has carried out numerous activities to help individual businesses analyze their pollution costs and decrease their amounts of pollution.

These activities include: a network with more than 650 members; several publications describing how to use environmental accounting as a business management tool; publication of case studies; and development of P2/FINANCE, a software tool designed to help companies incorporate environmental costs into their capital budgeting decisions. There are plans in the future to upgrade P2/FINANCE; publish information about estimating potential environmental liabilities; and develop workshops and courses to publicize the techniques and benefits of environmental accounting. For more information, contact: Holly Elwood, (202) 260-4362; Susan McLaughlin, (202) 260-3844.

Environmental Justice through Pollution Prevention Grants

By competitively funding pollution prevention activities in disadvantaged and minority communities, OPPT hopes to reduce environmental risks in areas often ignored.

In a continuing effort to promote three of EPA's highest priorities—pollution prevention, environmental justice, and community-based environmental protection—OPPT administered the second round of grants under the Environmental Justice through Pollution Prevention grants program. Environmental justice refers to the fair treatment of all people, regardless of race, culture, income, education, and other characteristics, with respect to environmental laws, regulations, and policies. Pollution prevention activities can help reduce environmental risks in disadvantaged and minority communities; and promote private/public partnerships.

In cooperation with EPA's regional offices, 11 grants were awarded in economically disadvantaged and minority commu-

nities to fund such activities as training, research surveys, and development of non-regulatory pollution prevention strategies. As examples, OPPT will work with the Korean Drycleaner's Association to promote a wet-cleaning process as a viable commercial alternative to dry-cleaning with hazardous chemicals. OPPT has provided funding to the Tulalip Tribe of Washington State to develop a model Tribal Environmental Policy Act, which can serve as a model for other tribal governments. For more information, contact Chen Wen, (202) 260-4109.

Environmentally Preferable Purchasing

This project provides purchasers with environmental information to be used in their decision making process. The pilot involves the Federal Government's purchase of cleaning products.

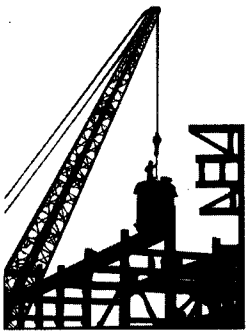
The purpose of this project is to encourage purchasers for federal agencies to choose products that are less harmful to the environment. To accomplish this task, purchasers need comparative information on the environmental and other properties of various categories of products, such as cleaning products. The project began in 1993, when President Clinton issued Executive Order 12873, which required EPA to propose ways that federal purchasers could consider environmental characteristics in their purchasing decisions. EPA's approach to fulfilling this mandate was to develop general guidance and to implement a series of pilot products on specific product categories to establish more detailed guidance for federal purchasers. The first pilot project, focused on cleaning products, became a collaborative effort among EPA, the General Services Administration (GSA) and the Federal Trade Commission (FTC).

In February, 1996, the results of this pilot were presented as a matrix in the GSA Commercial Cleaning Supplies catalogue, which described seven environmental attributes and the cleaning properties of cleaning products. The matrix is being widely distributed and publicized. During 1997, the collaborating agencies will evaluate the success of the pilot project in changing purchasing behavior. In a second pilot project, OPPT will develop comparative environmental information for latex paints. For more information, contact: Conrad Flessner, (202) 260-3918.

Environmentally Preferable Purchasing: Construction Pilot Project

OPPT is working with the Department of Defense to pilot a project examining how to renovate parking lots in an environmentally preferable manner.

The Department of Defense has committed to the Construction Pilot Project which examines environmental preferability within the context of exterior (e.g., parking lots) renovations in the metropolitan Washington area. This pilot focuses on modifying the procurement process in order to foster consideration of environ-



mental preferability. In July, the pilot team published a Draft Request for Proposal which reflects a price differential incentive for the contractor selected for the renovations to identify and use products that are environmentally preferable. The lessons learned and product information obtained from this pilot will be adapted for use in much larger-scale renovations currently underway in the Pentagon. Thus, the positive spill-over effect of the smaller-scale parking lot pilot will be tremendous. For more information, contact: Ruth Heikkinen, (202) 260-1803.

Environmental Technology Initiative (ETI) for Chemicals

Under this initiative OPPT encourages industry to reduce risks from specified classes of chemicals or use sectors, primarily through use of safer chemicals and technologies.

The primary goal of the ETI for Chemicals is to reduce risks to human health and the environment. Toward this end, the program pursues two key strategies: One is to recognize and encourage the introduction of safer new chemicals and technologies; the other is to adopt risk management practices that focus on a class of chemicals or a particular use sector.

In 1996, the ETI for Chemicals launched three major projects with industry. In July, the Agency entered into a partnership with Union Carbide and its future customers covering a new class of surfactants that significantly lowers environmental risks and furthers pollution prevention goals. A voluntary agreement governing risk management under the partnership includes provisions on enhanced product stewardship and measures of success. As part of a second initiative, the program has worked with isocyanate manufacturers and related parties to explore ways to minimize worker exposure to isocyanates in spray coating operations.

In November, the Agency formed a second partnership with the Brominated Flame Retardant Industry Panel to look for pollution prevention and risk reduction opportunities within the flame retardant industry sector. Work is expected to continue with these three groups and expand to other chemical/use categories.

The ETI for Chemicals approach represents a new model for chemical risk management in OPPT, one based on flexibility and results, which would replace or supplement traditional chemical-by-chemical regulation, as appropriate. For more information, contact: Ken Moss, (202) 260-1096.

EPA Voluntary Standards Network and the ISO 14000 Environmental Management Standards

The Voluntary Standards Network, housed in OPPT, is the Agency's principal mechanism for coordinating all activities relating to voluntary standards. Established in 1993 by Carol Browner, the Network has grown to over 130 Agency members including lead Standards Coordinators for each program office and region. The increasing Agency involvement in voluntary standards, including ISO 14000, reflects the concerns and interests of stakeholder groups.

Two major events have spurred a recent trend favoring the use of voluntary standards. First, the Environmental Management System (EMS) standards and Auditing standards (ISO 14001 and 14010 respectively) were finalized by international consensus. It paves the way toward organization implementation of such systems and the related potential for improved compliance, pollution prevention and continuous improvement — areas that an EMS may address and areas that the Agency is actively exploring. Second, the National Technology Transfer and Advancement Act (NTTAA) together with the guidance of OMB Circular A-119, require that federal agencies use voluntary standards in their activities and participate in their development. This statute compels Agency participation and activity with ISO 14000 and other voluntary standards.

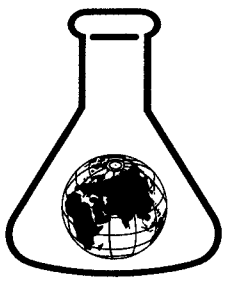
The Network is becoming increasingly involved with the following: encouraging pollution prevention and regulatory compliance within an EMS and audit approach; promoting the involvement of NGOs and SMEs to the standards development and standards implementation process; investigating risk management and lender criteria issues potentially associated with the insurance and financial services industry; and participating in the development of a credible private sector EMS registration process.

The Network also interacts with other groups interested in the relationship between environmental protection, performance and ISO 14000. The Network is working with an OECA Task Force as well as the Multi-State Working Group in the area of performance metrics development to evaluate this relationship consistently across projects and pilots. A workgroup within the National Pollution Prevention Roundtable is also interested in the relationship of an EMS and P2 as well as the issue of performance measurement and evaluation. Finally, EPA serves with DOE as co-chairs in an ISO 14000 workgroup within the Inter-Agency Committee on Standards Policy (ICSP). This workgroup is focusing on the role of the federal government with regard to implementation or integration of an EMS; providing technical assistance; procurement; and performance indicators.

The Network coordinates the development of Agency position statements on all of the ISO 14000 standards including eco-labeling and life cycle assessment standards. It is also organizing an ISO awareness, activities update and issue-raising

conference for EPA Headquarters with the Office of the Administrator Reinvention Team, the Office of Water and the Office of Solid Waste and Emergency Response. The Network has two facts sheets available through the Pollution Prevention Information Clearinghouse (PPIC). For copies of the fact sheets, contact: PPIC, (202) 260-1023. For more information on ISO and the Network contact: Mary McKiel, (202) 260-3584.

Green Chemistry



The goal of the Green Chemistry Program is to foster the use of innovative chemical methods that accomplish pollution prevention in both a scientifically-sound and cost-effective manner through voluntary partnerships.

The Green Chemistry Program recognizes and promotes chemical methods that reduce or eliminate the use or generation of toxic substances during the design, manufacture, and use of chemical products and processes and that have broad application in industry. The program also supports research in the area of environmentally benign chemistry and promotes partnerships with industry in developing green chemistry technologies. For more information, contact: Tracy Williamson, (202) 260-3960.

Green Chemistry Challenge

The Green Chemistry Challenge was announced by President Clinton on March 16, 1995 as part of the Reinventing Environmental Regulations Initiative to "promote pollution prevention and industrial ecology through a new EPA Design for the Environment partnership with the chemical industry."

The Green Chemistry Challenge both supports basic research through grants and recognizes outstanding results. Two major activities that the program supports are: 1) development and use of alternative solvents that do not contribute to air pollution, and 2) the design of chemicals that reduce the potential for accidents from explosion or fires. The Green Chemistry Challenge uses an awards program to recognize outstanding accomplishments in chemistry that can lead to substantial progress in preventing pollution. In 1996, the following received Green Chemistry awards:

- Monsanto Corporation, for creating a new process to manufacture the widely used consumer herbicide, Roundup®;
- The Dow Chemical Company, for finding a replacement for CFCs and other volatile organic compounds used in the manufacture of foam products.
- Rohm and Haas Corporation, for designing its product "Sea-Nine" as a safer marine anti-foulant for boat and ship hulls.

- Donlar Corporation, for its development of polyaspartates, a new class of less toxic, biodegradable polymers.
- Professor Mark T. Holtzapple at Texas A&M University, for his research in using agricultural wastes (biomass) in a wide variety of products, including animal feed, fuels, and high value chemicals.

For more information, contact: Tracy Williamson, (202) 260-3960.

Green Chemistry Curriculum Development

OPPT supports a variety of educational efforts that include the development of materials and courses to assist in teaching chemistry students and professional chemists the concepts of green chemistry and pollution prevention.

The chemical industry is discovering that when professional chemists understand pollution prevention concepts, they can identify, develop, and implement technologies that prevent pollution and save companies money. For more information, contact: Paul Anastas, (202) 260-2257.

Interagency Partnerships and Industry-University - Government Partnerships

EPA is working with other proponents of Green Chemistry to further advance the goals of the program.

The Green Chemistry Program has established several partnerships with other groups that are promoting pollution prevention through Green Chemistry. Within the federal government, EPA has cooperated with the National Science Foundation and with Los Alamos National Laboratory to support green chemistry research. Outside the federal government, the Green Chemistry Program provides support to several industry/university/government consortia that are seeking ways to reduce the use and emissions of toxic chemicals using green chemistry. For more information, contact: Paul Anastas, (202) 260-2257.

Media Association Pollution Prevention Forum

This project provides a way for state environmental officials from air, water, and solid waste programs to share ideas about integrating pollution prevention and multimedia concerns into their programs.

In 1996, OPPT established this forum to enable senior state environmental officials who direct, air, water, waste and toxic programs to share ideas about integrating P2 and multi-media concerns into their programs. This ad hoc group met twice in 1996, and will continue to meet periodically to examine opportunities for incorporating cross-media, multi-media pollution prevention concepts into environmental management practices. This group is EPA's only forum that brings together senior state officials from programs representing all the environmental media. For more information, contact: Lena Hann Ferris, (202) 260-2237.

OECD-EPA Harmonized Test Guidelines

Internationally, differences in test guidelines lead to unnecessary testing of chemicals in world commerce. OPPT is working with the Office of Pesticide Programs (OPP) and the Organization for Economic Cooperation and Development (OECD) to harmonize test guidelines, which will reduce non-tariff trade barriers.

Harmonization creates testing guidelines that are consistent between program offices and OECD member countries. Once guidelines are harmonized, test results are shared between offices and OECD member countries which reduces unnecessary testing of chemicals in world commerce and reduces non-tariff trade barriers. The project harmonizes existing OPPT and OPP guidelines and then harmonizes these with OECD. Ecotoxicology guidelines were reviewed by the Scientific Advisory Panel (SAP) in May 1996, and health effects guidelines were reviewed in October, 1996. Both are being revised in light of SAP comments. Already 19 ecotoxicology guidelines have been harmonized; 4 with OPPTS and OECD; 2 with OPPT and OECD; and 13 with OPPT and OPP. Thirty health effects guidelines have been harmonized between OPPTS and OECD and 10 have been harmonized between OPPT and OPP.

In areas where the science in the OPPTS guidelines had progressed beyond that in the OECD guidelines, the revised U.S. guidelines have had a significant impact upon the OECD guidelines. This is particularly true in the areas of neurotoxicity, developmental neurotoxicity, and developmental and reproductive biology. The revised guidelines will be available through the EPA Internet and the Government Printing Office (GPO) bulletin board. Hard copies may be requested through the GPO. For more information, contact: Angela Auletta, (202) 260-1513.

Paperless Office

To operate more efficiently and in the spirit of pollution prevention, OPPT has created a vision of a paperless office where all information would be shared electronically through the Internet and the internal Local Area Network (LAN).

A 1995 internal evaluation of how OPPT creates, stores and uses information to accomplish its programmatic mission showed that OPPT's chemical review processes are generally inefficient in their management of information. To remedy this, in FY96, OPPT established a dedicated team to implement the paperless office vision and establish the necessary infrastructure. Lotus Notes will be the primary software used to implement the paperless office, and the team has established a Lotus Notes file server and installed Lotus Notes for about 25 percent of the OPPT staff. The team has identified ten OPPT projects as candidates for reengineering and implementation of workflow applications in Lotus Notes, and is conducting Lotus Notes training and demonstrations. For more information, contact: Dan Helfgott, (202) 260-2291.

Partnership Programs Coordinating Committee

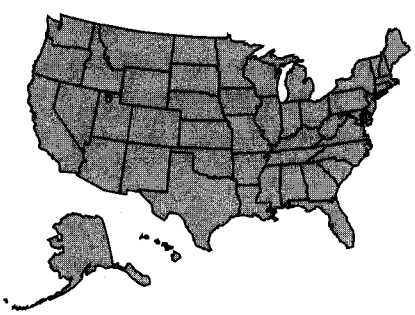
Over the last several years, a number of voluntary partnership programs have been created at EPA, due to the success of this approach both in meeting environmental goals and in saving money for participants. OPPT is a key player in the Partnership Programs Coordinating Committee, a group established to coordinate and improve EPA's voluntary partnership programs.

Through an array of partnership programs collectively referred to as Partners for the Environment, EPA is working to demonstrate that voluntary commitments achieve real environmental results in a timely and cost-effective way. Since the Agency launched this voluntary approach in the early 1990's with the 33/50 Program and the Green Lights Program, thousands of organizations have joined with the Agency to reach a range of important environmental goals.

EPA created the Partnership Programs Coordinating Committee to increase public awareness of the Agency's voluntary programs, and to foster coordination and continuing improvements among all of our Partnership Programs. The coordinating committee consists of representatives of every major EPA office and several of the Agency's regions. The Committee has created a summary catalogue and fact sheet on all of EPA's voluntary programs, and is trying to improve internal efficiency in running the Partners for the Environment programs, and strengthen the programs' communication and services to customers.

Current projects include exploring and strengthening synergies among partnership programs that share similar goals; developing common metrics for measuring the environmental benefits of partnership programs; increasing coordination among and between EPA Headquarters and Regional offices that manage partnership programs; increasing joint outreach efforts, which will include the first all-inclusive Partnership Program outreach and recognition event; and coordinating EPA's partnership program activities with the Vice President's National Performance Review. For more information, contact: Holly Elwood, (202) 260-4362 or Sheila Canavan, (202) 260-8616.

Pollution Prevention Incentives for States



OPPT is funding and supporting several activities to encourage state and local governments to implement pollution prevention activities in the public and private sector.

In 1996, approximately $5 million was awarded through the Pollution Prevention Incentives for States (PPIS) Program. Through EPA's regional offices, states can apply for grants to create new pollution prevention approaches and to educate the public and industry about these new methods. In general, these grants fund projects in the areas of technical assistance and training, education and outreach, regulatory integration, demonstration projects, legislative activities, and awards and recognition programs. The incentive program demon-

strates how pollution prevention can reduce risks to human health and the environment, while also saving organizations money by reducing raw material losses, decreasing the need for expensive "end-of-pipe" technologies, and decreasing long-term liability. The funding is directed to the states because they are more knowledgeable about local conditions, industry, and problems than the national government.

EPA released an assessment of the PPIS grant program, which found that incentive funds had paid for almost 5,000 pollution prevention assessments, more than 850 workshops to share pollution prevention strategies, and the development of nearly 400 case studies. The grant program enabled states to reach companies in 35 targeted industry sectors, as well as the agricultural, transportation and energy sectors, to help them recognize the benefits of pollution prevention. For more information, contact: Lena Hann Ferris, (202) 260-2237.

Pollution Prevention Through Regulation

OPPT plays a key role in promoting cross-media and pollution prevention approaches in EPA regulations.

OPPT plays a key strategic and facilitative role in coordinating EPA's efforts to promote cross-media and pollution prevention approaches through its air, water, and solid waste regulations. In 1992 OPPT initiated the Source Reduction Review Project (SRRP) which aimed to systematically change how EPA's environmental media programs developed their regulations. In February 1996, OPPT published an assessment of SRRP lessons, and several model rules that are setting precedents in promoting pollution prevention.

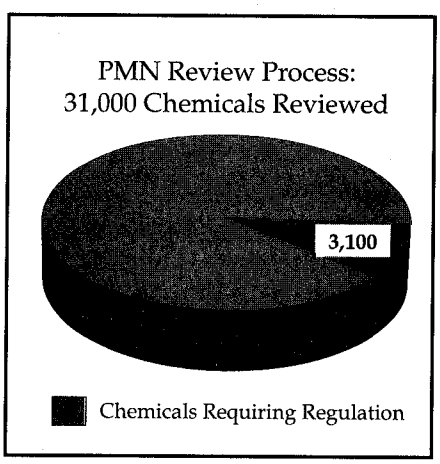
From this project, EPA learned that pollution prevention thinking in the regulatory context leads to regarding a situation more holistically, discovering the cross-media impacts that may be associated with single-media decision-making, and recognizing options for taking cross-media trade-offs into account. In addition, the assessment revealed that just as it is easier to promote pollution prevention among facilities whose processes are relatively similar, it helps to define industry categories rather narrowly for regulatory purposes. It was also found that responsible and creative use of flexibility and economic incentives within a regulation can help to promote pollution prevention. Another discovery is the importance of systems decision-making, such as in the planning, budgeting, and legislative arenas, on pollution prevention outcomes in individual regulations. For more information, contact: Kathy Davey, (202) 260-2290.

Pollution Prevention Trade Association Workgroup

The Pollution Prevention Trade Association Workgroup is made up of representatives from various trade associations who work to create tools and disseminate information to help trade associations promote pollution prevention in their member companies.

Trade associations are playing a growing role in communicating and advancing environmental goals. Promoting pollution prevention requires industry-specific knowledge and the ability to combine the resources of companies to address industry-wide concerns, making the role of trade associations pivotal. In 1995, OPPT organized a workgroup of interested trade association staff to encourage pollution prevention. In 1996, the workgroup produced a benchmarking/resource document, "The P2 Resources Compendium" which contains information on the pollution prevention policies and products of various trade associations. The group also sponsors a program of monthly dialogue sessions which focus on a given P2-related project, allowing EPA staff and trade associations to discuss issues of concern on an informal basis. In June, 1996, the workgroup held the national P2 Trade Association Symposium which presented case studies, lessons learned, and practical pollution prevention ideas. The group planned to hold another Symposium in 1997, continue to implement and improve upon the existing products, and explore additional ways to promote pollution prevention. In 1997, the American Institute for Pollution Prevention will be helping the workgroup move forward on a variety of projects. For more information, contact: Leah Yasenchak, (202) 260-7854.

Pre-Manufacture Notice (PMN) Review Process



As mandated under Section 5 of TSCA, OPPT reviews all new chemicals submitted to the Agency.

TSCA started reviewing new chemical notices in 1979 and began reviewing cases using a category approach in 1988. In FY96, 1,892 total notices were reviewed. A total of 211 polymers were reported under the new polymer exemption that did not require submission prior to manufacture. Thirty chemicals were signed under TSCA section 5(e) consent orders, 79 chemicals were withdrawn in the face of regulation, and test data were received for another 62 chemicals. A total of 31,000 new chemicals have been reviewed to date. Of these, 3,100 or 10% of chemicals reviewed were regulated (i.e. required exposure controls, were limited in their use, or required testing). Of the approximately 2,000 notices received in FY96, almost 10% required regulation. Coordination is required with other OPPT and EPA Programs so that exposure models can be developed. For more information, contact: Anna Coutlakis, (202) 260-3592.

Project XL

Project XL gives responsible companies and other regulated parties the flexibility to replace the requirements of the current system with their own alternative strategies to achieve better bottom-line environmental results.

Project XL provides an opportunity for companies to demonstrate that they can achieve better bottom-line environmental results than possible under current regulatory constraints. Since the beginning of Project XL, OPPT staff have been part of an Agency core group that has helped EPA's Office of Policy, Planning and Evaluation provide overall direction for the project. Further, OPPT has promoted several specific prevention-oriented Project XL proposals, including the Intel Corporation facility design project, HADCO corporation waste recycling, and the Lucent Technologies (formerly AT&T Microelectronics) water pollution prevention project, based in part on the new ISO 14000 voluntary environmental standards. For more information, contact: Chen Wen, (202) 260-4109.

Small Business Development Center Pilots: Pennsylvania and Vermont

OPPT, in an effort to reach small businesses and generate positive real-world environmental results, has begun pilot programs in Vermont and Pennsylvania to demonstrate the value of delivering environmental assistance services to small firms within a business development context.

OPPT is looking at pollution prevention as an approach to environmental problem solving in addition to an end in itself. Using this concept to achieve positive environmental results in the small business community requires: technical assistance, with an emphasis on adoption of cleaner technologies; compliance assistance, with emphasis on staying ahead of the "regulatory curve;" and business development assistance. The Small Business Development Centers (SBDCs), funded jointly by the U.S. Small Business Administration and the States, deliver business development assistance through a network of about 1,000 centers across the country. These centers do not usually have environmental expertise in-house.

To explore the potential of using this network to provide environmental assistance to small businesses, OPPT has funded two pilots, one in Vermont and one in Pennsylvania. The Vermont project, which began in 1995, has been very successful, and an environmental component is now a permanent part of that state's SBDC. The Pennsylvania project is newer, but shows promise of being equally successful. Based upon the experience of these pilots, OPPT will be working with the Association of Small Business Development Centers to help this organization build an environmental component into its National Delivery System. For more information, contact: Ed Weiler, (202) 260-2996.

SMART Review Program

OPPT is assessing the pollution potential of chemicals that industry is developing for commercial production to provide suggestions for making new products less toxic.

OPPT is examining the pollution potential associated with the manufacture, as well as the use of, new products. For chemicals of concern, OPPT provides suggestions to the manufacturer developing the new chemical about green chemistry technologies that might make the new chemical more environmentally benign. The submitter may consider these for current and future chemical development. For more information, contact: Carol Farris, (202) 260-1732.

Promoting Safer Chemicals

Promote the design, development and application of less toxic chemicals, processes and technologies in the industrial sector of the economy.

Acrylates Testing Agreement

The Acrylates Testing Agreement provides information on the health effects of acrylates. This program employed strategic testing of representative members of this category of chemicals to evaluate the potential for toxicity for an entire class of commercially promising acrylates or methacrylates. The costs were shared by a large group of acrylates manufacturers.

New chemical acrylates have been regulated since 1983. In 1989, the Specialty Acrylates Manufacturers (SAM) and OPPT agreed to a voluntary testing program which included biochemical reactivity studies and two long term bioassays for a pair of acrylate/methacrylate substances. In exchange for the testing program, OPPT agreed to eliminate requirements for cancer warnings on labels and significant new use rules (SNUR)—a requirement that EPA must be notified if a chemical will be produced for any significantly new use or new chemical acrylates — and agreed to begin work on a Generic Acrylate SNUR.

In FY96, EPA completed review of the test results, and agreed that neither the representative acrylate or methacrylate was carcinogenic under study conditions. However, EPA remains concerned that some acrylates may be carcinogenic after repeated application at higher doses. Based on these findings, EPA no longer regulates acrylates or methacrylates as a category for health concerns.

However, if an acrylate or methacrylate is structurally close to a substance for which EPA has concerns, EPA may regulate it based on potential unreasonable risk. This will now be done on a case-by-case basis and will eliminate most regulation of acrylates and methacrylates, especially higher molecular weight and polymeric substances. This project used "government-industry thinking" to provide a better understanding of the hundreds of existing acrylate substances already on the TSCA Inventory, and to eliminate unnecessary regulations. For more information, contact: Jim Alwood, (202) 260-1857.

Acute Exposure Guidelines for Hazardous Substances

There is currently a lack of scientifically credible, short-term exposure limits for many acutely toxic chemicals. These exposure limits are necessary for effective emergency planning and response, and exposure prevention. To remedy this lack, a collaborative effort among government and private sector scientists was begun to evaluate chemicals so that safe exposure limits could be determined.

The National Program for the

Development of Acute Exposure Guidelines for Hazardous Substances established an ongoing collaborative effort among scientists in federal and state agencies and the private sector to develop short-term exposure limits for a large number of acutely toxic chemicals. These exposure limits are critical in a wide range of important applications involving emergency planning and response, prevention of accidental releases of toxic chemicals in occupational settings, transportation activities, and establishment of exposure limits in local communities.

The intent of the project is to develop more short-term exposure limits for 300-400 hazardous substances in an efficient and cost-effective manner, with one set of uniform values to be used nationally for a wide range of applications.

Since this project began as a concept in 1987, work has been done to build participation and scientific support for the effort, and to develop a comprehensive methodology and peer review process. To date, this national program has attracted three EPA program offices, eight other federal agencies, six state agencies, representatives from local agencies, private industry, academic institutions, the American Industrial Hygiene Association, and numerous other organizations in the private sector. During FY96, the first year of operation, the committee developed 108 proposed acute exposure guideline levels (AEGLs) for nine hazardous chemicals. Additionally, the group is exploring the possibility of expanding to include European and Pacific rim countries in order to develop one set of uniform exposure guideline levels to be used world-wide. For more information, contact: Paul Tobin, (202) 260-1736.

Benzidine-Based Dyes

OPPT is working to ensure that the carcinogenic benzidine-based dyes remain out of commerce.

Benzidine and benzidine-based dyes are potent animal carcinogens, and benzidine is also a human carcinogen. By 1993, industry had stopped the use of benzidine-based dyes in the United States. To ensure that benzidine-based dyes stay off the market, late in 1996 EPA published a rule that ensures that these dyes cannot be returned to commerce without EPA's approval. OPPT is now trying to eliminate the use of closely related chemicals, called benzidine-congener dyes, because they may also present a significant cancer risk. OPPT is negotiating with the two remaining U.S. manufacturers of these dyes to agree on ways to reduce or eliminate the risks associated with benzidine congener dyes. For more information, contact: Karen Lannon (benzidine-based substances), (202) 260-2797; Dan Helfgott (benzidine congener dyes), (202) 260-1096.

Bioremediation Field Trial

For the first time, EPA approved the use of certain microorganisms in field research to test their ability to decompose hazardous chemical waste. A successful test would provide an additional way of removing existing hazardous organic chemicals from the environment.

In March 1996, OPPT approved the first environmental use of intergeneric microorganisms for bioremedial research. (An intergeneric organism is one that contains genetic material from organisms from more than one genus; a category by which organisms are classified.) The research is being done at the Oak Ridge National Laboratory. OPPT anticipates that requests for approval to test other intergeneric microorganisms for bioremediation activity will increase in the future. For more information, contact: David E. Giamporcaro, (202) 260-6362.

Biotechnology (TSCA) Regulations

These regulations will simplify the reporting requirements for the biotechnology industry.

The final biotechnology rule expected to be promulgated in Fall, 1997, will establish regulations that will reduce the reporting burden on the biotechnology industry while being fully protective of human health and the environment. These regulations include exemptions from oversight at the commercial and research and development stages for microorganisms which the Agency has determined, based on substantial past experience, may not present an unreasonable risk to health or the environment. The TSCA Biotechnology Program within OPPT has close ties to the Design for the Environment program, various Environmental Technology Initiative projects, and the Green Chemistry program. For more information, contact: David E. Giamporcaro, (202) 260-6362.

Cancer Expert System

The Cancer Expert System has been used to capture EPA's expertise, improve the accuracy and consistency of prediction of carcinogenicity, and make OPPT scientific expertise accessible throughout the world. Through use of the system, public and health protection officials worldwide will be able to better identify potential carcinogens and understand their relative hazards, and private industries will be able to design safer chemicals.

EPA has long used Structure Activity Relationship (SAR) analysis to effectively predict and assess the potential toxicity of chemicals. OPPT scientists involved in making toxicity predictions about the carcinogenic potential of chemicals initiated the development of an SAR rule-based Cancer Expert System which would use their knowledge of chemical structures and properties to predict the carcinogenic potential of chemicals. This system: 1) captures and enhances EPA expertise in predictive toxicology in a formalized system, 2) reduces/eliminates inconsistency, 3) allows non-experts to obtain expert judgments themselves, 4)

expedites risk assessments and decision making, 5) provides a framework to identify knowledge gaps, and 6) provides guidance to private industries in design of safer chemicals. The system has been accomplishment by scientists in academia, research and regulatory agencies, and could have a significant impact on human health and environmental protection worldwide.

Future improvements will involve generating new modules to allow the user to incorporate known biological data into the program and use that data to refine the cancer assessments generated by the expert SAR rules. Through an agreement with the software developer, the Cancer Expert System will be made available at distribution cost to national and international federal and state agencies, non-profit organizations engaged in environmental protection, and unions. For more information, contact: Ernie Falke, (202) 260-3433.

Core TSCA Enforcement Project

The purpose of this project is to ensure coordination and communication among OPPT, the Office of Enforcement and Compliance Assurance (OECA), and Regional inspectors in activities relating to compliance assistance and enforcement of TSCA.

The Core TSCA Enforcement Project ensures coordination among the various parts of the Agency with responsibility for compliance assistance and enforcement of TSCA. During FY96, projects were undertaken to improve Regional access to databases maintained by Headquarters for use in: 1) inspection targeting, 2) dissemination of risk-based Section 5(e) Consent Orders for follow-up inspections, and 3) revision of Section 5(e) Consent Order provisions to address notification of EPA Regional offices in advance of manufacture of chemical substances subject to such Orders. This project involves close coordination between OPPT's New and Existing Chemical Programs, the Regional Core TSCA inspectors, and OECA. For more information, contact: David E. Giamporcaro, (202) 260-6362.

Dermal Absorption Rate Data Development

EPA is working to ensure that more studies on the rate of absorption of chemicals through the skin will be conducted.

The Occupational Safety and Health Administration (OSHA) needs data on the rate of absorption of chemicals through human skin (dermal absorption) to determine whether workers need to wear protective equipment when handling certain chemicals. OSHA requested that the TSCA Interagency Testing Committee (ITC) review the current scientific literature on dermal absorption rates. The ITC determined that the existing data are inadequate. EPA was asked to require industry to test 80 chemicals for which more information was needed. In anticipation of this request, OPPT and ITC developed a test method for

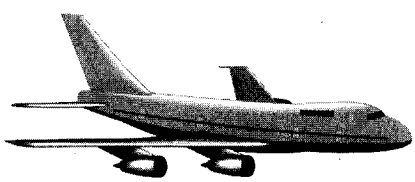
in vitro dermal absorption rate for the mass screening of workplace chemicals. On the basis of this test method, EPA solicited TSCA Section 4 Enforceable Consent Agreement (ECA) testing proposals from industry. EPA received one offer from industry to test one chemical via an ECA. EPA is developing a TSCA Section 4 test rule that will require industry to conduct the needed testing on the remaining chemicals. The proposed test rule is expected to be issued in early 1997. For more information, contact: Keith Cronin, (202) 260-8157.

Design for the Environment Program

The goal of the Design for the Environment (DfE) Program is to help industry make more informed environmental decisions about the use of alternative chemicals, processes, and technologies to prevent pollution. The program has had a substantial impact in reducing pollution since its inception in 1992. The next 5 projects describe efforts being made under the DfE Program. For more information, contact: Bill Hanson, (202) 260-3469.

Aerospace and Aviation

EPA has worked with the aerospace and aviation industries to reduce their use of hazardous solvents, especially methylene chloride. Two aerospace and aviation projects have been carried out under OPPT's Design for the Environment Program. Both began in 1994. The Lean Aircraft Initiative was a joint project of the Air Force and U.S. aerospace companies to make their activities cleaner while remaining competitive. This initiative has resulted in significant reductions in the use of hazardous solvents during aircraft manufacturing and maintenance operations. Although the formal project has ended, industry will continue to carry out pilot projects.



The second project is the Small Aircraft Paint Stripping project, whose purpose is to decrease solvent use, especially methylene chloride, in the general aviation industry. The project is being carried out by EPA, the Coast Guard, and the general aviation community. In 1996, this project brought together representatives from the general aviation community, EPA's Office of Air, and the Federal Aviation Administration. They considered ways to reduce methylene chloride use and releases, especially in paint stripping, while preserving aircraft safety and the industry's competitiveness. In 1997, OPPT and the Coast Guard will publish information on ways to minimize or eliminate the use of methylene chloride in general aviation maintenance operations. For more information, contact: Ric Peri (U.S. Coast Guard), (202) 260-3122; Mary Dominiak (OPPT), (202) 260-7768.

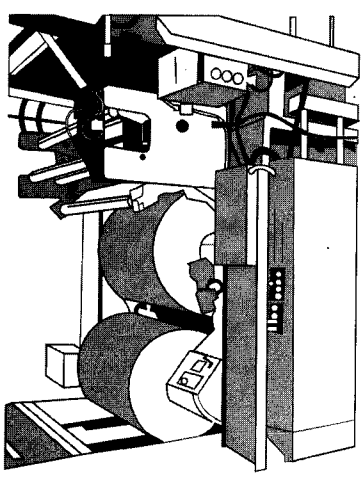
Dry Cleaning Project

The dry cleaning industry is developing safer ways of cleaning clothes and is working with fabric manufacturers so that new

fabrics will be able to be cleaned without using harmful chemicals.

The Dry Cleaning Project has identified and demonstrated alternative technologies for cleaning clothes that do not involve the use of the chemical perchloroethylene which may cause cancer. Technologies such as wet cleaning, which uses water-based systems, and "Dry Wash," based on liquid CO_2, are increasingly being used. Largely as the result of this project, the number of dry cleaning facilities using machine wet cleaning instead of perchloroethylene technology has increased from zero to over 80 from roughly March, 1995 to October, 1996, with additional facilities planning to convert to the new technologies.

On September 9-10, 1996, the Dry Cleaning project held a highly successful Apparel Care and the Environment Workshop in Washington, DC. This workshop brought the polymer and textile manufacturers, and garment retailers such as J. C. Penney and The Gap to the stakeholders' table for the first time. Other stakeholders consisted of the fabric cleaning industry and environmental and labor groups. This industrial ecology approach of including the entire industrial web of participants from the fabric making and fabricare industries is designed to make garments more amenable to the use of environmentally-friendly fabric cleaning technologies. To succeed at the back end, the DfE project is going to the front end of the process to investigate changes in the very properties of the polymers used in textiles and in garments. If the industry reduces the number of different polymers used in linings, padding, and related items, it will be easier for companies to adopt "green fabricare" technologies. For more information, contact: Bill Hanson, (202) 260-3469.



Outreach

Curriculum materials are being developed to teach community college students about pollution prevention.

In cooperation with other organizations, the Design for the Environment Program established an Educational Outreach and Curriculum Development program in FY96 to promote the development of pollution prevention curriculum materials for use in community colleges. The materials will integrate information developed in several of the Design for the Environment projects. For more information, contact: Irina Vaysman, (202) 260-1312.

Printing Project

The Design for the Environment Printing Project is working with screen printers, lithographers, and flexographers to identify pollution prevention opportunities and information on the risk, performance, and cost of products used in their shops.

The Screen Printing Project has completed the Screen

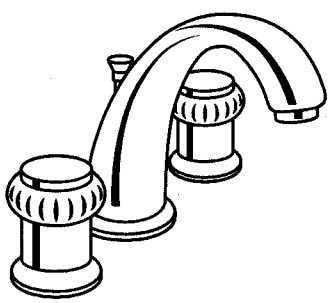
Reclamation Cleaner Technologies Substitutes Assessment, as well case studies, a training video, software, and a satellite training seminar. The Lithography Project is currently developing a Blanket Wash Substitutes Assessment. The ongoing Flexography Project will begin looking at flexographic inks in FY97. An FY97 initiative aimed at a fourth printing sector, the Gravure Printers, will focus on alternative ink application and alternative cylinder plating technologies. For more information, contact: Stephanie Bergman, (202) 260-1821.

Printed Wiring Board

In 1994, the Design for the Environment Program began working with the Printed Wiring Board industry to assess alternative cleaner technologies for various processes.

In early 1997, the participants in the DfE Printed Wiring Board Project expect to complete their assessment of alternative technologies for manufacturing printed wiring boards. The alternatives examined can replace a current technology that generates a significant amount of hazardous waste, uses toxic chemicals such as formaldehyde, and consumes large quantities of water and energy. A second assessment is evaluating several surface finish technologies for their potential health and environmental risks, performance, and costs compared to the current technology, which generates lead waste and exposes workers to lead. The project has also produced several informational products to promote pollution prevention in the industry. For more information, contact: Kathy Hart, (202) 260-1707.

Drinking Water Contaminants Testing Action



EPA's Office of Water (OW) needed information on the health effects of certain drinking water contaminants but does not have the authority to require the necessary testing. OPPT issued a TSCA Section 4 test rule and obtained the necessary information for the Office of Water.

Through a test rule issued under Section 4 of TSCA, OPPT secured 14-day repeated dose and 90-day subchronic toxicity testing on chloroethane, 1,1-dichloroethane, 1,1,2,2-tetrachloroethane, and 1,3,5-trimethylbenzene. This testing program provided health effects data to OW for developing Hazard Advisories on these drinking water contaminants. Working with OW, OPPT proposed a test rule in 1990, published the final rule in 1993, and received the necessary data by 1996 for review by the Office of Water. For more information, contact: the TSCA Hotline, (202) 554-1404.

Endocrine Disruptors: Development of Testing Needs

Chemicals that behave as environmental hormones, or endocrine disruptors, are a chemical category of emerging concern because of the potential harm they can do to human health and the environment. There is discussion among the scientific community regarding the adverse impacts these chemicals may have. Children and the unborn may be at particular risk, but more studies need to be done to determine the extent of the risk and identify which chemicals present a problem.

The Food Quality Protection Act (FQPA) of 1996 and the 1996 amendments to the Safe Drinking Water Act give EPA discretion to test certain chemicals for endocrine disruption. The FQPA in particular, requires that pesticides be tested for estrogenic activity and gives EPA until August 1998 to develop a strategy for doing so.

During FY96, OPPT established the Endocrine Disruptor Screening and Testing Advisory Committee which, in collaboration with other EPA Program Offices, other federal agencies, environmental groups, industry, academia, and other interested parties, will develop a strategy for screening and testing of compounds which may warrant testing. This ongoing dialogue will continue well into 1997. For more information, contact: Gary Timm, (202) 260-1859.

Formaldehyde Exposure Testing

Urea-formaldehyde (UF) pressed wood building materials are common in homes. These materials emit formaldehyde, a chemical that causes eye and respirator irritation in humans and cancer in test animals. More information is needed to determine whether further reductions in UF product emission standards are needed.

In 1993 OPPT held a public meeting on its testing objectives for ureaformaldehyde (UF) products. In 1994, EPA and manufacturers of these products agreed to conduct pilot study testing in both conventional and manufactured housing which would characterize both the intensity and duration of potential human exposure to formaldehyde. Due to budget constraints, testing ended before all tests were completed. A pilot study final report was made available in 1996.

EPA is now sponsoring an ongoing peer review of the report, looking to determine whether additional formaldehyde residential exposure testing is needed and if so, of what nature. OPPT has also: 1) developed and issued two formaldehyde risk assessment documents that have addressed the issue of formaldehyde and cancer, including the evidence suggestive of a threshold for cancer; 2) urged the pressed wood industry to bring all of its production under voluntary emission standards (which it has done, although the adequacy of these standards remains in question); and 3) convinced the industry to lower its voluntary emission standards for particle board flooring products. The testing effort will help to resolve the outstanding exposure questions.

OPPT expects to hold a second public meeting on formaldehyde testing to obtain public input of the implications of the pilot study results and on the need for additional formaldehyde exposure testing. For more information, contact: George Semeniuk, (202) 260-2134.

New Chemicals Program Customer Service Standards

The goal of this program is to develop appropriate performance measures in those areas that are of greatest interest to our customers.

In 1994, the New Chemicals Program was selected to participate in a program to evaluate customer service as part of the federal government's National Performance Review. Phase I began in 1994 with a survey and a final report published in June, 1995. Phase II involved the surveying of internal and external customers again to be sure that the areas of greatest interest have been correctly identified before developing standards that can be used in benchmarking the organization. In addition, Phase II created a Customer Service Plan which will be used as a basis for reporting the program's annual performance to customers. Six customer service standards have been developed and reviewed by one group of internal EPA customers and are ready for review by industry, after which they will be finalized and implemented in 1997. Phase III will create transaction-based surveys to assess customer satisfaction with existing new services. For more information, contact: Anna Coutlakis, (202) 260-3592.

PMN Exemptions

Created to reduce industry's regulatory burden, the premanufacture notice (PMN) exemption process is now more flexible, and the exemptions allow submitters to achieve significant cost savings.

Polymer Exemptions. This initiative provides substantial benefit to the environment by encouraging industry to manufacture safer polymers. One requirement of the polymer exemption is for manufacturers to notify EPA annually of the number of times the exemption was used. This reporting occurs in January for the preceding fiscal year. The first such report for FY95 indicated that 51 different polymer manufacturers had used the exemption for 99 polymers during the final 7 months of 1995. (The exemption took effect in June 1995.)

EPA estimates that the total cost savings to industry was $2-3 million during the 7-month period, based on estimated costs associated with the submission of a PMN ($20,000 - $30,000 for each PMN). Estimated total savings for EPA are about $120,000, based on the estimated cost of reviewing a submission ($1000 - $1200 per submission for 99 polymers). Under the rule, industry is no longer required to submit a PMN for polymers that meet specified requirements.

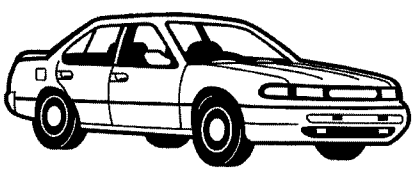
Low Volume Exemptions. In FY96, the allowable weight

under the exemption was increased from 1,000 to 10,000 kg per year, and the restriction limiting the exemption to one manufacturer per substance was eliminated. As a result of this exemption, the Agency experienced a significant increase in the number of low volume exemptions over the previous year (FY95=309; FY96=395).

Low Release/Low Exposure Exemptions. In FY96, six companies took advantage of this newly introduced exemption, promulgated to encourage manufacturers to generate new chemicals with innovative technology that minimized human exposure and environmental release. EPA expects the number of exemption holders to increase as companies become more familiar with the new provisions of the exemptions and their utility in allowing more flexibility in the manufacture of new chemicals.

For more information, contact: Mary Cushmac, (202) 260-4443.

Product Stewardship/ Respiratory Protection In Autobody Spray Paints



A joint voluntary partnership between OPPT and other federal agencies and industry was formed to implement an industry-wide product stewardship program that would lead to safer coatings and would improve the use of respiratory protection and other worker protection measures during automotive refinishing operations.

EPA is working with the National Institute for Occupational Safety and Health (NIOSH) and other partners to develop and implement the proposed product stewardship program for this industry. EPA has developed product stewardship requirements under TSCA for new chemical coatings which are less toxic than existing coatings. Coatings manufacturers have begun to reformulate their products so they release smaller amounts of volatile organic compounds, as required by the Clean Air Act. The automotive refinish industry, in response to anticipated EPA and state requirements for safer products, is adapting to new practices, more efficient equipment, and new products.

There are two broad goals for this proposed effort: 1) promote risk reduction by improving the appropriate use of respiratory protection and encouraging effective and efficient use of innovative technology and engineering controls, and 2) promote risk reduction by integrating ongoing industry reformulation efforts to develop safer coatings with improvements in worker protection measures during application of coatings. The project is intended to be a pilot effort serving as a model for other new chemical use categories with overall risk reduction potential. Another important aspect of the proposed partnership includes identifying barriers to, and incentives for, risk reduction in the automotive refinish industry. The proposed industry-wide product stewardship program will also help to distribute the costs of risk reduction more equitably across the industry. For more information, contact: Scott Prothero, (202) 260-1566.

Risk Assessment Tools: OPPT and Kodak

OPPT has developed methods for assessing the risks of hazardous chemicals for which there are little or no data. With this added perspective, industries can make more informed and independent decisions about their chemicals.

OPPT's innovative risk assessment methods were put to the test with the Eastman Kodak Company. Kodak and EPA independently evaluated the same five chemicals. This demonstrated that OPPT's technical methods could be effectively transferred and used by others. Kodak then used the tools to evaluate pollution prevention opportunities associated with a new synthetic pathway and to identify safer substitutes for a photographic development solution. Kodak found the tools to be extremely useful in their day-to-day operations, noting that, "by applying the methods early in the development cycle, we were able to avoid unnecessary expenditures on product formulations for which appropriate alternatives were available or could be developed."

In FY97, EPA Region 9 will play a lead role in transferring OPPT methodologies to other companies, states, etc. If successful, OPPT plans to involve all ten Regions in FY98. Furthermore, in FY97, OPPT is planning to develop a P2 Assessment Framework. The Framework will make broadly available the basic assessment methods that were transferred to Kodak. The FY97 collaboration with Region 9 will include an evaluation of the utility of the Framework to other program activities within Region 9. For more information, contact: Bill Waugh, (202) 260-3442, Don Rodier, (202) 260-1276, or Josephine Chien, Region 9, (415) 744-2419.

Siloxane Product Stewardship Program: Memorandum of Understanding

Dow Corning has agreed to voluntarily develop and implement a comprehensive Product Stewardship/Testing Program involving animal toxicity testing and exposure monitoring for six siloxanes.

On April 9, 1996, OPPT and Dow Corning signed a formal Memorandum of Understanding (MOU) under which the company agreed voluntarily to develop and implement a comprehensive Product Stewardship/Testing Program. Under the MOU, Dow Corning will conduct a $30 million animal toxicity testing and exposure monitoring program for six siloxanes. These chemicals represent a broad class of siloxanes used widely in industrial and consumer products. The testing program includes development of health effects data for the following endpoints: metabolism/pharmacokinetics; immunotoxicity; subacute and subchronic toxicity; neurotoxicity; reproductive and developmental toxicity; chronic toxicity; and oncogenicity.

Dow Corning also agreed to voluntarily develop and implement: 1) comprehensive worker/customer communication, feedback, and safety training activities including revisions as needed to Material Safety Data Sheets, product labels and literature, and 2) exposure monitoring

and reduction activities including the submission of periodic reports to EPA to document continuing progress. The testing program alone is expected to take the company at least 5 to 6 years to complete. OPPT will continue to monitor and make public the results of the siloxane testing program as well as the other product stewardship activities throughout the entire course of the MOU. The chemicals covered under this agreement were recommended for testing by the TSCA Interagency Testing Committee. For more information, contact: Dave Williams, (202) 260-3468.

TSCA Section 4 Data Receipt

Under Section 4 of TSCA, EPA can require industry to test chemicals and to submit the results of that testing to EPA for review and public dissemination. These data promote public understanding of the risks of chemicals and facilitate public involvement in environmental decision-making.

During FY96, 40 TSCA Section 4 studies on 10 chemicals were received and placed in the public docket. Currently about 300 chemicals are undergoing a variety of health and/or environmental effects studies in OPPT's Chemical Testing Program.

Testing actions to develop needed data are underway on another 200 chemicals. As studies are completed they are submitted to EPA for review and to the public docket to ensure immediate access by interested parties. In order to ensure sound science, all studies conducted under TSCA Section 4 are performed in accordance with established test methodologies with strict adherence to "Good Laboratory Practice" regulations. OPPT has begun discussions with industry on electronic submissions to facilitate reporting and reduce compliance costs. For more information, contact: Dave Williams, (202) 260-3468.

TSCA Section 4 Enforceable Consent Agreements

The following chemicals are produced in high volumes,and there is substantial human exposure to them. OPPT has obtained or initiated Enforceable Consent Agreement (ECA) actions which will result in a wide variety of human health and environmental toxicity studies. These activities are tied to efforts in OPPT, Office of Air and Radiation, Office of Research and Development and the Consumer Product Safety Commission.

During FY96, OPPT:

- Finalized negotiated Enforceable Consent Agreements on:

Phenol, a high production volume solvent and base stock. The ECA is with 14 producers/importers and will result in a comprehensive health effects testing program for this Clean Air Act "Hazardous Air Pollutant." For more information, contact: Keith Cronin, (202) 260-8157.

Alkyl (C12-13) Glydicyl Ethers (AGEs) with 5 producers /importers to conduct health effects test-

ing on this high production volume chemical used in commercial epoxy resin products. For more information, contact: Keith Cronin, (202) 260-8157.

- Initiated Development of Enforceable Consent Agreements to obtain health effects data on:

1,2-bis(2,4,6-tribromophenoxy)ethane (BTBPE), a "Brominated Flame Retardant." In late 1989, the Interagency Testing Committee (ITC) designated five chemicals in the brominated flame retardant chemical category for testing for chemical fate, health and environmental effects. In 1991, OPPT published a Notice of Proposed Rulemaking, and in 1996 decided to proceed with an Enforceable Consent Agreement for BTBPE, a chemical manufactured only by the Great Lakes Chemical Corporation. The remaining four chemicals will be tested first in the Screening Information Data Set (SIDS) screening program under the OECD. For more information, contact: John Harris, (202) 260-8154.

Three DiBasic Esters used as solvent substitutes for methylene chloride in paint stripping products. For more information, contact: George Semeniuk, (202)260-2134.

Twelve Aryl Phosphate base stocks, high production volume materials used primarily as plasticizers in polymers and in hydraulic fluids and high pressure lubricants. For more information, contact: Rich Leukroth, (202) 260-0321.

Hexamethylene Diisocyanate (HDI), a high production chemical used in coatings and paints. For more information, contact: Keith Cronin, (202) 260-8157.

- Issued TSCA Section 4 Proposed Test Rules on:

23 "Hazardous Air Pollutants" (HAPs), for comprehensive health effects testing to support ongoing efforts of EPA's Office of Air and Radiation under the Clean Air Act. The proposal involves more than 100 toxicological studies. During FY96, OPPT also initiated ECAs (e.g., for pharmacokinetics) on a number of these HAPs. For more information, contact: Rich Leukroth, (202) 260-0321 and John Harris, (202) 260-8154.

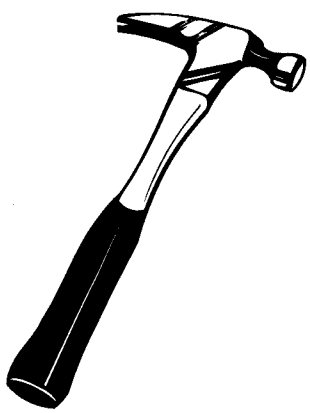
TSCA Section 8(a) and Section 8(d) Information Gathering Rules

Under Sections 8(a) and 8(d) of the Toxic Substances Control Act, EPA has the authority to require companies to submit information on exposure and health and safety, respectively. This information gathering promotes public understanding of the risks of chemicals and encourages public involvement in environmental decision making through development and dissemination of information on toxic chemicals.

OPPT uses the information gathering authorities in TSCA to respond primarily to testing recommendations of the TSCA Interagency Testing Committee (ITC). OPPT issues rules requiring chemical producers, importers, and processors to submit exposure information

and unpublished health and safety information for review by the Federal agencies which are members of the ITC. All non-confidential data are made available to the public. Based on this information, the ITC may request EPA to require additional testing of a given chemical. In FY96, OPPT required companies to submit information on more than 50 chemicals using these authorities. In addition, OPPT is considering possible revisions to TSCA Section 8(d) reporting requirements to reduce industry's reporting burden and facilitate public access to the data. For more information, contact: Dave Williams, (202) 260-3468.

Use and Exposure Information Project



Chemical manufacturers have cooperated with the federal government in voluntarily providing useful exposure data, and OPPT has benefited from helping industry understand how its data are used to assess and reduce risk.

This project represents the first time that industry has voluntarily agreed to provide OPPT with detailed data on production, releases, uses, and worker exposure associated with specific chemicals. This joint effort provides use and exposure information not readily available to OPPT in any other way. Two rounds of data collection occurred in 1994 and 1995 encompassing 31 chemicals. The ongoing third round, begun in June, 1996, involves 15 additional chemicals. EPA uses these data to improve its risk screening, risk assessment, and risk management activities. Because industry reviews OPPT's use of these data in estimating exposure and risk, OPPT is obtaining useful feedback on how to improve its exposure assessments. Industry benefits from understanding EPA's methodology and providing input. The innovativeness and success of this voluntary project garnered a prestigious Vice-Presidential Hammer Award, given to projects that help the government work better and cost less. For more information, contact: Greg Macek, (202) 260-9597.

Promoting Risk Reduction

Promote the reduction of risks, particularly due to exposure, and encourage responsible risk management practices throughout the life cycle of major chemicals of concern.

Chicago Cumulative Risk Initiative

A petition from 11 Community Advocacy Groups set in motion a project to develop and test a more responsive, community-based, pollution prevention-type approach for dealing with cumulative risk from dioxins, furans, mercury, cadmium, and lead.

In February 1996, OPPT received a petition requesting that EPA regulate the disposal of dioxins, furans, mercury, cadmium, and lead through air deposition from eight incinerators slated to begin operating in Cook County, Illinois and Lake County, Indiana. While the petition itself was denied and subsequently withdrawn, OPPT felt that there were significant concerns with national environmental justice implications associated with this issue. An OPPT workgroup recommended that the Agency and the petitioners cooperate in a project to address cumulative environmental loading (the effects and risks in an area which is subject to several pollutants).

At the end of FY96, OPPT had initiated contracts to create a cumulative environmental loading profile (identifying the various chemicals to which residents are exposed) for the metropolitan Chicago area, and to convene a workshop to develop ways to use this profile. Both of these activities were scheduled for completion by March, 1997. Next steps are to apply the Science Policy Council's cumulative risk matrix, a tool for evaluating the combined impact of exposure to several chemicals at once, and to work on minimizing the pollution and initiating remediation. For more information, contact: James Boles, (202) 260-3969.

Dioxin/Furan Test Rule

OPPT became concerned that certain chemical products might be contaminated with polyhalogenated dioxins and/or furans, chemicals with known health risks. A TSCA Section 4 test rule was issued in 1987 to determine whether contamination was occurring so that further action could be taken if necessary.

There is potential for certain chemical products to be contaminated by polyhalogenated dibenzo-p-dioxins and dibenzofurans (D/F). Because of this, OPPT is concerned that the production, processing, distribution, use, and disposal of certain chemicals may present an unreasonable risk of injury to human health and the environment. To obtain additional information on the presence of these impurities, EPA issued a rule (40 CFR Part 766 on June 5, 1987) covering a number of chemicals identified as having the greatest potential of being contaminated with D/F. The final rule requires each company that manufactures or

imports a chemical listed in the rule to develop and submit an analytical protocol and sampling plan for EPA approval, and to analyze samples for EPA review.

EPA's data review and further actions based on those reviews are guided by a 1988 Consent Decree between EPA, the National Wildlife Federation and the Environmental Defense Fund. This rule has generated valuable exposure data that have been used by other OPPT programs. One outcome was the development of a significant new use rule to inhibit the reintroduction of a high dioxin-containing chloranil. For more information, contact: Todd Holderman, (202) 260-6917.

Land Application of Sludge from Pulp and Paper Mills

The American Forest and Paper Association agreed to voluntarily reduce the risk posed by dioxins and furans in pulp and paper mill sludge disposed of on land.

The goal of this project is to reduce the amounts of dioxins and furans that are present in sludge from pulp and paper mills if the sludge is being applied to land. In 1994, the American Forest and Paper Association, and the mills it represents, voluntarily agreed to undertake risk reduction activities. The agreement establishes standards and management practices for those facilities that apply the contaminated sludge to land. A survey of mills conducted by the American Forest and Paper Association in 1996 indicated that the overwhelming majority had reduced the amounts of dioxins and furans in sludge to the amount specified in the agreement. For more information, contact: Joseph Schechter, (202) 260-1540.

Lead Programs

Lead exposure can produce serious health effects, particularly in children. OPPT works to reduce exposure to this chemical through education, right-to-know, and use of sound science principles.

Years of using leaded gasoline and lead based paint have spread this chemical liberally throughout our environment, with sometimes devastating results. Overexposure of children can result in lead poisoning, with symptoms such as IQ deficiencies, reading and learning disabilities, impaired hearing, reduced attention spans, hyperactivity, anti-social behavior, and other problems. Children are most susceptible to lead poisoning, and despite current controls on the use of lead, as many as 1.7 million children age five and under may be affected by lead already in the environment. OPPT works to reduce exposure to this chemical, and thus reduce the risk of lead poisoning. The following nine projects describe current activities within the Lead Program.

Additional Analysis of the XRF/Test Kit Study

Being able to accurately determine the lead content of paint,

soil, and other materials is critical to effective remediation. EPA wanted more information on how certain field measurements of lead compared to laboratory analysis methods, and conducted a field evaluation survey. Technical bulletins will be published to address some issues not already covered in previous reports.

To determine the accuracy of field methods for lead testing, OPPT conducted a field evaluation study which compared portable X-Ray Florescence (XRF — portable electric instruments which test the amount of lead in a painted surface) and lead test kits to laboratory analysis methods. OPPT has completed drafts of three supplementary bulletins to provide details of its findings:

- *Sources of Variation in Lead in Paint Measurements* will describe the amount of variation in measurements of lead to determine the magnitude as well as the sources of variation.

- *XRF Performance Relative To a 0.7 mg/cm2 Lead Standard* will describe whether the XRF instruments can be used to ascertain the presence or absence of lead relative to a 0.7 mg/cm2 lead standard, and

- *Analysis of Reading Times* will report on whether the reading times of each individual portable XRF instrument has an effect on the reliability and the accuracy of the measurements made by that instrument. When these bulletins are finalized in the first half of 1997, they will be available through the National Lead Information Center Clearing house (1-800-424-LEAD). For more information, contact: John Schwemberger, (202) 260-7195.

Community-Based Lead Abatement Demonstration Project

Elevated blood lead levels are more common in poor, minority children than in more affluent populations. OPPT is concerned about this, and has initiated a demonstration project aimed at: reducing lead poisoning in poor children; creating a proven, reproducible program to reduce blood lead levels; and obtaining feedback on how to coordinate and improve individual programs

In 1993, OPPT formed an interagency workgroup to test a community-based approach formulated by the participants for preventing childhood lead poisoning. Philadelphia received a non-competitive grant in 1994 from EPA and the Department of Health and Human Services. In 1995, competitive grants were awarded to five local government-community advocacy group partnerships.

The goals of this initiative are to: 1) demonstrate that an effective, well-planned program can serve to significantly reduce poor children's blood lead levels, 2) demonstrate the utility and beneficial nature of public, private, and community cooperation in the prevention of childhood lead poisoning, 3) accomplish specific primary and sec-

ondary lead poisoning prevention tasks: blood lead screening, hazard reduction, and education, 4) assess and document the project's success and shortcomings by providing for careful evaluation and data collection, and 5) foster community self-sufficiency through jobs creation and empowerment. For more information, contact: James Boles, (202) 260-3969.

Coordinating Lead Activities Across the Federal Government

EPA is not the only federal agency with a lead program; approximately 20 federal organizations have an interest in this problem. OPPT is coordinating efforts to plan and implement a unified and consistent federal lead program.

Coordination of the federal lead program has been done primarily through the Federal Interagency Lead-Based Paint Task Force. EPA and the Department of Housing and Urban Development (HUD) are the co-chairs of this task force, which was established in 1989. The task force is comprised of participants from approximately 20 federal departments or agencies with a mailing list of nearly 120 names. The task force meets every six to eight weeks in Washington, DC.

In addition to actively managing this group, including serving as executive secretary, in 1996 OPPT worked with the Department of Defense to ensure that its programs were consistent with EPA's regulations and goals. OPPT also provided input to the Centers for Disease Control and Prevention (CDC) on their lead screening policy, to HUD on rules dealing with lead in federally owned housing, and to the Consumer Product Safety Commission on an analysis of lead in playground soil. 1996 also saw the completion of the first draft of the Tri-Agency (EPA, CDC, HUD) five-year progress report/vision statement on lead, incorporating ideas from other agencies. For more information, contact: Karen Maher, (202) 260-3894.

Distribution of Soil Lead in the Nation's Housing

EPA examined soil information obtained from a lead survey conducted by HUD to determine associations between soil lead levels and: building age, degree of urbanization, census region, and the presence and condition of lead-based paint.

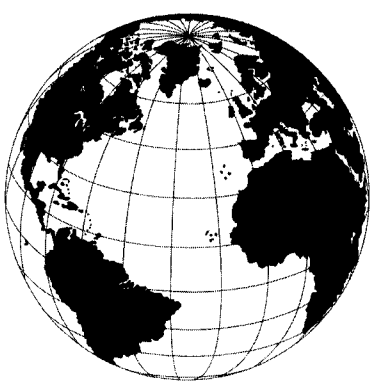
In 1990, HUD and EPA jointly conducted a National Survey of Lead-Based Paint in Housing, including information on levels of lead in paint, dust, and soil. In 1996, OPPT focused specifically on better characterizing the extent and magnitude of lead hazards from soil in the United States. The results are contained in the report *Distributions of Soil Lead in the Nation's Housing Stock* which is available through the Lead Information Center Clearinghouse (1-800-424-LEAD). For more information, contact: Samuel F. Brown, (202) 260-2282.

Identification of Lead-Based Paint Hazards, Lead-Contaminated Dust, and Lead-Contaminated Soil

Childhood lead poisoning is a preventable disease, but to prevent it effectively, the public and decision makers need information to help evaluate homes and schools for lead-based paint hazards and develop appropriate hazard control strategies.

Congress required EPA to establish regulatory standards for identifying lead-based paint hazards, lead-contaminated dust, and lead-contaminated soil. OPPT issued interim guidance in 1994 and 1995, and made considerable progress toward development of a proposed rule in FY96. Project staff established and implemented a Dialogue Process to obtain input from interested parties on a range of regulatory and implementation issues.

Following this process, OPPT staff identified more than two dozen policy issues and developed recommendations to address the vast majority of these issues. Throughout FY96, OPPT also worked to develop a comprehensive risk assessment to help support the Agency's regulatory decisions on lead. OPPT has worked closely with EPA's Office of Emergency Remedial Response in light of the Superfund Program's interest in lead in soil. For more information, contact: Jonathan Jacobson, (202) 260-3779.



International Lead Program

Many international organizations address lead hazards and exposures, and OPPT works to help other countries further their programs.

The international lead program is an ongoing effort to work on lead risk reduction globally. Most countries are focused on reducing the use of leaded gasoline, yet this is only one of many potential sources of lead exposure. In order to further other countries' goals to effectively reduce exposures to lead, for example, OPPT is coordinating with the Pan-American Health Organization (PAHO) to start a lead inventory project in Brazil. The lead inventory project will identify lead hazards and develop an action plan for addressing these hazards. Once the initial inventory is complete, methods used to identify lead hazards may be shared with other countries interested in identifying and reducing lead hazard risks in order that they may develop an action plan. This project will promote information sharing on progressive technologies and alternatives to reduce lead hazard risks.

Another important international lead effort OPPT is involved in is work with the Organization for Economic Co-operation and Development (OECD). OPPT's participation was vital in encouraging OECD to adopt a Council Resolution and Ministerial Declaration on Risk Reduction. The document specifically addressed lead hazards of concern including lead in gasoline, children's products, ceramic ware, and drinking water. Industry agreed to voluntarily develop an action plan to further the risk reduction goal.

OPPT is working to get countries which are not members of the OECD to agree to this document on risk reduction through the Intergovernmental Forum on Chemical Safety. The International Lead Management Council which represents the lead industry is developing industry's voluntary risk reduction plan to help the international effort on lead. For more information, contact: Tova Spector, (202) 260-3467.

National Health and Nutrition Examination Survey (NHANES)

OPPT has the opportunity to obtain valuable information on children's exposure to lead in homes through a survey which will be conducted by the National Center for Health Statistics. EPA has set up a workgroup to coordinate input into this survey.

The National Center for Health Statistics (NCHS) is currently planning the eighth in a series of surveys conducted since 1960, known as NHANES, the National Health and Nutrition Examination Survey. NCHS contacted EPA to request input for this survey. EPA's Office of Research and Development is leading an Agency workgroup to coordinate the Agency's input. OPPT has requested that the survey include questions on children's behavior patterns and the presence and condition of lead paint in the house. Results will be correlated with measurements of children's blood lead levels and with environmental measurements of lead in house dust. The workgroup was scheduled to send the final version of the proposal to NCHS in January 1997. For more information, contact: Susan Dillman, (202) 260-5375.

National Lead Laboratory Accreditation Program (NLLAP)

It is important for homeowners and other concerned people to be able to accurately determine whether their residence or workplace contains lead. In response to this need, OPPT maintains the National Lead Laboratory Accreditation Program (NLLAP) to assure homeowners that laboratory analyses are conducted properly.

NLLAP recognizes laboratories which have demonstrated they are capable of accurately analyzing for lead in dust, soil, and paint chip samples. Laboratories recognized by EPA through this program are placed on a list which is updated monthly and made available to the public. All laboratories recognized by this accreditation program are required to undergo on-site audits and to perform successfully in a quarterly sample testing program. During FY96, the program recognized 21 additional laboratories, increasing the total number to 100. Another 50 laboratories are in the process of obtaining accreditation. Several states require the use of accredited laboratories for testing for environmental lead.

It is anticipated that in FY97, the program will be modified in order to acknowledge laboratories which can conduct analyses solely in the field (field-operation laboratories). In addition, increased performance-based

standards will be used for training laboratory analysts and technicians. Contact the National Lead Information Center (1-800-424-LEAD) to request a copy of the list of accreditated laboratories. For more information, contact: John Scalera, (202) 260-6709.

Task Force on Mercury

Offices across EPA have an interest in mercury, and an Agency task force was established so that programs throughout EPA could share information and promote mercury risk management actions.

The Agency Mercury Task Force was formed to provide a cross-agency forum where program offices could share information on mercury activities on a regular basis and to promote mercury risk management actions. The task force is chaired by OPPTS, Region 5, and the Office of Water. Initially formed in 1994 to develop a coordinated response to the Department of Defense's holdings of 11 million pounds of surplus mercury, the mission of the task force has expanded to include developing a comprehensive mercury strategy. Thus far, the task force has developed an Agency position on the Department of Defense's stockpile sales; identified the need to investigate protective mercury stabilization technologies for high concentration mercury wastes; raised awareness that a multi-media approach is necessary with mercury issues; and developed a regular Agency-wide forum for information exchange. The task force has also been instrumental in adding mercury to the agendas of several international forums. For more information, contact: Melinda Pearce, (202) 260-3397.

Training for Lead-Based Paint Abatement Activities

Safe removal of lead-based paint requires a professional who knows how to evaluate and remove the hazard without worsening the problem. To ensure that homeowners and others who need these services can locate trained professionals, EPA issued rules on the training and certification of lead-based paint inspectors and abatement professionals.

In August 1996, the final lead-based paint activities rule was promulgated, as mandated by the 1992 Residential Lead-based Paint Hazard Reduction Act (Sections 402 and 404). This rule contains several key features: 1) training and certification requirements to ensure the proficiency of contractors who conduct lead-based paint inspections, risk assessments, and abatements in residences and day care centers, 2) accreditation requirements to ensure that training programs provide quality instruction, 3) work practice standards to ensure that lead-based paint activities are conducted safely, reliably, and effectively, and 4) procedures for states and tribes to apply to EPA for authorization to set up their own accreditation programs. States and tribes have two years to apply. After two years, EPA will administer the above program in any remaining states and tribal areas. Over the next two years the Agency will

be working, through Regional offices and the Forum on State and Tribal Toxics Action, to help states and tribes develop programs that will meet with EPA approval. For more information, contact: Mark Henshall, (202) 260-5089.

PCB Disposal Amendments

Polychlorinated biphenyls (PCBs) are mixtures of a certain class of carcinogenic synthetic organic chemicals which are regulated by OPPT and other federal agencies. The disposal amendments streamline existing PCB regulations to reduce costs to the regulated community and implement the program based on risk, where possible.

This rulemaking represents the first comprehensive review of the 16-year-old program for disposal of PCBs. The new rules will provide options and flexibility for implementation. They will lower costs to the regulated community, reduce duplicative requirements, harmonize disposal standards with other federal programs, and change or remove outdated requirements. The Notice of Final Rulemaking is expected to be published in 1997. For more information, contact: Tony Baney, (202) 260-3933.

PCB Import for Disposal Rule, Transboundary Considerations

To lessen the chances for mismanagement of PCB wastes, OPPT published a rule which harmonizes the transboundary requirements for PCBs with all other hazardous wastes and allows for the import and disposal of PCBs in the United States.

This rule covers the import of PCBs for disposal and allows for reduced requirements on samples imported for testing and treatability studies, PCBs being returned from U.S. government facilities in foreign countries, and of PCBs being moved into the continental United States from other States and territories. The Notice of Final Rulemaking was published on March 18, 1996. EPA's Office of Enforcement and Compliance Assurance has responsibility for implementing the program, such as receiving, processing and approving import requests. OPPT helps interpret the regulations and develop guidance. Import of PCBs for disposal is now managed similarly to other wastes subject to EPA requirements. For more information, contact: Peter Gimlin, (202) 260-3972.

PCB International, North American Regional Action Plan

The United States is committed to the principle of sound management of chemicals. Developing and implementing national, regional and international protocols can reduce or eliminate exposure from persistent organic pollutants such as PCBs.

When chemicals which persist in the environment and bioaccumulate are not properly managed throughout their life cycle, they can be transported aerially over long distances and present health and environmental risks far from the country where they were used

or disposed of. PCBs are one such chemical. Regional (e.g., North American Commission for Environmental Cooperation), semi-global (e.g., United Nations Economic Commission for Europe) and global organizations (e.g., the United Nations Environment Programme) are each developing plans or protocols for the sound management of PCBs. Each program has common elements including controls on manufacture, processing, distribution in commerce, use, and disposal. OPPT's participation is essential to ensure consistency across programs.

The PCB Regional Action Plan for North America has been drafted, released for public comment, and will be signed by the environmental ministers from Canada, Mexico and the U.S. in 1997. Action plans and binding protocols are in various stages of development. Many other federal pollution control programs also regulate PCBs. Actions and standards agreed to in Regional Action Plans or binding global protocols would apply to all programs regulating PCBs. For more information, contact: Denise Wright, (202) 260-2351.

Refractory Ceramic Fibers

Refractory ceramic fibers are a probable human carcinogen, and are used in industrial settings where they could pose a hazard to workers. The Refractory Ceramic Fiber Coalition agreed to gather worker exposure information over a five-year period so EPA can determine whether protective action is required.

Refractory ceramic fibers (RCFs) are manmade fibers produced from the melting and blowing or spinning of kaolin clay or alumina and silica. They are used primarily for high temperature industrial insulation applications, most frequently as a lining in high temperature furnaces, heaters and kilns. RCFs are also used in the aerospace and automotive industries, and in certain commercial and consumer applications, such as gas fireplace logs. Based on evidence from animal studies, EPA has classified RCFs as a probable human carcinogen.

In 1993, EPA and the Refractory Ceramic Fiber Coalition entered into a five-year workplace monitoring agreement to gather more information on the magnitude of exposure to workers. In 1996 the RCF Coalition completed the third of five years of worker exposure monitoring. The data show continued reductions in most areas, which was confirmed by EPA. The RCF Coalition's aggressive product stewardship program is an important factor in the decreasing exposures. Once all data has been collected, EPA will work with the Occupational Safety and Health Administration (OSHA) and the National Institute of Occupational Safety and Health (NIOSH) to determine whether or not RCFs present an unreasonable risk to human health and the environment. For more information, contact: Sam Brown, (202) 260-2282 or Cindy Fournier, (202) 260-1537.

Synthetic Mineral Fibers: Interagency Workgroup

Offices across the federal government engage in managing risks from synthetic mineral fibers management.

To coordinate synthetic mineral fibers management activities, an interagency workgroup was established. The Interagency Synthetic Mineral Fibers Workgroup was formed to provide an interagency forum where the federal government could share information on a regular basis and promote synthetic mineral fibers management actions.

The workgroup is chaired by OPPTS, and has participation from the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the Consumer Product Safety Commission (CPSC), and the National Institute for Standards and Technology (NIST). For more information, contact: Melinda Pearce, (202) 260-3397.

Whole House Initiative

OPPT is spearheading an EPA-wide effort to take a comprehensive look at all types of indoor and outdoor pollution in disenfranchised and disadvantaged communities. The goals of the project are to reduce overall exposure to pollutants, ensure that mitigation of indoor pollutants is comprehensive, create economic opportunities in communities, and demonstrate a federal/state/local coordinated approach to environmental hazards.

This initiative includes training people to inspect a home for selected environmental hazards. In 1996, a draft of the first training module, on basic environmental inspection was produced. In addition, Agency data related to lead were assembled so that communities could more easily choose those lead risk management activities most suited for their communities. This initiative began in 1994 with OPPT's formation of a workgroup with members from the Department of Housing and Urban Development; the Administration for Children and Families (Department of Health and Human Services); the Centers for Disease Control; the Department of Energy; and EPA's Offices of Small and Disadvantaged Business Utilization, Air and Radiation, and Enforcement and Compliance Assurance. This group cooperated in applying a multimedia Geographic Information Systems (GIS) database and creating an integrated, multimedia environmental inspection training program.

A grant was awarded to Cleveland, Ohio to field test both the data and training. This project is targeted at: 1) enabling parties to reduce multimedia exposures to unhealthful levels of pollution both inside and outside the home in disenfranchised and disadvantaged communities; 2) ensuring that mitigation of hazardous

exposure in the home is comprehensive and addresses lead, asbestos, weatherization (e.g., window replacement), indoor air quality and radon exposure issues; 3) building capacity and economic opportunities in targeted communities through creating or strengthening an infrastructure that provides community access to state agencies responsible for reducing environmental exposures; and 4) demonstrating how the federal government and state/local counterparts can provide a comprehensive and coordinated response to potential hazards in targeted communities. For more information, contact: James Boles, (202) 260-3969.

Promoting Public Understanding of Risks

Promote public understanding of the risks of chemicals and public involvement in environmental decision making through the development and dissemination of information on toxic chemicals.

Aqueous Solvents Hazard Guide

Many industries are switching from halogenated solvents to aqueous and semi-aqueous products for metal cleaning.

The purpose of this aqueous solvents hazard guide is to inform companies about the environmental effects of the aqueous and semi-aqueous products so they can choose the most environmentally safe solvent that satisfies their precise need. The guide, completed in September, 1996, rates products qualitatively for ecological toxicity and for environmental persistence. It is in the form of a wall chart, 17 ½ inches by 11 inches. Copies may be obtained by calling the TSCA Hotline at (202) 554-1404. For more information, contact: Joseph Schechter, (202) 260-1540.

Brochure on Lead Testing

Work is underway to publish a brochure on "Testing Your Residence for Lead in Paint, Dust, and Soil" which will update and replace 1993 fact sheets on Lead Testing and Test Kits.

The upcoming brochure will provide citizens with technical guidance on recent regulations which deal with the accreditation of lead inspection and removal professionals; describe homeowner notification provisions; encourage residents to test their homes for lead (for homes built before 1978); and describe some of the basic elements of testing. A draft of the brochure is ready for peer review, including review by all EPA Regional Lead Coordinators. The final brochure will be available through the National Lead Information Center Clearinghouse (1-800-424-LEAD) and through the EPA lead home page (http://www.epa.gov/opptintr/lead/index.html). For more information, contact: John Schwemberger, (202) 260-7195.

Chemical Fact Sheets

OPPT has a wealth of information on individual chemicals which is useful to the public. To make this information easily accessible and understandable, OPPT has initiated an ongoing effort to summarize, review, and publish fact sheets on individual chemicals.

OPPT's chemical fact sheets summarize assessment information on chemicals in commerce and are written so that the public can easily understand the information presented. They contain OPPT's conclusions on production volume, uses, releases to and fate in the environment, human health and environmental hazard potential, and regulatory status within the federal government. As such, they draw

from the technical expertise of each division within OPPT. All fact sheets undergo a rigorous review before the Office makes them available to the public by distribution on the Internet (http://www.epa.gov/chemfact) and through the chemical desk (202-260-3998). The fact sheet effort began as a pilot project in FY95. A focus group led by OPPT and consisting of representatives from industry, environmental groups, labor, and EPA regional offices determined the information and level of detail the fact sheets would contain.

The first 20 fact sheets were completed as a part of this pilot effort, and were published on the Internet in FY96. Monitoring this site during the first few months showed 4,000 "hits" per month, many from Eastern Europe. The Office also reviewed and commented on 20 additional fact sheets during FY96 and is in the process of publishing these on the Internet. OPPT has an additional 50 fact sheets in various stages of completion and estimates that these will be available for Internet distribution by the end of FY97. The fact sheet project is streamlining its efforts to collect, summarize, and review Office assessment information as part of the Office's electronic office initiative, which should speed up the process of completing additional fact sheets. For more information, contact: Richard Wormell, (202) 260-3493.

Chemicals on Reporting Rules (CORR)

"How is a chemical regulated under TSCA?" This frequently-posed question can be quickly answered by searching the Chemicals On Reporting Rules (CORR) CHEMICAL file to find the chemical name, Chemical Abstract Service number, Premanufacture Notice number, and the TSCA sections which apply. The CHEMICAL file also contains corresponding Federal Register citations. A separate FEDREG file contains summaries of those final and proposed rules published in the Federal Register cited in the CHEMICAL file.

The CORR database contains information on chemicals, regulated under several sections of TSCA, and the Emergency Planning and Community Right-to-Know Act (EPCRA) section 313, that have been the subject of proposed or final regulations issued by OPPT in the Federal Register. Chemicals subject to TSCA section 5(e) consent orders are also covered. The database is updated quarterly in January, April, July, and October. It is available from the TSCA Hotline, (202) 554-1404 on diskette, through the Internet (http://www.epa.gov/docs/CORR), and through RTK-Net. For more information, contact: Jim Bradshaw, (202) 260-1543.

Community Environmental Partnership Project: Baltimore, MD

Local, state and federal governments have joined forces to develop a partnership with local neighborhoods and businesses to pilot a community-based approach to environmental protection in South Baltimore.

This pilot project is designed to bring together neighborhood businesses, residents, and government to make neighborhoods healthier, cleaner and safer. The South Baltimore area has environmental problems from pollution and waste from the chemical plants clustered there, as well as many housing and health issues. The neighborhood businesses and residents of Brooklyn, Cherry Hill, Curtis Bay, Fairfield, Wagner's Point and Brooklyn Park are working together with government to make their neighborhoods better places to live and work. In addition to assisting these specific Baltimore communities, OPPT expects to develop a better understanding of the training and technical analysis the Office can provide to neighborhoods so they can work together to address environmental concerns that impact their lives directly.

In FY96, OPPT and community residents established the partnership with local businesses and government, and held public meetings. The first such meeting, held in July, 1996, attracted 170 residents and businesses and was key to building support in the communityand increasing awareness among all parties. The community discussed an array of concerns facing them, decided on a set of priorities, and established working committees on Cleanup of Trash, Illegal Dumping and Housing; Air Quality and Transportation; Human Health Effects; Economic Development; Water Quality, Parks, and Natural Resources; Outreach and Communication; and a Coordinating Team. For more information, contact: Hank Topper, (202) 260-6750.

Confidential Business Information: State Access

OPPT collects a large amount of data under TSCA which is claimed as confidential by businesses. A pilot project has found that it would be beneficial to allow states access to this data.

The pilot program allowed Wisconsin, Georgia, Illinois and New York to obtain access to TSCA data, including confidential business information, for the sole purpose of quantifying the value of the data to state programs. In late spring, 1996, the four state reports were completed and made available to the public. In early summer, EPA sought public comment. By mid-October about 60 comments had been received, including 32 comments from 28 states.

Preliminary information indicates that TSCA data would be useful for states when undertaking risk assessments to establish air and water release permit standards. The pilot project indicates that the information available through TSCA is not available from other sources, and if made available to states could provide the basis for regulatory reform, potentially resulting in regulatory relief.

EPA is still considering the reports and the comments and has not yet determined next appropriate steps. This issue is not unique to TSCA. OPPT staff are in contact with personnel who implement the Federal Food, Drug and Cosmetic Act (FFDCA) and the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) to identify common issues and potential solutions. For more information, contact: Scott M. Sherlock, (202) 260-1536.

Consumer Labeling Initiative

This project will lead to more informative product labels, so that consumers can make informed choices about the products they use.

The goals of the Consumer Labeling Initiative are to foster pollution prevention, design product labels so they give consumers the information they need to make informed choices, and improve consumer understanding of the labels so they can make informed choices among products and can use and dispose of chosen products safely and effectively. The initiative is focusing on products where it is especially important that consumers carefully follow label instructions: indoor insecticides, outdoor pesticides, household antimicrobial products, and products for cleaning hard surfaces. This is a pilot, multiphase, partnership project of local, state, and federal agencies; manufacturers of consumer products; trade associations, public interest groups; market research experts; and others.

In 1996, the initiative produced a report, *The Consumer Labeling Initiative Phase I Report*, that included recommendations for next steps, such as testing alternative labels to see which are most effective. The report also summarized existing knowledge about what makes labels effective, including original research based on direct contacts with consumers. For more information, contact: Mary Dominiak, (202) 260-7768; Julie Lynch, (202) 260-7768; Steve Morrill, (703) 308-8319.

Customer Service Standards for Partnership Programs

As part of the Federal Government's reinvention effort, customer service standards were developed to guide employees in providing the highest quality service possible to customers. OPPT is leading the effort to produce standards for voluntary pollution prevention programs.

OPPT is leading a workgroup consisting of representatives from across the Agency, including Region III, to develop standards to help EPA provide high quality service in voluntary programs such as 33/50, Climate Wise, WasteWi$e, the Water Alliances for Voluntary Efficiency, Green Lights, and the Pesticides Environmental Stewardship Program. Early drafts were reviewed by the Information and Assessments Committee of the National Advisory Council for Environmental Policy and Technology and com-

pany representatives of the Global Environmental Management Initiative. Final standards were agreed upon in late September 1995. These standards emphasize professional courtesy and respect; accurate, up-to-date, and reliable information, products, and services; responsiveness to inquiries; and successful referrals.

In FY96, a report was prepared highlighting the progress made on the standards and describing plans for EPA;s 1996 annual customer service document. In addition, universal standards have been developed that apply to all EPA employees, not just those employees working with voluntary programs. The Office of Pollution Prevention and Toxics is developing a plan to introduce both sets of standards to OPPT employees early in 1997. For more information, contact: Darlene Harrod, (202) 260-6904.

ECOSAR Manual

OPPT uses Structure Activity Relationships (SAR) to predict the environmental toxicity of various chemicals to aquatic organisms. To share the methodology with industry and others, OPPT has developed a software program called ECOSAR and an accompanying manual, which are regularly updated.

ECOSAR predicts acute and chronic toxicity of industrial chemicals to aquatic organisms without the need to perform actual tests. The software program called ECOSAR depends on the principle that there are predictable relationships between the structure and properties of chemicals on one hand, and their toxicity or biological activity on the other hand. If researchers know the toxicity of one or more chemicals in a class or category, SARs can be used to predict the toxicity of chemicals with similar structures. Industry can use ECOSAR to screen for environmental toxicity when seeking safer substitutes for existing chemicals.

Since 1986, OPPT has produced one version of ECOSAR and two versions of the structure-activity manual. The latest version of the manual, *Estimating Toxicity of Industrial Chemicals to Aquatic Organisms Using Structure Activity Relationships*, (2nd Edition) was published in 1996 (EPA-R-93-001). This manual contains more than 200 structure activity relationships for 78 chemical classes. A third edition of the manual and an updated and more user-friendly version of ECOSAR are being prepared. The manual and software may be obtained from EPA at (513) 569-7562, or from the National Technical Information Service (NTIS) at 703-487-4650; NTIS publication numbers are: Computer Program PB94-500485, User's Guide PB94-104668. For more information, contact: Gordon Cash, (202) 260-3900.

Facility Identification Initiative

The Facility Identification Initiative strives to establish and maintain data linkages within EPA systems and to promote public access to such data through the development of a unique identifier and consistent set of place-based information for all facilities regulated by EPA.

This initiative was developed based on recommendations from a 1994 National Advisory Council for Environmental Policy and Technology (NACEPT) task force report on improving Agency information resources management (IRM). That report recommended establishment of a key facility identifier and improved public access to Agency data on regulated facilities. OPPT proposed the establishment of the Facility Identification Initiative in response to a call for projects to support high priority government reinvention activities. An Agency-wide workgroup consisting of all major media programs, regions and state representatives was established. The workgroup will review public comments and recommend a mechanism for implementing the Facility Identification Initiative.

Further consultation and agreements will need to be established among EPA program offices regarding necessary changes to their database structures to support facility data linkages. This project works in partnership with the One-Stop Reporting Initiative and other IRM improvement, data standardization and public access initiatives. For more information, contact: Allan Abramson, (202) 260-3938.

Forum on State and Tribal Toxics Action (FOSTTA)

FOSTTA has forged a communication network linking states, tribes, OPPT, and EPA's Office of Enforcement and Compliance Assurance (OECA) on a variety of toxics-related issues. The increased communication results in the development of EPA rules and policies that are more technically sound and more easily implemented.

In an effort to improve communication with the states and tribes on toxics issues, OPPT and OECA created FOSTTA in 1991. Senior state and tribal environmental and health experts meet three times a year with EPA officials, including EPA Regions, to discuss toxics-related issues. EPA gains an immediate "real world" state and tribal perspective on these issues, and the states and tribes have an opportunity to enhance information exchange with EPA and to provide their input on current issues.

FOSTTA is active in lead issues. For example, it is focusing on helping states pass legislation on lead hazard reduction and is implementing the training, certification and accreditation rule for lead contractors. FOSTTA's State and Tribal Enhancement Project (STEP) provided EPA with suggestions on how to integrate EPA's community-based environmental projects with ongoing state environmental programs. STEP also commented on the draft Catalogue of Tools, a listing of

information and analytical tools to be used in determining the characteristics and effects of pesticides and industrial chemicals on public health and the environment.

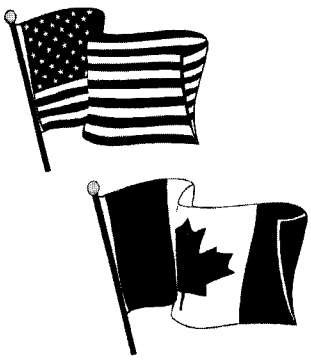
As part of the activities of STEP, the National Conference of State Legislatures (NCSL) published the 1996 Directory of State Toxics Contacts, which lists 560 state and 24 EPA Regional contacts. FOSTTA was also involved in the TSCA State Access to Confidential Business Information (CBI) Data Project, concluded in FY96. For more information, see the home page for NCSL at http://www.ncsl.org/programs/esnr/fostta.htm or contact: Darlene Harrod, (202) 260-6904.

Homeowner's Guide to Lead-Based Paint

Homeowners, parents, and others need to make decisions about reducing exposure to lead-based paint hazards. OPPT is compiling a comprehensive document of policies, guidance, and requirements on reducing risks from exposure to lead-based paint to help consumers make informed choices.

The Homeowner's Guide to Lead-Based Paint is the result of provisions in Title X of the Residential Lead-based Paint Hazard Reduction Act, which requires EPA to develop a public education program for lead-based paint hazards. In FY96, a draft of the document was produced using available identification and risk reduction methodology, renovation and remodeling guidance, health-based standards guidance, and existing federal and state regulatory efforts. In FY97, the draft document will be formatted into a handbook and widely distributed through the National Lead Information Center (1-800-424-LEAD) and other channels. For more information, contact: Megan Carroll, (202) 260-7269.

International Sharing of Information: Four Corners Agreement



This two-year pilot project is aimed at reducing the time it takes for U.S.-approved new industrial chemicals to enter the Canadian market.

The accord is commonly called the Four Corners Agreement because it was negotiated among officials from the U.S. and Canadian governments and by representatives from U.S. and Canadian industry groups. In 1994, at the urging of the U.S. and Canadian chemical industries, the two countries initiated bilateral talks on the issues associated with sharing hazard assessment data on new chemicals evaluated in the U.S. which were not yet on the Canadian Domestic Substances List. The agreement to share hazard data became effective April 15, 1996. The agreement could improve transboundary decision making on chemicals and could provide industry with opportunities to reduce both testing costs and time-to-market. To date, EPA has received five notices under the project. For more information, contact: Anna Coutlakis, (202) 260-3592.

Internet: OPPT Home Page and Other Activities

In an evolutionary process, OPPT is defining its Internet presence. The OPPT home page and program Internet site work will make it easier for Internet users to obtain EPA data and documents.

OPPT has successfully launched a home page and published a significant number of documents on it. There has been a steady improvement and expansion of OPPT offerings, including greater attention to links with related information elsewhere. An OPPT planning group provides support for the effort and shares information across the Office. OPPT also coordinates closely with EPA's Office of Information Resources Management which has oversight of the Agency home page. For more information, contact: Eileen Gibson, (202) 260-6449.

Lead in Mini-Blinds

The Consumer Product Safety Commission (CPSC) identified non-glossy vinyl mini-blinds containing lead as a potential exposure hazard. OPPT is working with CPSC to get accurate and timely information out to the public on this important issue.

After mini-blinds were implicated in two child lead poisoning cases, OPPT and other government agencies focused attention on vinyl mini-blinds as a possible source of lead exposure. CPSC performed tests on a variety of mini-blinds and concluded that over time the vinyl in non-glossy mini-blinds degrades from UV light and heat, and forms lead dust on the surface of the mini-blinds. CPSC released a press report on June 25, 1996 outlining the risks non-glossy vinyl mini-blinds pose to children 6 years and under. OPPT, CPSC, and associated industry groups developed an appropriate strategy for dealing with non-glossy vinyl mini-blinds. OPPT coordinated with EPA's Office of Solid Waste in developing guidance on safe disposal of lead-containing mini-blinds. The makers of the mini-blinds developed lead-free vinyl mini-blinds that are now available to the public.. A fact sheet instructs the public how to remove mini-blinds while preventing lead dust from contaminating other surfaces. For more information, contact: Tova Spector, (202) 260-3467.

Local Government Training

Local governments can be the primary deliverer of pollution prevention assistance to the public and business sectors if their officials have the appropriate knowledge. As part of an Agency-wide effort, OPPT is providing pollution prevention training to local officials through several training and educational programs. For example, OPPT is one of several organizations cooperating to produce a videotape to inform local officials about methods of using pollution prevention principles to decrease groundwater pollution, which is a leading local public health problem. For more information, contact: Lena Hann Ferris, (202) 260-2237.

National Environmental Performance Partnership System

EPA has established a National Environmental Performance Partnership System (NEPPS) with the states to help states develop and implement environmental programs based on the specific needs of each state. OPPT plays an important role in this partnership.

NEPPS and its accompany-ing Performance Partnership Agreements (PPGs) with individual states provide significantly greater flexibility for states to develop and administer environmental programs tailored to their particular environmental needs and objectives. Under NEPPS states can establish agreements with EPA to develop environmental plans and programs that are most appropriate to their jurisdictions and, if they choose to establish new PPGs, can also better direct available EPA funds to support those plans. OPPT has been a consistent contributor to the development of this new approach, from emphasizing multimedia efforts and pollution prevention in its design, to proposing preventive, cross-media measures for both advancing the progress and assessing the performance of the states. OPPT will monitor the progress of preventive environmental protection through these vehicles. For more information, contact: Lena Hann Ferris, (202) 260-2237.

National Library of Medicine Agreement

In response to a perceived need to better coordinate environmental and public health information, a project was begun to identify needs and develop a strategy. The current effort focuses on assessing the usefulness of available OPPT information products. This effort is just getting underway and the Regions will be invited to join the effort.

Working with the National Library of Medicine will help OPPT better identify the information products that are most useful to the public health community. Further exploration of available networks will help OPPT take better advantage of existing dissemination channels. For more information, contact: the TSCA Hotline, (202) 554-1404.

OPPT Newsletters

OPPT publishes several free newsletters so that the public will be aware of activities which are occurring in OPPT and which relate to the OPPT mission.

Pollution Prevention News serves as the focal point for multimedia news concerning major pollution prevention activities both inside and outside of EPA. This 12-page newsletter is published bi-monthly. For more information, contact: Maureen Eichelberger (202) 260-1772.

Chemicals in the Environment is a quarterly publication designed for a non-technical, general audience, with each issue focusing on a single topic. For more information, contact: Georgianne McDonald, (202) 260-4182.

Chemicals in Progress Bulletin serves as the "newsletter of record" for OPPT and reports on the Office's activities and the programs for which it has responsibility. This bulletin is published several times a year; there were two issues in FY96. For more information, contact: Maureen Eichelberger, (202) 260-1772.

Pollutant Release and Transfer Registers

OPPT is working internationally to help countries establish Right-to-Know programs, which are known internationally as Pollutant Release and Transfer Registers (PRTRs). OPPT is providing information about our programs and helping to promote similar programs in other countries.

OPPT has been involved in educating the international community on the process and the benefits of PRTRs. The UN Conference on Environment and Development (the Rio de Janiero Earth Summit) in 1992 created a formal international framework for promoting these registers. At the same time, bi-lateral and tri-lateral activities in North America (e.g., the North American Free Trade Agreement and the U.S.-Mexico border agreement) have spurred interest in PRTRs in other countries. OPPT supports this interest through various means.

In FY96, with OPPT support, the OECD Guidance to Governments Manual for PRTRs was drafted; an OECD Council Recommendation on PRTRs was introduced; and a Mexican Pilot Project in the state of Queretero was launched. OPPT has also drafted or supported several reports, including an international summary of PRTR activities and a tri-national report on PRTRs created by the North American Commission on Environmental Cooperation. For more information, contact: John Harmon, (202)260-6395.

Pollution Prevention Information Clearinghouse

The clearinghouse is a resource for information on pollution prevention for businesses, communities, and the public.

Established in 1992, the Pollution Prevention Information Clearinghouse (PPIC) is a distribution center for nonregulatory documents on pollution prevention prepared by the various EPA program offices. It maintains a telephone hotline for people who want to order documents or obtain information about other EPA information sources. PPIC also serves as a repository for documents relating to pollution prevention, waste minimization, and alternative technologies. PPIC is located in OPPT's library. It is open for browsing and personal service 8:30 a.m. to 4:00 p.m. EST. Documents are also available through EPA's Online Library System, through a synchronous (modem) communication at (919) 549-0720, with 7 data bits, even parity, 1 stop bit, and half duplex.

To obtain the most recent quarterly list of items that are available for distribution, call PPIC at (202) 260-1023 (24-hour

voice mail; personal assistance available 8:30 a.m.- 4 p.m. EST). PPIC also may be contacted by fax: (202) 260-4659, or E-mail: ppic@epa-mail.epa.gov. During FY96, the Clearinghouse responded to more than 3,500 inquiries; 17,000 documents were requested. For more information, contact: Beth Anderson, (202) 260-2602.

Real Estate Disclosure Rule (Section 1018) for Lead

OPPT published a rule which will ensure that families receive both specific information on the lead history of housing that they are planning to buy or rent and general information on preventing lead exposure. With this information, consumers can make informed housing decisions that protect their families from exposure to lead.

Congress passed the Residential Lead-Based Paint Hazard Reduction Act of 1992 to address the need to control exposure to lead-based paint hazards in residences. Section 1018 of the Act requires EPA and the U.S. Department of Housing and Urban Development (HUD) to promulgate joint regulations for disclosure of any known lead-based paint or lead-based paint hazards in houses for sale or lease. A proposed rule was published in 1994, and in 1995, EPA announced the availability of a pamphlet on lead-based paint hazards in the home, as required by law.

On March 6, 1996, EPA and HUD published the final lead disclosure rule, which OPPT is implementing. The rule requires sellers or leasors of housing units built before 1978 to provide potential buyers and renters with an EPA brochure that describes the hazards of lead and the analyses that can be performed to determine the lead status of the dwelling. As part of the implementation stage, EPA published Interpretive Guidance to help clear up complex implementation issues. In addition, EPA granted interim approval to California and Massachusetts to use lead hazard brochures developed by these states to take the place of the federal brochure in meeting the regulation requirements. The Lead Program is coordinating with the Radon Program in EPA's Air Office to develop educational materials and programs for the real estate community. For more information, contact: Ellie Clark, (202) 260-3402.

Register of Lists

This Register provides users inside and outside government with a listing of chemicals that are regulated by EPA. The Register of Lists is comprised of 33 separate chemical lists from across the Agency.

This database gives the public information about which chemicals are regulated by EPA and under which statutes. The database is a pointer system to provide information on regulatory activities led out of EPA Headquarters offices, although Region 5 plays a key role in processing the semi-annual updates for the Register of Lists. The Register is available electronically to EPA employees via the Agency LAN services menu. For more information, contact Linda Goodman, (202) 260-1521.

Risk Characterization Program

The goal of the Risk Characterization Program is to develop and maintain a program that will assure clearer, more transparent, consistent, and reasonable risk assessments across the Agency.

In the Fall of 1996, the Administrator requested that all EPA Offices develop their own Risk Characterization Implementation Statement that would indicate how each Office would implement March, 1995 guidance on Risk Characterization. In November, 1996, OPPT submitted its draft plan for review to the Agency's Risk Characterization Core group. Some of OPPT's FY96 highlights include:

- Active participation in all Agency colloquia devoted to risk characterization issues, including presentation of a case study, and discussion of its Implementation Statements;
- Completion of a Table of Risk Assessment Variables indicating OPPT statutes and differences between different types of assessments; and
- Formation of a sub-group to begin updating the OPPT risk assessment "tools", a compilation of 13 volumes of documents pertaining to the development of risk assessments.

Next, OPPT plans to complete the updating and streamlining of OPPT risk assessment tools; to offer at least one risk assessment/risk characterization course for OPPT staff/management; to share this training with the Office of Pesticide Programs and other EPA Offices; to review risk characterizations developed by OPPT; and to utilize these reviews to help improve OPPT assessments. OPPT will continue to work with other Agency program offices to achieve greater harmonization of risk assessments throughout EPA. For more information, contact: Lois Dicker, (202) 260-3387.

Risk Management 1 (RM1) Process

RM1 is a screening process whose purpose is the identification and prioritization of potential health and environmental risks of chemicals. This activity promotes public understanding of the risks of chemicals and encourages the public to join in the environmental decision-making process.

Begun in 1991, RM1 was designed to ensure that fact-finding and risk management activities could begin in a timely manner. Its focus is on high production volume chemicals. In FY96 testing programs for isopropanol and nonylphenol reached closure through RM1. Both testing programs provided significant information on the toxicity of these chemicals. The RM1 assessment was used as a vehicle to engage industry in further collaborative efforts to address issues that emerged during this analysis.

RM1 documents are maintained in the TSCA Administrative Record and are available from the TSCA Public Docket (Tel: (202) 260-7099; Fax: (202) 260-5069). The RM1 process will continue to advance OPPT's efforts to expand screening activities pertaining to high production volume chemicals in the TSCA Chemical Inventory. RM1 represents a risk assessment resource available to other program areas in OPPT. For more information, contact: Oscar Hernandez, (202) 260-1835.

Screening Information Data Set

OPPT participates in an international initiative whereby countries share the burden of testing and assessing potential risks of selected chemicals.

OPPT is working cooperatively with the Screening Information Data Set (SIDS) Program, a voluntary program operated through OECD, to "share the burden" of testing and assessing potential risks from high production volume chemicals among member countries. When complete data sets and risk assessments become available, member countries may decide to develop consistent (harmonized) risk reduction actions for chemicals found to be of concern to humans or the environment. In FY96, OPPT peer reviewed 40 non-U.S. and six U.S. sponsored SIDS.

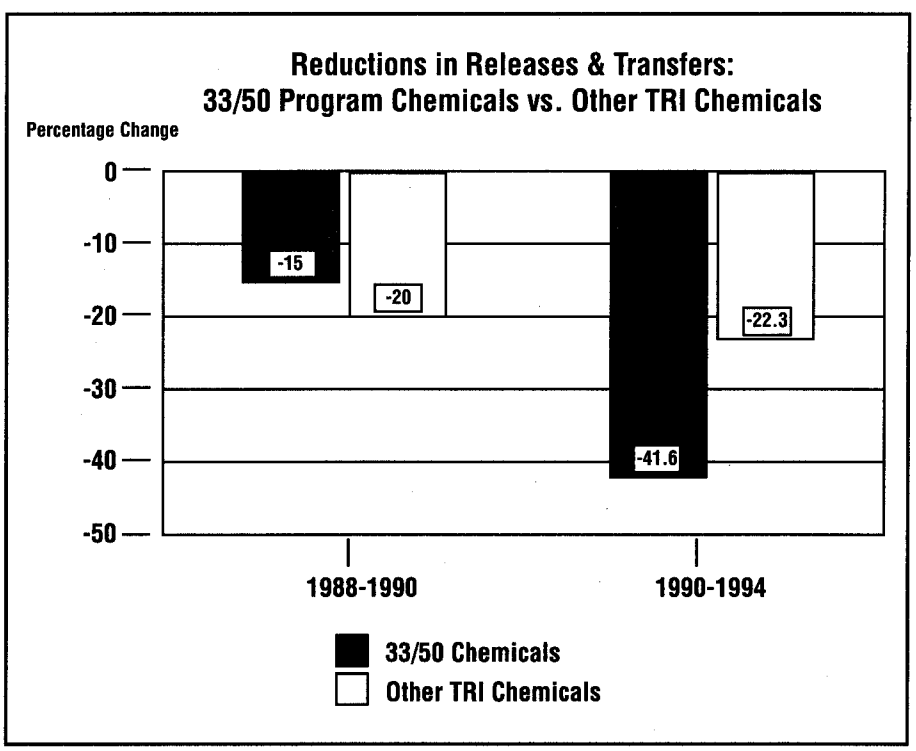
Initial Assessment Reports for the six U.S.-sponsored chemicals are being finalized. Currently, there are 51 U.S. sponsored chemicals at various stages within the SIDS process. OPPT intends to continue working with U.S. industry to move these chemicals through the process, and in the next year assist in the selection and induction of additional U.S.-sponsored chemicals into the SIDS Program. The SIDS Program complements OPPT's Chemical Testing Program by saving resources in negotiating testing agreements. Approximately three-quarters of the SIDS assessments are conducted by other countries. In addition, the SIDS Program makes the information on the completed cases available to other countries by publishing it in the United Nations' International Register of Potentially Toxic Chemicals. For more information, contact: Charlie Auer, (202) 260-3749.

33/50 Program

Established in 1991, the 33/50 Program was the first of its kind. It set broad national goals for the reduction of releases of 17 high-priority chemicals — national reductions of 33% by 1992 (against a 1988 baseline) and reductions of 50% by 1995 and invited companies to voluntarily meet these goals. Five years later, 1,300 companies have participated, annual releases of the 17 targeted chemicals as reported to the Toxics Release Inventory (TRI) have been reduced by 750 million pounds, and a family of voluntary programs has sprung up as a result of this grand experiment.

In 1988, the 17 targeted chemicals totaled 1.5 billion pounds of releases and transfers. The 33/50 program achieved its reduction goals a year ahead of schedule, meeting the 50% reduction goal in 1994 (as reported in 1996).

Participation in the 33/50 Program was enthusiastic — 1,300 companies owning more than 6,000 facilities signed on to the program voluntarily and agreed to cut back their emissions. Both the 33/50 Program and the participating companies were recognized for their achievements in 1996 with a Hammer Award given by the Vice President's National Performance Review. 33/50 also created a host of informative materials: 40 detailed case studies and 200 shorter success stories, describing steps that companies took to achieve their reductions. A conference in Washington, DC in September, 1996 highlighted the 33/50 Program's success and was attended by several hundred participating companies.



Having exceeded its goals, the 33/50 Program is preparing for retirement. In 1997, the Program will formally close out with a final data summary (including the 1995 data that will then be available). EPA is engaged in internal and external dialogues to explore the possibility of future partnership programs. For more information, contact: David Sarokin, (202) 260-6396.

Toxics Release Inventory Program

The Toxics Release Inventory (TRI) is a database which provides annual information to the public about releases of toxic chemicals from manufacturing facilities into the environment. It has been very successful in helping companies target toxic chemicals for reduction of releases.

TRI was established under the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 and expanded under the Pollution Prevention Act of 1990. Facilities report their TRI information annually to EPA and the state in which they are located. The information includes, among other things, amounts of each listed chemical released to the environment at the facility; amounts of each chemical shipped off-site for recycling, energy recovery, treatment, or disposal; amounts of each chemical recycled, burned for energy recovery, or treated at the facility; and maximum amounts of the chemical present on-site at the facility during the year.

With this information, communities know what toxic chemicals are present in their neighborhoods, emergency planners understand what potential threats they must be prepared to handle, and facility managers can identify opportunities for source reduction. Based on the principle that people have the "right-to-know" this information, the TRI program has become a model worldwide. For more information, contact: Maria Doa, (202) 260-9592. The following six projects describe current activities within TRI.

CD-ROM and Tutorial

The CD-Rom and Tutorial released by OPPT broadens access to the TRI data base. Beginning in 1989 and every year thereafter, EPA has published a CD-ROM containing the complete TRI data base. The latest CD-ROM contains the entire TRI data base for 1987 through 1994, as well as Chemical Fact Sheets containing health and environmental effects data for over 300 TRI chemicals.

Each year since its inception, the TRI CD-ROM has been enhanced to provide additional capabilities. For example, the CD-ROM published in 1996 contains a tutorial designed to assist new TRI users to better understand the concept of right-to-

know, the scope of the TRI program, and how to use the data. It is likely that new, Windows-based software will be developed or procured in order to keep pace with the explosion in graphically-oriented technology. OPPT will also be investigating the possibility of developing multiple CD-ROM products designed for audiences with differing needs, for example, the novice or casual user as well as the researcher. For more information, contact: Jan Erickson, (202) 260-9389.

Data Access and Release

TRI has proven to be a rich source of data for a broad public audience, allowing citizens, the media, environmental advocates, researchers, the business community, and others to influence and evaluate industry efforts to reduce toxics emissions. Educators are using the data to conduct studies and courses on the environment; labor unions are using the data to improve conditions for workers; and businesses are using the data in many ways — to reduce large stocks of toxic chemicals, to cut costs, to improve operations, and to reduce the use of toxic chemicals. Concerned citizens are a growing user group, accessing TRI to raise and answer questions about chemical releases in their communities. States use the national data to compare releases within industries.

The value of TRI increases as more people use it. Every year, EPA expands its outreach activities to include new potential users of the data, promote TRI awareness, provide access, and increase data usage. Many options are available for accessing TRI. EPA offers the data in a variety of hard copy and common computer and formats, including diskette, CD-ROM, and computer bulletin boards. It is available on an on-line national computer database, and is being added to the Internet. Libraries in communities all across the U.S. are committed to providing public access to TRI data. TRI reports are available from state government offices as well as from EPA. For each reporting year, many states make their data available before EPA releases data from the national database. Contact your state EPCRA Coordinator or your EPA Regional TRI Coordinator for assistance. For more information, contact: Linda Wunderlich, (202) 260-4075.

Expansion of TRI to Include Chemical Use Data

TRI is the main public source of data about the types and amounts of chemicals being released in specific geographic areas. EPA believes the addition of chemical use information will expand the usefulness of the TRI database. EPA is developing a

rule to expand Community Right-to-Know provisions to increase the information available to the public on chemical use.

EPA considers Community Right-to-Know to be among its most effective strategies for improving environmental performance. Appropriate expansion of this approach is an Agency and Administration priority. EPA began exploring the value of chemical use information in 1993. Chemical use is also commonly referred to as "materials accounting" data that potentially includes: amounts of a toxic chemical entering a facility, amounts transformed into products and wastes, and resulting amounts leaving the facility site. In determining whether and how to expand the TRI, OPPT may also consider alternative use-related data elements.

EPA's preliminary view is that chemical use information could provide important insights on issues such as: emergency preparedness issues related to the amounts of chemicals flowing through communities, the overall quantities of toxics going into products, worker safety and health issues, and facility pollution prevention performance. In 1996, OPPT put forth an Advance Notice of Proposed Rulemaking, which requested information in five main areas: 1) the premise for and utility of chemical use information, 2) Agency-wide environmental reporting issues, 3) impacts on confidential business information, 4) cost estimates, and 5) technical collection and interpretation issues. Upon completion of this review, EPA will determine if further action is appropriate. For more information, contact: Matt Gillen, (202) 260-1801.

TRI Chemical Expansion

The initial list of TRI substances included more than 300 chemicals and 20 chemical categories. On November 30, 1994, EPA added 286 chemicals and chemical categories to the list of toxic chemicals subject to TRI reporting. This action virtually doubled the number of chemicals now being reported to TRI, and significantly boosts the amount of information available to the public.

The addition of these chemicals and chemical categories is based on their acute human health effects, carcinogenicity, or other chronic health effects, and/or their adverse effects on the environment. The screening process for selecting the chemicals to be added included a review of current data sources, a human health and ecotoxicity screen, and a production volume screen. A thorough hazard assessment was also performed for the chemicals that were under review. (This information had already been used extensively by the public.) In 1996, OPPT

successfully defended this action in court. For more information, contact: Dan Bushman, (202) 260-6700.

TRI Facility Expansion

TRI provides information to the public on transfers and releases of 600 chemicals from certain industry sectors. This program has been a huge success in many ways, from providing needed information to citizens to encouraging industry to reduce toxic emissions. To expand the environmental benefits of this program, in FY 1996 OPPT issued a proposed rule to expand the industries which are required to report to the TRI.

The purpose of TRI Facility Expansion is to add industry sectors to the current list of manufacturing facilities required to report under Section 313 of EPCRA. This will greatly strengthen Community Right-to-Know by providing information on toxic chemical releases and waste management from facilities outside of currently reporting manufacturing facilities. A number of factors were used to consider which industries might be added to the initial list of subject industries, including available data on toxic chemical releases, relationship to manufacturing, and the potential burden that reporting under TRI might place on facilities.

New industries included in the TRI facility expansion effort are: metal mining, coal mining, coal and oil-fired electric generation stations, commercial hazardous waste treatment, chemicals and allied products-wholesale, petroleum bulk stations, and solvent recovery services. OPPT analyzed the burden reporting would place on these industries and reduced the total burden by issuing exemptions for those activities where TRI reporting would not significantly benefit society. For more information, contact: Tim Crawford, (202) 260-1715.

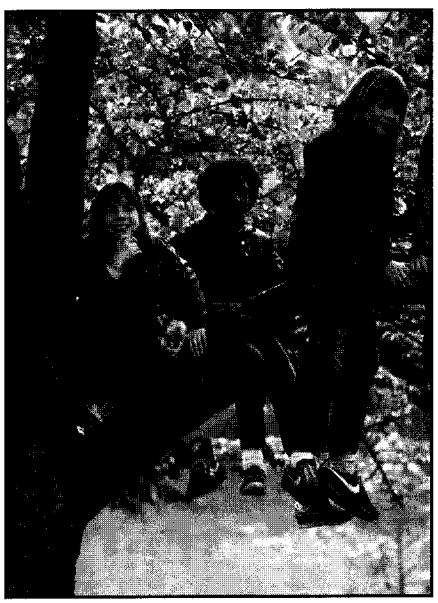
TSCA Section 8(e) Information Products

In an effort to facilitate information sharing to the public, OPPT has developed a TSCA Section 8(e) Information Product. TSCA Section 8(e) requires chemical manufacturers, processors, and distributors to submit unpublished data that shows potential substantial risk from chemicals. The public will now have access to unpublished substantial risk information on existing chemicals submitted under TSCA Section 8(e), as well as OPPT hazard and risk screening evaluations of these submissions.

OPPT developed an 8(e) Information Product to enable the Agency to more effectively share information on the rising volume of substantial risk notices. The reporting requirements for 8(e) began on January 1, 1977 when TSCA went into effect, and since then the Agency has received nearly 14,000 such notices. The 8(e) Information Product contains summary information from international studies submitted by industry. It has been distributed via diskette to other EPA program offices, other federal and state government

agencies, and to the public. The data are also available on EPA's home page at "http: \\www.epa.gov\docs\8e_triag\". An updated version (3.0) of the 8(e) Information Product will be available in 1997 and possibly in CD-ROM format. This data helps other EPA offices and federal and state agencies to support the various public health and environmental regulatory authorities, and helps industry, professional organizations and the public to support risk assessment/risk management activities. For more information, contact: Terry O'Bryan, (202) 260-3483.

Future Activities



OPPT will continue to build on the successful innovative activities described in this report. While great strides have been made in OPPT's four mission areas—preventing pollution, promoting safer chemicals, reducing risks in the life cycle of major chemicals of concern, and promoting public understanding of toxic chemicals—there is much room for continued growth and progress.

Preventing pollution will continue to be an overall priority in the work of OPPT. The Agency will increase work on industry-specific projects which develop practical methods, processes, and tools to apply in the real world. Incentives for engaging in pollution prevention projects, such as financing and accounting benefits, will also be an area of focus.

Promoting safer chemicals will occur more and more through cooperative, voluntary, and partnership approaches, particularly centered around use-specific evaluations, and the development of safer substitutes for products. Another area of interest is the development of a system for screening and prioritizing the 70,000 chemicals on the TSCA Inventory. By focusing on "worst first," OPPT will better protect you and the environment. The international arena is also growing. Other countries face the same challenges in managing chemical risks, and U.S. companies are dealing increasingly with our international neighbors. Thus, OPPT is expanding relationships with other countries to prevent pollution and reduce risk globally.

OPPT will continue to educate the public on the best ways to avoid exposure to chemical risks already present in the environment, and will continue to pursue sound science for reducing these risks. In addition, OPPT remains vigilant for any additional persistent chemicals which might require attention and risk management.

Information dissemination will continue to be a priority for expansion and improvement, particularly concerning the public's right-to-know. OPPT is reorganizing to include a branch dedicated to community-based environmental work, in order to further increase public participation and to understand the information needs at the individual local level. In addition, the Agency is working to make databases compatible and reduce duplicative and unnecessary reporting, resulting in more accessible and more relevant data.

This country has come a long way in reducing and managing the risks of toxics in the environment, and OPPT is proud to be a

part of that success. Continued improvement requires the input of the public, industry, and communities, and OPPT looks forward to learning your ideas and perspectives to better serve you. The future holds much work, but together we are ready to meet that challenge. By working cooperatively, we will be able to realize the promise for improved information flow, successful partnerships, and ultimately, an improved environment.

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