

POLLUTION PREVENTION . . .

MAKING IT EASY TO BE GREEN

2004

2004 Pollution Prevention Annual Report for the
Environmental Science and Services Division of the
Michigan Department of Environmental Quality

Jennifer M. Granholm, Governor
Steven E. Chester, Director
www.michigan.gov/deq



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Welcome to the 2004 edition of the Pollution Prevention Annual Report. The splendor of Michigan's natural heritage is evident in our Great Lakes vistas, shoreline beaches, inland lakes, and streams and rivers. It is clear that Michigan is working harder than ever to keep our state safe, and its citizens healthy. Our commitment to the people of Michigan has never been stronger to protect human health and the environment this year and beyond. We certainly have many challenges ahead of us, but we also have much to celebrate.

On June 9, 2004, the Michigan Department of Environmental Quality (MDEQ) held a groundbreaking event for its new Southeast Michigan District Office in Warren. The Department took the opportunity to lead by example with Michigan's first "green" state office building. Being a green building, the district office will be more environmentally friendly in terms of site selection and building material and use less energy once

in operation. This will mean a cost savings for the state not only today but in future tight budget times, along with an overall reduction in pollution.

It is also exciting to see the new programs and initiatives that our agency is developing and participating in. Our partnership with the Michigan Department of Natural Resources and the U.S. Environmental Protection Agency's Pollution Prevention Grant Program promotes environmental stewardship at state parks where over 28 million people visit annually. Research, development of a Web site, and a visitor card on preferred campsite activities were developed to inform visiting campers how to be better stewards of Michigan's beautiful natural resources.

Another such program is Governor Jennifer M. Granholm's "Cool Cities" initiative, designed to help communities across the state create vibrant, attractive places for people to live, work, and play. The MDEQ staff is taking an active role in bringing the message of pollution prevention to the 20 Cool Cities projects to which they are partnered.

We have just celebrated the recognition of our 100th Clean Corporate Citizen. These 100+ businesses have proven themselves as the top environmental performers in Michigan by demonstrating achievement in three areas: environmental management systems, pollution prevention, and consistent compliance with all applicable environmental laws and regulations. We have initiated a new program called Neighborhood Environmental Partners, which is intended to encourage effective communication and cooperation between businesses and the communities in which they are located.

Through the perseverance, commitment, and hard work of the MDEQ staff, countless citizen groups, businesses, and local governments, Michigan has made great strides in protecting and improving the quality of our environment. As we learn more about our planet, we gain greater knowledge of the human impact on nature and ecological systems. New challenges emerge to confront us, some of which are global in scope while others test the very limits of our science and knowledge.

As you read through this document, we challenge you to share in the responsibility and commitment of our pollution prevention programs in the great state of Michigan. The more we can do now to "make it easy to be green" will make a difference for the future of our communities.

Steven E. Chester, Director
Michigan Department of Environmental Quality

The Michigan Department of Environmental Quality (MDEQ) administers the pollution prevention (P2) assistance and services programs pursuant to Parts 143 and 145 of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). This legislation, which was originally authorized in 1987 and amended under Act No. 289, Public Acts of 1998, entrusts the MDEQ with the responsibility for:

- Incorporating P2 goals within MDEQ regulatory and permit programs,
- Informing and educating to encourage reductions in the generation of environmental wastes, and
- Providing technical and financial assistance to small businesses and institutions to facilitate in-plant P2.

The MDEQ Environmental Science and Services Division’s (ESSD) P2 programs carry out the legislative requirements of the NREPA Parts 143 and 145 and partner with businesses, institutions, trade associations, and all levels of government to fulfill this responsibility.

Concurrent with managing the P2 programs, the ESSD staff provides P2 coverage to all MDEQ district offices. The deployment of field staff furthers the department’s goal of building P2 capacity to meet local needs. To increase the adoption of P2 practices, field staff, in coordination with the MDEQ regulatory staff, serves as a resource to watershed groups, lake-wide management groups, and local sustainable business forums, among others, to promote environmental performance.

The ESSD also develops and delivers environmental training through workshops and conferences. These events are conducted statewide to improve the understanding of current regulatory requirements, P2 ideas, assistance opportunities, new technologies, and other areas of interest. Conducted since 1993, the Waste Reduction and Energy Efficiency (WREE) conference has a history of being one of the largest forums for waste reduction and energy efficiency held in the Great Lakes region. To date, over 4,000 people have attended. This year, the 11th Annual WREE workshop came closer to the environmental edge by putting sustainability at the heart of the matter – not only the dollar and cents of the programs, but also the “sense” of the programs.

This report summarizes the MDEQ’s major P2 activities and accomplishments in Fiscal Year 2004 (October 1, 2003, through September 30, 2004). There are three sections to this report. Section 1 summarizes the new initiatives for Fiscal Year 2004. Section 2 includes reports concerning the funding programs available to businesses and local government promoting P2 technology and activities. Section 3 continues with status reports and success stories of on-going P2 partnerships and initiatives.

As you read about P2 in the MDEQ, you will find that our commitment to protecting the environment from pollution and environmental degradation has never been stronger. Through our efforts and yours, we are endeavoring to help Michigan citizens find more ways to “make it easy to be green.”

SECTION 1: What's New in Pollution Prevention (P2)

GREEN BUILDING



Groundbreaking for Michigan's first certified "green" building located in Warren, Michigan.

The MDEQ is in the process of building the first certified "green" state office building located in Warren, Michigan. A "green" building refers to a building that is sited, designed, constructed, operated, and maintained for the health and well being of the occupants, as well as minimizing the impact on the environment.

A 1984 report of the World Health Organization implied that as many as 30 percent of new and remodeled buildings may have been initiating "sick building syndrome" among the occupants. In addition, the United States Green Building Council (USGBC) states that office buildings use over 40 percent of the nation's energy supply, 30 percent of our raw materials, 12 percent of the potable water, and create 30 percent of the atmospheric emissions. Many public and private organizations are

lessening these environmental impacts through "green" building efforts. By using less toxics and more energy and water efficient means to operate, "green" building has been shown to reduce employee illness and turnover, liabilities, and operating expenses while increasing productivity.

The USGBC created the Leadership in Energy and Environmental Design (LEED) rating system to independently verify a building's environmental performance. A minimum number of points or "green" building aspects is required to achieve the LEED certification. Michigan is one of the top ten states for the number of "green" buildings certified by the USGBC. Along with the new MDEQ Warren office, several buildings within the state's cool cities are also expected to be LEED-certified when completed.

Over the past few years, the MDEQ has developed several resource guide materials for "green" building to assist those interested in adopting this effort. This includes resources for building material recycling, energy efficiency, green building, green roofs, landscaping, and others. These are posted on the P2 Week Web site at www.michigan.gov/deqp2initiatives. Other key Web sites include the USGBC at www.usgbc.org and the Whole Building Design Guide Web site at www.wbdg.org.

THE GREEN SUPPLIERS NETWORK

The Green Suppliers Network (GSN) is an industry-government collaboration working with the manufacturing supply chain to achieve environmental and economic benefits. The GSN takes an industry sector approach to leverage federal and state resources to deliver manufacturing efficiency and P2 assistance. In the fall of 2004, the MDEQ received a two-year grant from the U.S. Environmental Protection Agency (USEPA) Region 5 to demonstrate and create a framework for diffusion of P2 technology and work practices into the supply chain of the office furniture manufacturing industry.

In its first year of operation, the GSN partners, which include the USEPA, the Michigan Manufacturing Technology Center in west Michigan, and the MDEQ, focused on developing a coordinated delivery system for providing office furniture suppliers technical assistance. The GSN Technical Review Teams also included engineers from the MDEQ Retired Engineer Technical Assistance Program.

Future GSN activity will include introducing office furniture manufacturing suppliers to the Michigan Business Pollution Prevention Partnership Program; developing a standardized approach to environmental data sharing and reporting; conducting a "Supplier Inventory Assessment Workshop;" and implementing the use of a "Product Life Cycle Assessment" Tool and an Environmental Self-Audit Tool for tracking environmental performance.

NEIGHBORHOOD ENVIRONMENTAL PARTNERS

The Neighborhood Environmental Partners (NEP) Program is a new, voluntary program which recognizes businesses and neighborhood groups that work together to implement local environmental projects to enhance the community. This Program is also designed to increase communication between businesses and their neighbors about local environmental issues.



The MDEQ began accepting applications in June, 2004, from Clean Corporate Citizens (C3) members, building on the strong relationships that the C3s have in their communities. Participants can choose qualifying activities from a list related to environmental improvements, environmental education, and environmental mentoring, or propose an activity of their own. The C3 "Neighborhood Environmental Partner" award winners will be announced in March, 2005.

The NEP program requirements, along with ideas and illustrations of community-based environmental projects, can be found on the Web site at www.michigan.gov/deqnep.

STATE PARK STEWARDSHIP INITIATIVE



Pollution prevention information was available at the workshop for park managers and RETAP engineers.

In 2004, the MDEQ initiated the State Park Stewardship Initiative with assistance from the USEPA's Pollution Prevention Grant Program. The MDEQ's Environmental Science and Services Division leads the Initiative, seeking input and cooperation from the Department of Natural Resources (DNR) State Park Stewardship Program. The DNR acts as a conduit for working with park officials and provides input on beneficial pollution reduction information and assistance provided through this initiative.

The object of this Initiative is to promote environmental stewardship at state parks through the implementation of best management practices and education outreach to the 28 million people who visit Michigan's parks each year. In the first year of this two-year project, project members accomplished the following:

- Worked to benchmark current state park practices in relationship to national efforts,
- Researched recycling activities and available resources,
- Developed a Web site for information on environmental stewardship and preferred practices,
- Published a card for visitors on preferred campsite activities,
- Hosted a P2 workshop for park managers and Retired Engineer Technical Assistance Program engineers,
- Conducted on-site P2 assessments at six state parks, and
- Initiated pilot studies within the state parks.

To learn more about the State Park Stewardship Initiative, visit www.michigan.gov/deqp2initiatives and select Park Stewardship.

POLLUTION PREVENTION TRIBAL INITIATIVE

The MDEQ is part of a national effort working with Tribal Nations to develop and foster P2 on tribal lands. The effort is being led by the National Pollution Prevention Roundtable (NPPR), a 501(c)(3) non-profit organization that promotes the development, implementation, and evaluation of efforts to avoid, eliminate, or reduce pollution at the source. The NPPR Tribal Work Group was formed in December, 2003, to work collaboratively with tribes throughout the United States to identify and address environmental issues affecting their nations.

The MDEQ also entered into a partnership with the Native American tribes of Michigan. This partnership focuses on P2 with an emphasis on energy conservation, "green" construction techniques, and waste reduction. The MDEQ will also assist with tribal grants in fostering stewardship and environmental management of tribal lands and infrastructure.

This year's effort focused on the establishment of a Web site that you can visit at www.tribalp2.org.

COOL CITIES



Governor Jennifer M. Granholm's economic vision for Michigan is to build vibrant, energetic cities that attract people, jobs, and opportunity to our state. The Cool Cities initiative is about creating hot jobs in cool neighborhoods throughout Michigan. It is about attracting and encouraging people, especially young people, to live, work, and shop in the cool cities we are working hard to create.

Cool Cities is the catalyst for new connections. It brings people together and facilitates conversations between groups that may not have talked in the past for the benefit of our cities and state. These connections will provide the collaboration, synergy, and momentum needed to bring ideas to fruition. Over 14 state departments and offices are involved in this collaboration, with P2 as a leading partner in these new connections.

The MDEQ's Environmental Science and Services Division is taking an active role in bringing the message of P2 to the 20 Cool Cities projects to which they are partnered. P2 opportunities for Cool Cities include, but are not limited to, "green" building, landscaping for water quality, and recycling.

Additional P2 tools that Cool Cities can make use of are the Retired Engineer Technical Assistance Program (RETAP), RETAP Student Internship Program, and the Small Business P2 Loan Program.

For more information on the Cool Cities initiative, go to www.coolcities.com.

SECTION 2: Granting Pollution Prevention

COMMUNITY POLLUTION PREVENTION GRANTS



Four Michigan communities were awarded grants to advance electronic recycling programs.

The Community Pollution Prevention (P2) Grant Program provides matching funds to local government, businesses, planning agencies, and residents that partner to achieve measurable waste reductions through community-based P2 projects. Through this program, the MDEQ fosters partnerships and sustainability in communities by bringing local government, businesses, planning agencies, and residents together to address local environmental issues. The program is funded by appropriations from unclaimed beverage container deposits.

The 2004 Community P2 Grant Program awarded approximately \$250,000 to advance electronics recycling programs in four Michigan communities and to set up an automotive mercury switch recovery program in one community.

- The Western Upper Peninsula District Health Department proposes to provide electronic waste recycling opportunities to the five Upper Peninsula counties within the agency's jurisdiction (Baraga, Gogebic, Houghton, Keweenaw, and Ontonagon counties).
- Leelanau County proposes to implement an electronic waste recycling program to divert approximately 59,500 pounds of material from landfills.
- The Genesee County Metropolitan Planning Commission proposes to provide Genesee County with a permanent drop-off location for electronic waste.
- The Greater Detroit Resource Recovery Authority proposes to implement a multi-media public outreach campaign to assist residents in properly identifying and understanding opportunities to improve their community through participation in electronic waste recycling programs. Goodwill Industries will provide multi-faceted materials marketing, computer de-manufacturing, and a deployment program for electronic components.

- The City of Grand Rapids, Environmental Protection Services Department, proposes bringing together municipalities and businesses involved in the automotive switch supply chain to develop an end-of-life stewardship process for mercury switches.

For additional information visit www.michigan.gov/deq, select Key Topics, Grants and Loans, DEQ Grants and Loan Catalog, and Community Pollution Prevention Grant Program.

HOUSEHOLD HAZARDOUS WASTE GRANTS

The Household Hazardous Waste (HHW) Grant Program, funded under the Clean Michigan Initiative, encouraged community development of HHW collections in areas of the state where this service is not available. This one-time grant program provided funding for communities to initiate or expand HHW collections. Although funding was only available for two years, the communities involved committed to seven years of collections. The communities participating in this grant program are:

- City of Cadillac (Wexford County)
- Multi-County Task Force (Lapeer, Sanilac, and Tuscola Counties)
- Leelanau County
- Grand Traverse County (including Benzie County)
- Northeast Michigan Recycling Alliance Authority (including the counties of Alpena, Alcona, Montmorency, Oscoda, and Presque Isle)
- Washtenaw County (including Lenawee and Jackson Counties)
- Macomb County
- Chippewa County
- Livingston County
- Shiawassee County
- Muskegon County

The HHW collections have continued to increase the ability of Michigan residents to properly and conveniently dispose of their hazardous wastes. These collections are important to ensure the continued protection of Michigan’s waters from the impact of illegal dumping and improper storage of hazardous materials.

The total participants and materials collected to date are:

- Over 10,000 participants at 68 collections around the state, and
- At least 646,000 pounds of household hazardous waste collected and properly disposed/recycled/reused.

For more information regarding the HHW Grant Program, visit www.michigan.gov/deqgrants, select DEQ Grants and Loan Catalog, and Household Hazardous Waste Collection Initiative Grants.

REGIONAL POLLUTION PREVENTION GRANTS



Fish are composted for specialty markets.

The Regional Pollution Prevention Grant Program provided grants, funded from the Clean Michigan Initiative, to promote innovative P2 approaches to reduce the generation of waste and critical pollutants in the state. The MDEQ’s Environmental Science and Services Division P2 Field Services staff provides program oversight for the grant projects. A total of \$800,000 in grants went to fund regional P2 projects, resulting in measurable reductions in the generation of waste. The grants were targeted at regions of the state with environmentally sensitive natural resources, such as the Lake Superior Basin and Lake St. Clair. Public and private organizations matched grant funds to implement P2 projects targeting source reduction, reuse, and recycling.

Grant project progress since implementation:

- Central Michigan District Health Department is implementing a tire recycling demonstration project to increase public acceptability of the use of chipped tires, in lieu of stone, as the media for septic drain field installation. The project addresses the health risks arising out of stockpiled tires and looks at barriers and best practices in substituting recycled tires for mined stone. To date, over 52 systems have been installed and approximately 65,000 used tires recycled.
- Central Lake Superior Watershed partnership in Marquette implemented a community-based P2 program for Lake Superior that provides technical assistance to businesses for reducing the storm water impacts of critical pollutants to Lake Superior. A comprehensive strategy for implementing the business education component of the project has been developed, and the storm water monitoring stations have been identified and established. In addition, the project has been featured in several public presentations and publications.
- Delta County and the Menominee District Health Department are implementing a regional approach to reducing critical pollutants generated from medical waste. The grantees conducted a video conference which included representatives from eleven Upper Peninsula hospitals and the Upper Peninsula Health Care Network to learn about the available resources for the reduction of critical pollutants generated from medical waste.
- Northern Economic Initiatives Corporation in Marquette and fish processors in the Lake Superior Basin implemented a project to develop compost for specialty markets, such as greenhouse operations, bagged potting soils, and the organic growers markets. The project has begun composting 15,000 pounds of fish processing waste and will provide guidance and recommendations for implementing a large-scale operation.
- The Washtenaw County Computer Recovery Program Regional P2 Grant demonstrated the feasibility of a permanent and sustainable computer/electronics recycling program. In cooperation with one of its partners, Recycle Ann Arbor, a permanent drop-off/collection facility was created. The grant has ended, but the drop-off/collection facility continues to function as an electronics collection station, even though no continuing funding is provided. This is due, in part, to a small fee being charged for any electronics that the public brings in. The success of this sustainable operation is testimony to the concept that the public is willing to “pay” for the convenience of a local drive-through, drop-off station. Since the grant began in July of 2001, Washtenaw County has collected and diverted from disposal in local landfills approximately:
 - > Central Processing Units, monitors, etc. – 24,500
 - > Lead – 120,000 pounds
 - > Chromium – 50 pounds
 - > Cadmium – 70 pounds
 - > Mercury – 20 pounds
- The Michigan State University (MSU) Grant project provided technical assistance to the apple growing industry on Integrated Pest Management practices. MSU was successful in meeting its project goal of reducing broad-spectrum organophosphorous pesticides at participating orchards by over 50 percent. The MSU Apple Growers P2 Project demonstrated Integrated Pest Management practices to apple growers using pheromone attractants as a mating disrupter and as a lure to trap pests. MSU experimented with different trapping and pheromone release techniques to better suit apple growers by looking for methods that are effective and easy to use and are not time consuming to put into practice. MSU was able to demonstrate effective control of apple maggot and plum curculio using various integrated pest management practices at several apple orchards across the state. MSU also demonstrated that the use of novel tactics to control key apple pests was an enhancement, as well as a viable alternative to conventional apple pest treatments.
- Macomb County Public Health completed three demonstrations for P2 in boat maintenance and repair facilities on the following technologies: oil filter crushing, solvent substitution with Ozzy Juice (an aqueous degreasing solution), and ice blasting for hull paint removal. The technologies were evaluated for ease of use, equipment costs, and operating costs. Summarized data was compiled into a report titled “Comparison of Alternative Pollution Prevention Technologies for Boat Maintenance and Repair Facilities in Macomb County” and distributed at a P2 workshop held on June 25, 2003. There is a best management practices section and a self-checklist for creating a cleaner facility. A clean marine brochure, which includes locations to purchase environmentally friendly solvents/cleaners, was distributed to boaters.

For more information regarding the Regional P2 Grant Program, visit www.michigan.gov/deqgrants, select DEQ Grants and Loan Catalog, and Regional Pollution Prevention Grant Program.

SMALL BUSINESS POLLUTION PREVENTION LOAN PROGRAM



Shady Side Farm of Holland, Michigan, purchased this in-vessel composter to help turn its poultry waste into a beneficial soil amendment, with help from Michigan's Small Business Pollution Prevention Loan Program.

The Small Business Pollution Prevention Loan Program was established to provide low-interest loans to eligible small businesses to initiate or expand P2 activities that will reduce waste, energy, and water usage and save money. Potential projects may either be identified through a waste reduction assessment under the Retired Engineer Technical Assistance Program or by the loan applicant.

The highlight of the P2 Loan Program for Fiscal Year 2004 was the passage of legislation that broadens the eligibility requirements for small businesses from those under 100 employees to those with 500 employees or less. The legislation also increases the total loan amount from \$100,000 to \$300,000. These changes were made to provide more opportunities for small businesses to participate in the program, save money, and also make the program more attractive to lending institutions who participate in the loans to the applicants with the MDEQ.

During Fiscal Year 2004, two loans were paid in full (J&L Products and Clothing Care Center.) Due to the continuing downturn in the economy and low prime interest rates, only one loan was added in Fiscal Year 2004. Brigadoon Golf Club's project proposed to switch from gasoline powered golf carts to electric golf carts to reduce consumption of gasoline by 65 percent (4,275 gallons) per year and reduce the use of motor oil by fifty per cent (100 gallons) per year. Since the program's inception in 2000, 21 participants have received over \$1.3 million to implement their P2 projects. Annual results reported from all 21 borrowers include:

- Waste Reduction
 - > 438 cubic yards per year manure waste
 - > 550 pounds per year perchloroethylene filter waste
 - > 75 gallons per year perchloroethylene solvent/sludge waste
 - > 30,000 pounds solid waste
 - > 7,200 pounds per year F006 waste
 - > 100 gallons of used motor oil
- Water Conservation
 - > over 23 million gallons per year
- Energy Conservation
 - > over 12,000 kilowatts per year
 - > 4,275 gallons of gasoline
- Source Reduction
 - > 3,506 gallons per year of perchloroethylene (over 24 tons)
 - > 516 gallons per year of x-ray photo developing chemicals
 - > 18,300 x-ray films per year
 - > 3,750 feet of printer film
 - > 1,320 printer plates
 - > 2,180 pounds per year plating make-up chemicals

For additional information, visit www.michigan.gov/deqgrantsandloans, select MDEQ Grants and Loans Catalog, and Small Business Pollution Prevention Revolving Loans

P2 Loan Recipients:

- AGJ Enterprises, LLC
- Alfred L. Shaw, P.C.
- Alpha Plastics, Inc.
- Anderson Farms
- Breck Graphics d.b.a. Allegra Printing
- Brigadoon Golf Club
- Cleaner Cleaners
- Clothing Care Center
- Country Club Dry Cleaners
- Dr. Darnell Kaigler, DDS

- Easy Laundries & Dry Cleaning
- GMA Industries, Inc.
- J & L Products
- Jacobs Cleaning Village
- Midwest Industrial Laundry

- Mr. Duds Cleaning and Laundry
- Plantenga's Cleaners
- Ram Leather Care
- Shady Side Farm
- Thomas E. Herremans, DDS
- Troy Cleaners

TECHNOLOGY DEMONSTRATION PROGRAM



Environmentally preferred product demonstration at the "2004 and Beyond Tech Demo & Show"

The Technology Demonstration Program provides matching funds to partially cover expenditures for implementing, documenting, and demonstrating innovative P2 technologies not yet widely adopted by Michigan businesses. The program's mission is to foster broad based source reduction by encouraging the adoption of these technologies, thereby reducing the quantity and toxicity of waste materials generated within the state. The implementations funded by the program serve as showcase demonstrations, providing specific "how to" information necessary for encouraging other businesses or industries to adopt the technology. New this year was the inclusion of Michigan universities as eligible grantees for the research and development of innovative P2 technologies having the potential to reduce the quantity or toxicity of specific environmental wastes currently generated by Michigan businesses.

Below are brief summaries of the projects funded to date. As the program promotes the adoptions of these technologies among other Michigan businesses, significantly greater reductions will be realized.

- Apollo Plating, Inc., Roseville, is an electroplating facility that successfully reduced its water usage by about 225,000 gallons per month and its hazardous waste generation by nearly 25 percent by integrating an advanced ion-exchange system into its rinsing operations. The change further allowed for the recycling of this waste, converting a \$3,600 per month disposal cost into a \$3,000 per month revenue stream.
- Dunnage Engineering, Inc., Brighton, is an injection molding and metal fabricating facility that integrated an innovative, non-chemical water treatment unit into its cooling tower system. The change successfully eliminated the facility's use and discharge of water treatment chemicals and reduced wastewater discharges from the cooling tower by 99 percent.
- Earth Shine Farm, Durand, replaced its traditional poultry carcass water bath chilling system with an innovative air chilling unit to significantly reduce water usage, wastewater generation, and cross contamination of the poultry meat product.
- Jones Farm Meats, Saranac, is a meat processing facility that constructed an on-site composting facility to safely and economically recycle more than 29,000 pounds per month of meat processing waste materials into a beneficial end product for crop production.
- Landaal Packaging Systems, Bay City, is a fiber box manufacturing and printing facility that integrated environmentally preferable enzyme cleaners and degreasers into the facility's equipment cleaning systems to successfully recycle and reuse more than 30 percent of the facility's wastewater therein.
- Yamaha Musical Instruments, Grand Rapids, a manufacturer of brass instruments, successfully eliminated its hazardous air pollutant emissions (2,400 pounds per year) and reduced hazardous waste generation (2,000 pounds per year) by integrating an n-methyl-2-pyrrolidone-based stripping system within its metal cleaning operations as a safe and cost-effective alternative to the company's methylene chloride-based system.

For additional information, visit www.michigan.gov/deqretap, select RETAP Technology Demonstration Program under Quicklinks.

SECTION 3: Continuing Pollution Prevention

AGRICULTURAL POLLUTION PREVENTION

The Agricultural Pollution Prevention (AgP2) Partnership between the MDEQ and representatives of the agricultural industry promotes reduction or elimination of environmental contamination within the agricultural sector. Guided by the AgP2 Strategy, which has been in place since 1998, the program focuses on preventing agricultural pollution through increased operational efficiency while maintaining and improving on-farm profitability.

The initiatives in which MDEQ participates that promote the department's AgP2 objectives include:

- The Michigan Agriculture Environmental Assurance Program (MAEAP) is the state's environmentally comprehensive and voluntary agricultural P2 program for Michigan producers. By following this proactive environmental assurance program, participating producers engage in cost-effective P2 practices to maintain compliance with environmental regulations. Forty-two livestock farms have received third-party verification of compliance under the MAEAP Livestock System while another 41 are in the system and 23 have completed verification for the MAEAP Farmstead System.
- The Michigan commercial manure applicators are working with Wisconsin and Illinois to develop a voluntary, proactive certification program. This three-phase certification program will include education, training and development, and implementation of an environmental management system. Regional field days have provided hands-on training and education.
- The Saginaw Bay Watershed Initiative Network works to enhance the quality of life by creating networks of on-the-ground projects that demonstrate sustainability. These projects strive to link together various economic, environmental, and community goals. As part of this network, the Agriculture/Pollution Prevention Task Group focuses on supporting over 20 related projects, ranging from the development of an educational DVD illustrating Farmers Can Minimize Environmental Risks by participating in the Michigan Agriculture Environmental Assurance Program to a Conservation Tillage Risk Reduction watershed project.



Manure applicators learn GPS for tracking rates, mapping locations and set backs for in-field manure applications at an Illinois Field Day.

For additional information, visit www.michigan.gov/deqp2partnerships.

AgP2 Partners include:

- Michigan Agriculture Environmental Assurance Program
 - > Michigan Department of Agriculture
 - > Individual farmers
 - > Michigan Pork Producers Association
 - > Greenstone Farm Credit Services
 - > Michigan State University
 - > Michigan Corn Growers Association
 - > U. S. Department of Agriculture Natural Resources Conservation Service
 - > Michigan Cattlemen's Association
 - > Michigan Farm Bureau
 - > Michigan State University-Extension
 - > Michigan Soybean Committee
 - > Michigan Milk Producers Association
 - > Michigan Allied Poultry Industries
 - > Dairy Farmers of America
 - > Michigan Potato Industry Commission
 - > Michigan Aquaculture Association
 - > Michigan Association of Conservation Districts
 - > Michigan Custom Manure Applicators Association

- Michigan State University Extension, Genesee County
- Michigan Integrated Food and Farming Systems
- Michigan Agriculture Stewardship Association
- Rural Partners of Michigan
- Michigan Custom Manure Applicators Association
 - > Michigan State University-Extension
 - > University of Wisconsin-Extension
 - > University of Illinois-Extension
 - > Applicators
- Saginaw Bay WIN AgP2 Task Group
 - > Individual farmers
 - > Michigan Department of Agriculture
 - > Saginaw Bay Resource Conservation & Development
 - > Saginaw Valley State University
 - > Michigan State University-Extension
 - > Dow Gardens
 - > Citizens
 - > Conservation districts
 - > Conservation Fund
 - > The Nature Conservancy

CLEAN CORPORATE CITIZENS



Clean Corporate Citizen facilities are proud of their environmental accomplishments (Light Corporation).

The Clean Corporate Citizen (C3) Program provides public recognition and regulatory benefits for companies, municipalities, and institutions that have demonstrated environmental stewardship and a strong environmental ethic. Michigan's C3s demonstrate that saving energy, reducing wastes, converting processes, substituting safer products and materials, and providing environmental training for all employees benefits our shared environment and results in lower costs and improved business practices. The state of Michigan continues to be a proactive leader in these efforts with the C3 Program which is based on an international Environmental Management System (EMS) framework. To qualify for the C3 program, applicants must have: (1) an EMS in place that evaluates all environmental aspects of the applicant's facility and sets objectives and targets for continual improvement; (2) a good compliance history (compliance criteria can be found in Administrative Rules R324.1501 through 324.1511); and (3) a proactive P2 program focused on Reduce-Reuse-Recycle.

The ultimate goal of the C3 Program is to provide long-term benefits to Michigan's environment. By operating always with their eye on the target of environmental excellence, C3s add value to the surrounding community and demonstrate that proactive environmental management and P2 also benefit the business bottom line. With each annual renewal of their C3 status, member facilities reevaluate their objectives and targets to ensure continual improvement and identify new ways to improve their environmental operations.

The C3 Program expanded 53 percent in 2003, and program achievement continued in 2004. A total of 26 new facilities were designated as C3s, the highest annual number since the program began. We also welcomed the 100th C3 to the program: Plastech Engineered Products-Port Huron. This milestone demonstrates the strength of the C3 Program and its value to Michigan businesses. Michigan's C3 Program still serves as one of the nation's leading voluntary environmental leadership programs.

In October 2003, the MDEQ sponsored the first C3 mini-conference, hosted by Consumers Energy at its new corporate facility in Jackson. Management and associates from C3 facilities all across Michigan came together to share innovative environmental programs and technologies and to learn from each other's successes.

In July 2004, MDEQ Director Steven E. Chester invited the C3's to participate in a new voluntary initiative that brings businesses and communities together to achieve environmental improvements in their neighborhoods: the Neighborhood Environmental Partners (NEP) Program. The NEP Program builds on many of the strong relationships and creative projects the C3s have already implemented in their communities, and encourages the C3s to reach out and work directly with their neighbors on joint local environmental projects. For C3s that have already identified and addressed most of the environmental issues at their facility, the NEP Program offers options for going beyond the "shop walls" to make their neighborhood or community a cleaner place to live and work.

For additional information, visit www.michigan.gov/deqc3.

Michigan's Clean Corporate Citizens:

- ADAC Automotive Trim (two C3 facilities)
 - > 36th Street, Grand Rapids
 - > Saranac facility, Saranac
- ADAC Door Components (three C3 facilities)
 - > 32nd Street, Grand Rapids
 - > Keating Plant, Muskegon
 - > Port City Plant, Muskegon
- American Axle & Manufacturing - Detroit Gear, Detroit
- ARVCO Containers, Kalamazoo
- Asahi Thermofil, Fowlerville
- Atlas Technologies, Fenton
- Baker, Knapp & Tubbs, Inc., Holland
- Cascade Engineering Automotive Trim Group, Grand Rapids
- Cascade Engineering Acoustics Group, Grand Rapids
- Collins & Aikman Corporation - Westland Plant, Westland
- Collins & Aikman Plastics, Inc. - Manchester Plant, Manchester
- Consumers Energy Company (two C3 facilities)
 - > J.R. Whiting Plant, Erie
 - > Parnall Road Office Complex, Jackson
- Cyltec, L.L.C., Tecumseh
- DaimlerChrysler Sterling Heights Assembly Plant, Sterling Heights
- Dapco Industries, Dexter
- Dearborn Mid-West Conveyor, Taylor
- Demmer Corporation Delta Plant, Lansing
- DENSO Manufacturing Michigan, Inc., Battle Creek
- Detroit Edison Company/DTE Energy (two C3 facilities)
 - > Fermi 2 Power Plant, Newport
 - > St. Clair Power Plant, East China Township
- DeWitt Barrels, Inc., Marne
- Dow Corning Midland Site, Midland
- DuPont Mount Clemens Plant, Mount Clemens
- DURAAutomotive Systems, Inc., Mancelona
- Eaton Corporation-Saginaw Plant, Saginaw
- Elm Plating Company, Jackson
- Ford Motor Company (five C3 facilities)
 - > Automatic Transmission New Product Center, Livonia
 - > Engine Manufacturing Development Operations, Allen Park
 - > Livonia Transmission Plant, Livonia
 - > Romeo Engine Plant, Romeo
 - > Van Dyke Plant, Sterling Heights
- General Motors (GM) Corporation (six C3 facilities)
 - > GM Orion Assembly Center, Lake Orion
 - > GM Pontiac Centerpoint Campus-Validation Center, Pontiac
 - > GM Powertrain Livonia Engine Plant, Livonia
 - > GM Powertrain Romulus Engine Plant, Romulus
 - > GM Powertrain Warren Transmission Plant, Warren
 - > Lansing Regional Stamping, Lansing
- Grayling Generation Station, Grayling
- Great Lakes Gas Transmission Company (eleven C3 facilities)
 - > Compressor Station #8, Crystal Falls
 - > Compressor Station #10, Naubinway
 - > Compressor Station #10A, Brevort
 - > Compressor Station #11, Boyne Falls
 - > Deward Metering Station, Frederic
 - > Farwell Compressor Station #12, Lake
 - > Otisville Compressor Station #13, Otisville
 - > Rapid River Compressor Station #9, Rapid River
 - > Sault Ste. Marie Meter Station, Sault Ste. Marie
 - > St. Clair Meter Station, St. Clair
 - > Wakefield Compressor Station #7, Wakefield
- Haworth, Inc. (three C3 facilities)
 - > Allegan Seating, Allegan
 - > Douglas Operations, Douglas
 - > Ludington Components, Ludington
- I & W Industries, LLC, Traverse City
- IMCO Recycling, Inc.-Saginaw Plant, Saginaw
- Inalfa/SSI Roof Systems, Warren
- Kay Automotive Graphics, Lake Orion
- Keykert USA, Inc. (two C3 facilities)
 - > Keykert USA, Webberville
 - > Keykert USA, Wixom
- Knoll, Inc., Grand Rapids

- Lacks Enterprises, Inc. (five C3 facilities)
 - > 52 Mold, Kentwood
 - > 52 Paint East, Kentwood
 - > 52 Paint West, Kentwood
 - > Barden, Kentwood
 - > Brockton, Kentwood
- Light Corporation, Grand Haven
- MAC Valves, Inc., Wixom
- Machine Tool & Gear, Corunna
- March Coatings, Inc. (two C3 facilities)
 - > Plant 1, Brighton
 - > Plant 2, Brighton
- Mark IV Automotive, Big Rapids
- Modern Plastics Corporation, Benton Harbor
- MTI Structural & Tubular Systems, Inc., Pinconning
- NorthStar Print Group-Norway Operation, Norway
- NSK Corporation, Ann Arbor
- Nyloncraft, Inc., Jonesville
- Palmer Engineering, Inc., Lansing
- Pfizer Global Research and Development-Ann Arbor Laboratories
- Pratt & Whitney AutoAir, Inc., Lansing
- Quality Metalcraft, Inc., Livonia
- Skilled Manufacturing, Inc., Traverse City
- Smurfit-Stone Container Corporation-Ontonagon Mill, Ontonagon
- T.E.S. Filer City Station, Filer City
- TAC Manufacturing, Inc., Jackson
- Tenneco Automotive, Litchfield
- TRW Automotive, Fowlerville
- Uni Boring Company, Howell
- Unified Industries, Inc., Howell
- Visteon Corporation (four C3 facilities)
 - > Chesterfield Plant, Chesterfield
 - > Milan Plant, Milan
 - > Sheldon Road Plant, Plymouth
 - > Ypsilanti Plant, Ypsilanti
- Weyerhaeuser Company-Grayling OSB, Grayling
- Plastech Engineered Products (three C3 facilities)
 - > Clarkston Facility, Clarkson
 - > Croswell Facility, Croswell
 - > Port Huron Facility, Port Huron

DEPARTMENT OF DEFENSE/STATE OF MICHIGAN ENVIRONMENTAL ALLIANCE



Detroit Arsenal Pollution Prevention Committee

The Department of Defense/State of Michigan Environmental Alliance (DOD Environmental Alliance) is in its fourth year and facilitates P2 information and technology exchange among the various participating members from the Department of Defense, National Guard, Army, Air Force Reserve bases, Armories, Special Divisions, USEPA Region 5, and MDEQ's Environmental Science and Services Division.



Selfridge Pollution Prevention Committee

The DOD Environmental Alliance “charter” provides the framework of the partnership, including the vision, mission, and goals of the partnership. The mission of the partnership is to “create a voluntary environmental alliance within the state of Michigan that aims to promote environmental stewardship and pollution prevention, conserve resources, foster community well-being, and achieve state and federal environmental priorities, while assuring mission readiness”.

Highlights for 2004 include the Third Annual Federal Facilities Environmental Workshop, held at the Selfridge Air National Guard Base in Mt. Clemens. The workshop, sponsored by the ESSD, has become a cornerstone of the partnership, providing valuable training opportunities and networking for participating Federal staff. The DOD Environmental Alliance held four quarterly work group meetings through the year, integrating a variety of speakers and information sessions on P2 or environmental regulatory topics.

In addition, the DOD Environmental Alliance revised the official charter (and strategy) which established the partnership in 1999. Corresponding with revising the charter to reflect organizational and administration changes, the name of the partnership was officially changed to “Department of Defense/State of Michigan Environmental Alliance.” This change reflects the broader focus of partnership goals of promoting sustainability, pollution prevention, and environmental stewardship at participating DOD facilities around the state.

For additional information, visit www.michigan.gov/deqp2partnerships.

Department of Defense/State of Michigan Environmental Alliance Members (September 2004):

- 110 Fighter Wing – Battle Creek Air National Guard Base
- 127th Fighter Wing – Air National Guard Base Selfridge
- 927th Air Refueling Wing (Air Force Reserves)
- Alpena Combat Readiness Training Center – Air National Guard
- Army and Air Force Exchange Services

- Army Reserves – Michigan
- Defense Logistics Information Service
- Defense Reutilization and Marketing Office Selfridge Air National Guard Base
- Defense Reutilization and Marketing Services
- USEPA Region 5

- Michigan Army National Guard (Michigan Department of Military and Veterans Affairs)
- Michigan Department of Environmental Quality
- U.S. Army Environmental Center – Region V
- U.S. Army Garrison – Detroit (Detroit Arsenal)
- U.S. Army Garrison, Selfridge Air National Guard Base
- U.S. Army Tank – Automotive Research Development and Engineering Center

ELECTRONIC RECYCLING



Example of electronics collected for recycling.

Electronic products have made life easier and faster, more efficient and more fun. Common electronic products, such as computers, televisions, cellular phones, and pagers, are replaced at an incredibly fast pace. What happens to those electronics at the end of their useful lives? Not only are obsolete electronics a high-volume waste, they often contain hazardous materials, such as lead, mercury, brominated flame retardants, and other toxic materials. Although research is being conducted globally to use the plastics, glass, and metals harvested from recycled electronics, the commodity price of this material does not yet totally cover the cost of collection, transportation, and processing.

To help communities collect electronic waste for safe management and recycling, the MDEQ has offered two grant programs in the last five years. In 2001, Washtenaw County received a Clean Michigan Initiative Grant to jump start a recycling program for residents and small businesses. This program has been a success, offering a safe alternative to disposal for a variety of consumer electronics within the county and surrounding area. The Washtenaw County Project has collected over 350 tons of electronic waste.

In 2004, the Community Pollution Prevention Grant Program awarded funding to four communities: Western Upper Peninsula, Genesee County, Leelanau County, and Greater Detroit, to collect electronics and provide the state more data on which to base future resource decisions for managing electronic waste. Preliminary results from these projects should be available in Fiscal Year 2005.

Since early 2003, a group of committed stakeholders, the Michigan Electronic Waste Stakeholders Work Group (Work Group), has met to develop a recommendation for the MDEQ Director for managing electronic waste in Michigan. In July 2004, the Work Group submitted an initial report outlining recommendations for improving public education, developing a plan for state government to manage its electronic products more appropriately, and having the state become more involved in national efforts on electronic waste management. A final recommendation addressing funding a sustainable, statewide recycling infrastructure is still being developed.

Representatives from the following organizations have participated in the Work Group:

- Central Michigan University
- Clinton County
- Comprenew
- Consumer Electronics Association
- Ecology Center
- Electronic Industries Alliance
- Great Lakes Electronics Recycling
- Hewlett Packard
- International Business Machines
- Kalamazoo County
- MDEQ
- Michigan Department of Corrections
- Michigan Department of Information Technology
- Michigan Economic Development Corporation
- Michigan Retailers Association
- Michigan Waste Industries
- Oakland County
- Panasonic Corporation
- Recellular, Incorporated
- Recycling Electronics and Pollution Prevention Regional Initiative
- Resource Recovery and Recycling Authority of South West Oakland County
- Sharp Electronics
- USEPA
- Valley City Environmental Services
- Washtenaw County
- Waste Management, Incorporated
- West Michigan Electronics Recycling Coalition

ENVIRONMENTALLY PREFERRED PURCHASING

It is the mission of the Environmentally Preferred Purchasing (EPP) Initiative to encourage and increase the use of products and services that are preferred environmentally within state government and by Michigan P2 partners and businesses, municipalities, and the general populace. Environmentally preferred products and services impact the environment less than competing products, taking into account raw materials, production, manufacturing, packaging, distribution, reuse, operation, maintenance, and disposal of the product.



From a soybean farm in central Michigan to a soybean processor and a distributor in western Michigan – participants of the Biodiesel Bus Tour learned first hand about soy-based biodiesel.

A Memorandum of Understanding (MOU) between the Michigan Department of Management and Budget and the MDEQ created a statewide purchasing partnership to increase the use of environmentally preferred products in state government. As a result of this 2001 MOU, an EPP Work Group was established to provide information and guidance for purchasing environmentally preferred products. In support of this partnership, five fact sheets and seven environmental purchasing bulletins were released highlighting products that were tested and certified to meet performance and environmental standards.

Most recently, the state has been working to promote preferred purchasing to the boating industry through the Clean Marina Program, to machine shops, automotive repair service shops, and small manufacturing facilities through the Retired Engineer Technical Assistance Program Technology Demonstration Program, as well as to its own internal customers through the State Park Stewardship Initiative and positive contract changes.

The purchases of environmentally preferable products and services by state and local governments will continue to contribute to the overall demand for these types of products and services. This will help increase the number and quality of such products in the marketplace, making it easier for interested individuals to purchase environmentally preferred products and services.

For additional information, visit www.michigan.gov/deqp2initiatives.

FOOD PROCESSING POLLUTION PREVENTION INITIATIVE

The Food Processing Pollution Prevention Initiative focuses on promoting P2 opportunities throughout the food processing industry. Water consumption, energy use, and high concentrations of suspended and dissolved solids such as sugars and salts in process wastewater present unique environmental challenges to the industry. In partnership with the Michigan Department of Agriculture and the Michigan Food Processors Association, MDEQ's Environmental Science and Services Division continues to work with food processors to develop and support the diffusion of P2 technologies and practices into the industry.

In the summer of 2004, a Retired Engineer Technical Assistance Program engineering student intern from Grand Valley State University was assigned to Birds Eye Foods, Fennville, Michigan. This plant is a cannery operation producing mainly fruit pie fillings. The goal of this project was to reduce water usage and biological oxygen demand (BOD) on the plant's wastewater treatment facility. The result of this partnership benefited the company by identifying P2 and waste reduction opportunities including:

- Determining process water flow rate reductions that did not sacrifice performance.
- Recommending the use of chilling towers to reuse process cooling water.
- Quantifying the flow rate of slurry leaks and discovery that fixing a few pump seals can reduce BOD loading, saving the company over \$40,000 per year.
- Setting up additional housekeeping procedures to reduce BOD loading, utilizing catch pans and dry clean-up methods, thereby preventing large amounts of fruit from entering the wastewater stream.

Gerber Products Company of Fremont, Michigan, also participated in the Food Processing Pollution Prevention RETAP Student Internship Program. Based on the intern's recommendations, Gerber Products purchased a dry vacuuming system to install in the cereal plant. The system is designed to recover dry waste cereal for reuse in animal feed, and it also will reduce water used for rinsing and cleanup, as well as reduce the suspended and dissolved solids affecting the BOD.

Gerber Products is also investigating the potential of a waste-to-energy project centered on methane or hydrogen production from the organic wastes generated in the production process. The company is working with the Michigan Alternative and Renewable Energy Center through Grand Valley State University in Muskegon and Pennsylvania State University on this project.

For additional information, visit www.michigan.gov/deqp2initiatives.

HEALTH CARE POLLUTION PREVENTION

MDEQ's Environmental Science and Services Division recently celebrated its thirteenth year of providing P2 technical assistance to Michigan's health care community. As a result of these collaborative efforts, Michigan hospitals rank high in comparison to the rest of the country when it comes to eliminating the use of mercury and reducing generation of hospital waste. Other priority areas for Michigan's Health Care P2 Program include minimizing the production of persistent bio-accumulative and toxic pollutants and elimination of extraneous health care product packaging.

Michigan has approximately 50 Hospitals for a Healthy Environment (H2E) Partners out of a total 700 nationwide. In 2004, three out of the four recipients of the highest level National Awards for Environmental Leadership were presented to Michigan hospitals. The USEPA Region 5 and H2E partners recently used Michigan's model to assist other states like Wisconsin and Illinois in developing their own state programs.

The MDEQ, in conjunction with the Michigan Hospital Association (MHA) and H2E, sponsored free environmental workshops entitled "Practical Pollution Prevention in Health Care." These workshops attracted more than one hundred health care professionals. Workshop attendants learned the latest environmental integration techniques covering Environmental Management Systems/ISO 14001, and the Joint Commission of Accreditation of Healthcare Organizations Environment of Care Standards. They also learned how Michigan hospitals are taking the Green Buildings Challenge and obtaining Leadership in Energy and Environmental Design certification.



"Practical P2 in Health Care" workshop attracted more than 100 health care professionals.

In addition to training activities, the highly successful Retired Engineer Technical Assistance Program conducted 12 waste reduction/energy efficiency assessments at Michigan's hospitals and clinics. Technical reports were prepared for participating hospitals containing numerous site-specific suggestions, including recommendations on how resources can be reduced and/or used more efficiently. These ideas, when implemented by the facilities, will translate into thousands of dollars in savings for each site studied.

For additional information, visit www.michigan.gov/deqp2initiatives.

LOCAL HEALTH DEPARTMENT PARTNERSHIP

The partnership with the Michigan Association for Local Health Departments (MALPH) and the MDEQ enhances and increases the practice of P2 in the public health care community. Awareness and utilization of MDEQ resources continues to improve at the local health level, with more environmental health divisions accessing and requesting information related to waste reduction and energy efficiency, completing RETAP evaluations at county service buildings, and participating in resource recovery programs, such as the Clean Sweep Program and the Household Hazardous Waste Program collections.

Highlights for 2004 include:

- Successful completion of a two-year Regional P2 grant for introducing the use of chipped scrap tires as alternate media for septic systems. More than 80,000 tires were recycled and put to use in 68 on-site septic systems across a six-county area in lower Michigan.
- MDEQ representation at the monthly Environmental Health Forum of MALPH, assisting the Environmental Health Forum in planning and policy formulation for Environmental Health and Public Health Program. Environmental health directors from over forty local health jurisdictions in the state of Michigan also participate in this Forum.
- Participation in a Community Environmental Health Advisory Team assisting the Muskegon County Health Department in identifying local environmental health priorities, establishing relevant indicators, and coordinating significant short- and long-term interventions. Outreach and education relating to P2 and waste reduction were identified as key individual and collective behaviors that the community would continue to foster and develop in order to improve and enhance environmental health concerns in Muskegon County.

Additionally, a P2 Field Services staff member is completing an elective three-year term of office as an Executive Board Member of the Michigan Environmental Health Association (MEHA), providing an MDEQ presence for promotion of P2 Initiatives to the 700 plus members of the MEHA. This participation provides direct contact with state and local environmental health practitioners, and resulted in the addition of a P2 section being published in the MEHA Reference texts.

For additional information visit www.michigan.gov/deqp2partnerships.

MERCURY POLLUTION PREVENTION INITIATIVE

The goal of the Mercury P2 Initiative is to reduce anthropogenic (human derived) releases of mercury to Michigan's environment. This initiative promotes the elimination of non-essential uses of mercury by encouraging the use of mercury-free substitutes. In doing so, this practice eliminates potential public health threats and resulting environmental hazards that stem from spills and/or improper disposal of mercury.

The use of mercury switches in automobiles for convenience lighting and Antilock Braking Systems has been a primary area of environmental concern for some time. Although automakers subsequently eliminated the use of mercury switches in the 2003 model year, thousands of vehicles are retired annually that contain mercury. Therefore, the challenge for the next ten to fifteen years is to safely remove mercury switches before vehicle bodies are crushed, shredded, or smelted during the process of making new steel.



Mercury switches are removed before vehicle bodies are crushed, shredded, or smelted.

This year, Michigan became the first state in the country to enter into a cooperative agreement with automobile manufacturers to offer a statewide collection program for the recovery of mercury automotive switches from end-of-life vehicles. This voluntary program, known as the Michigan Mercury 'Switch Sweep' (M2S2) Program, was rolled out August 1, 2004. Participants (dismantlers, recyclers, salvage yards, and others) entering into this Program are provided with instructions, program logistics, training, storage buckets, and/or mailers. After the dismantler removes the mercury switches, the Alliance of Automobile Manufacturers and/or its designated project manager will arrange for transport to one of the existing Michigan Groundwater Stewardship 'Clean Sweep' Programs or another "team approved" collection point for recycling or disposal.

The purpose of the new M2S2 Program is to ensure that mercury switches are safely removed from vehicles and that no mercury is released to the environment. The goal is to inspect and, when present, remove mercury switches from at least 80 percent of the total number of motor vehicles processed in Michigan each year. This agreement remains in effect until September 30, 2006.

To learn more about the Mercury Pollution Prevention Initiative, visit www.michigan.gov/deqmercuryp2.

MICHIGAN BUSINESS POLLUTION PREVENTION PARTNERSHIP



MBP3 member provides watershed management education for an elementary class in Saginaw (GM Saginaw Metal Castings).

The Michigan Business Pollution Prevention Partnership's (MBP3) mission is to advance P2 activities in the state of Michigan by encouraging businesses to initiate and expand their current P2 practices and by providing public recognition for their individual efforts. The partnership promotes the application of cost-effective, innovative techniques which lead to reductions in waste. Source reduction is the key to sustainable business; however, reuse and recycling efforts remain an important aspect to overall success.

The MBP3 continues to grow with its seventh consecutive year of positive enrollments and advancing innovative technologies with a multitude of information exchange strategies. The MBP3 enjoyed another strong year with 35 new partners for a total of 242 voluntary participants. At the close of 2004, there were MBP3 partners located in 103 different cities and 44 counties.

A primary focus has always been on the transfer and sharing of information and technology. The partnership continues to seek out new, innovative source reduction and waste minimization opportunities which can result in decreased liabilities and increased cost savings. One particular area of success in the information exchange department is the ongoing workshop series. These series continue to be a means of transferring both information and highlighting innovation at the facility level. Utilizing these workshops and the ever increasing availability of electronic media, members continue to take advantage of the ideas on P2 oriented environmental management, sustainability, recycling, and resource management.

This past year the MBP3 conducted two more highly successful workshops hosted by Siemens VDO Automotive and Fishbeck, Thompson, Carr & Huber. These particular workshops focused on electronic recycling issues along with overall business strategies which integrate sustainable components into their core structure. These workshops continue to be a valuable resource for the transfer of technology, program ownership, partner-to-partner networking, and opportunities for partners to offer input regarding the future of the MBP3.

For more information, visit www.michigan.gov/deqp2partnerships.

Michigan Business Pollution Prevention partners include:

- Access Business Group
- ADAC Plastics, Inc.
- AEC-Manchester Stamping
- Alpha Plastics, Inc.
- American Axle & Manufacturing - Detroit Gear and Axle
- American Electric Power
- ANR Pipeline Company
- Applied Environmental
- Arnold Center, Inc.
- ARVCO Container Corporation

- ArvinMeritor, Inc.
- Atlas Technologies, Inc.
- ATOFINA Chemicals, Inc.
- Atomic Cleaning Systems LLC
- AutoAlliance International, Inc.
- Automatic Spring Products Corporation
- B & B Environmental Services, LLC
- Baker Office Interiors
- BASF Corporation, Wyandotte Site
- Battery Solutions Inc.
- Bazzani Associates
- Bear Truss, Inc.
- Behr Industries Corporation
- Belle Maer Harbor
- Benteler Automotive
- Betz Industries
- BLDI Environmental & Safety Management
- Borg Warner Cooling Systems
- BP Amoco Company
- Brownrigg Companies, Ltd.
- Cadillac Renewable Energy
- Campbell & Company
- Capital City Associates
- Capitol Group Governmental Consultants
- Cascade Engineering
- Central MI Sustainable Business Forum
- Chemical Management Associates Inc.
- Chivas Industries
- City of Grand Haven
- City of Wyoming - Clean Water Plant
- C-Mar Products Inc.
- Coldwater Board of Public Utilities
- Collins & Aikman, Westland Operations
- Complete Builders, Inc.
- Compliance Resources and Technologies Inc.
- Consumers Energy - Adrian Service Center
- Consumers Energy - BC Cobb Plant
- Consumers Energy - JH Campbell Complex
- Consumers Energy - JR Whiting Plant
- Consumers Energy - Parnall Rd. Office Complex
- Consumers Energy, J.C. Weadock Plant
- Corsair Engineering, Inc.
- Crystal Flash Energy
- Cyltec LLC
- Delphi Energy and Chassis
- Delta College
- Delta Tube & Fabricating Corp.
- Demmer Corporation - Delta Plant
- Demmer Corporation - Oakland
- Demmer Corporation - Porter
- DENSO Manufacturing Michigan, Inc.
- Depor Industries, Inc.
- Detroit Edison Belle River Plant
- Detroit Edison - Fermi 2 Plant
- Detroit Edison Company
- Detroit Edison Greenwood Energy Station
- Detroit Edison Harbor Beach Plant
- Detroit Edison Monroe Plant
- Detroit Edison River Rouge Plant
- Detroit Edison St. Clair Plant
- Detroit Edison Trenton Channel Plant
- Detroit Edison Warren Service Center
- DeWitt Barrels
- Dow Corning Midland Plant
- DTE Office Complex
- DuPont Automotive, Mt. Clemens Site
- Dura Automotive Systems, Inc.
- E & E Manufacturing Company, Inc.
- Eagle Ottawa - Rochester Hills, Ltd.
- Eagle Ottawa Leather Company (Grand Haven)
- East Jordan Iron Works
- Eaton Aeroquip Inc. - Jackson
- Eaton Corporation - Saginaw
- Eaton Corporation - Southfield
- Eaton Corporation PSCO Ann Arbor
- Electrical Design and Control
- Elm Plating Company
- Envirologic Technologies, Inc.
- Environmental Health Resources Inc.
- ESCO Company Limited Partnership
- Evans Tempcon
- Flexible Products Co. Inc.
- Ford Motor Company - ATNPC
- Ford Motor Company - Livonia Transmission
- Foundry Association of Michigan
- Four Winns, Inc.
- General Motors - Orion Assembly Center
- General Motors - PCC Validation
- General Motors - Pontiac Assembly Center
- General Motors Lansing Regional Stamping Plant
- General Motors Powertrain - Bay City Plant
- General Motors Powertrain - Flint North
- General Motors Powertrain - Livonia Engine
- General Motors Powertrain - Romulus Engine Plant
- General Motors Powertrain - Romulus Transmission
- General Motors Powertrain - Saginaw Malleable Plant
- General Motors Powertrain - Saginaw Metal Castings
- General Motors Powertrain - Warren Transmission
- General Motors Technical Center
- General Oil Company, Inc.

- Genesee Power Station
- Genesys Health System
- Georgia-Pacific Corporation - Milan
- Gil-Mar Manufacturing Company
- Global Business Solutions, LLC
- Grayling Generating Station
- Great Lakes Gas Transmission Company
- Griffin Pest Control
- Harry Major Machine & Tool
- Haworth, Inc.
- Hazekamp Meats
- Hemlock Semiconductor
- Herman Miller, Inc.
- Huron, Inc.
- I & W Industries, LLC
- Inalfa/SSI Roof Systems
- Inland Waters Pollution Control, Inc.
- Irwin Seating Company
- ITT Industries
- Jan's Professional Drycleaners
- Kaiser Optical Systems, Inc.
- Keykert USA
- Knoll Inc.
- Lacks Enterprises - 52 Paint East
- Lacks Enterprises - 52 Paint West
- Lacks Enterprises - 52nd Street Mold
- Lacks Enterprises - Airplane North & South
- Lacks Enterprises - Airwest Assembly
- Lacks Enterprises - Airwest Mold
- Lacks Enterprises - Barden Assembly
- Lacks Enterprises - Brockton Mold
- Lacks Enterprises - Monroe Plastic Plate
- Lacks Enterprises - Raleigh Mold
- Lacks Enterprises - Raleigh Paint
- Lafarge North America - Alpena Plant
- Lear Corporation
- Liberty Pest Control, LLC
- Light Corporation
- MAC Valves
- Machine Tool & Gear
- Magna Donnelly-Holland
- Magna Donnelly-Holland
- Magna Donnelly-Grand Haven
- Magni Industries, Inc.
- Malcolm Pirnie, Inc.
- Marathon Ashland Petroleum, LLC
- March Coatings - Plant 2 .
- March Coatings – Plant 1
- Marine Pollution Control Corporation
- Mark IV Automotive
- Matrix System Automotive Finishes, Inc.
- Mayco Plastics, Inc.
- McLaren Performance Technologies
- Meridian Automotive Systems - Paint Facility
- Meridian Automotive Systems - Plant 1
- Meridian Automotive Systems - Plant 5
- Meridian Automotive Systems - Plant 7
- Meridian Automotive Systems-Canton
- Meridian Automotive Systems-Detroit
- Meridian Automotive Systems-Ionia Operations
- Michigan Boating Industries Association
- Michigan Chemical Council
- Michigan Institute of Laundering and Drycleaning
- Mid-West Instrument
- Midwest Supply and Maintenance Co.
- Modern Plastics Corporation
- Nalco Company
- Noron Industries, Inc.
- Nyloncraft, Inc.
- Palisades Nuclear Plant
- Palmer Engineering, Inc.
- Pfizer Global Manufacturing
- Pfizer Global Research and Development
- Pfizer Inc.
- Pioneer Foundry Company, Inc.
- Plastech Engineered Products - Clarkston
- Plastech Engineered Products - Crosswell
- Plastech Engineered Products - Port Huron
- Polar Environmental Service Corporation
- Pratt & Whitney AutoAir, Inc.
- Quality Metalcraft, Inc.
- ReCellular, Inc.
- Resource Recovery Corporation of West Michigan
- RMT, Inc.
- Ronningen Research & Development Company
- Sackner Products - Unit of Jason Inc.
- San Chez Restaurant
- Saugatuck Yacht Service
- Schefenacker Vision Systems USA, Inc.
- Siemens VDO Automotive
- Sierra Geological & Environmental Consultants, Inc.
- Skilled Manufacturing, Inc.
- Solutia, Inc.
- Spartan Steel Coating
- SQS, Inc.
- Steelcase, Inc.
- Sunshine Prairie Farm
- Suspa Incorporated
- T.E.S. Filer City Station
- TAC Manufacturing, Inc.

- Taplin Environmental Contracting Corporation
- Taylor Building Products
- Teknit
- TekSolutions, LLC
- Tenneco Automotive

- Tenneco Automotive
- Tesco Engineering
- The Traverse Group
- The Wireless Source
- Tower Marine

- TriMedia Consultants, Inc.
- Tweddle Litho Company
- United States Postal Service, Lansing Branch
- Universal Coating, Inc.
- Vico Products Company

- Visteon Automotive Systems - Sheldon Road Plant
- Visteon Corporation - Chesterfield Plant
- Visteon Corporation - Utica Plant
- Wacker Chemical
- Waste Trends

- Weyerhaeuser Company
- Wisconsin Electric Power - Presque Isle Plant
- Yamaha Musical Products
- Yazaki North America, Inc.

MICHIGAN CLEAN MARINA PROGRAM



Fall boat pull out presents opportunities for Michigan Clean Marina participants to implement additional pollution prevention programs.

The Michigan Clean Marina Program advances environmental stewardship of the marina/boating industry by protecting water resources and wildlife habitat and promoting environmentally sound boating practices. The Program educates and provides technical assistance to the marina industry and recreational boating community on ways to minimize waste, enact best management practices, and practice P2, and will continue to enhance the network for environmental education on aspects of boating and water recreation. The development of Clean Marina materials provides public recognition to participating facilities.

The Michigan Clean Marina Program was initiated to preserve and enhance, through voluntary stewardship efforts, Michigan's greatest resource, the Great Lakes and their connecting waterways. The Program officially began with the signing of a Memorandum of Understanding between the Michigan Boating Industries Association, Michigan Sea Grant College, and the MDEQ. In support of the program, the MDEQ's

Environmental Science and Services Division received a grant from Coastal Zone Management to complete a guidebook on marina best management practices and buffer zone development which has recently been introduced. This was combined with a series of program workshops which were developed in order to provide tools and other educational materials to the marina operator.

The Program also includes a designation component that allows participants to achieve public recognition through environmental stewardship activities. A self-assessment process where the marina reaches a minimal level of environmental stewardship with a set of required parameters assists with this achievement.

Michigan has more than 1,400 public access sites, 750 marinas, 680 marine dealers, 41 boat manufacturers, 85 Great Lakes recreational harbors, and 1.2 million registered boaters giving the Michigan Clean Marina Program plenty of opportunities for success.

For additional information, visit www.michigan.gov/deqp2partnerships.

Clean Marina Members include:

- Anchor In Marina, Cheboygan
- Anchorage Marina, Holland
- Bay Breeze Yacht Charters, Traverse City
- Bay Harbor Lake Marina, Bay Harbor
- Belle Maer Harbor, Harrison Township
- Lac LaBelle State Dock, Lac LaBelle
- Lost Peninsula Marina, Erie
- Luna Pier Harbour Club, Luna Pier
- MacRay Harbor, Inc., Harrison Township
- Manistee Municipal Marina, Manistee

- Bergmann Marine, Charlevoix
- Bridge Harbour Marina, Port Huron
- City of Boyne City, Boyne City
- City of St. Ignace, St. Ignace
- Copper Harbor State Park, Copper Harbor
- Drummond Island Yacht Haven, Drummond Island
- Eagle Harbor State Dock, Eagle Harbor
- Edward C. Grace Memorial Harbor, Elk Rapids
- Eldean Marine Group, Macatawa
- Emerald City Harbor, St. Clair Shores
- Great Lakes Shores Marina, Standish
- Grosse Pointe Yacht Club, Grosse Pointe
- Howe Interlakes Marine, Indian River
- Indian River Marina, Indian River
- Irish Boat Shop, Harbor Springs`
- Irish Boat Shop, Charlevoix
- Keans Detroit Yacht Harbor, Detroit
- Klaves Marina, Inc., Pinckney
- Marshall Marine LLC, Harrison Township
- New Buffalo Municipal Marina, New Buffalo
- Orion Marine Center, Lake Orion
- Pier 1000 Marina, Benton Harbor
- Pier 33, St. Joseph
- Port Elizabeth Marina, Caseville
- Port Sanilac Marina, Port Sanilac
- Saint Clair Boat Harbor, St. Clair
- South Haven Municipal Marina, South Haven
- Sundog Marina, Harrison Township
- Sunset Harbor, Harsens Island
- Torresen Marina, Muskegon
- Viking Boat Company, Cedarville
- Village of Port Sanilac, Port Sanilac
- Walstrom Marine, Inc., Cheboygan
- Walstrom Marine, Inc., Harbor Springs
- Whitehall Landing, Inc., Whitehall
- Windjammer Marina, Oden
- Yacht Basin Marina, Holland

MICHIGAN GREAT PRINTERS PROJECT



The mission of the Michigan Great Printers Project (MI-GPP) is to promote P2 as a standard practice of the printing industry. Through the Project, printers, print buyers, suppliers, regulatory agencies, and technical assistance providers work to create a cooperative business environment that is both economically sound and conducive to P2. The Project stresses P2 as the preferred method of achieving environmental compliance.

The focus for 2004 was print buyer education and outreach. Information about the partnership and preferred design and printing practices was shared with state of Michigan employees through seminars hosted by the Department of Management and Budget, as well as through the Departments of Agriculture and MDEQ Earth Day activities. Through direct contact, phone calls, or e mail, MDEQ grant applicants, environmental groups, and local and county governments were supplied information pertaining to the partnership and preferred printing practices. As a result, over 1,000 individuals were given resources on preferred printing practices, 25 new organizations pledged to become Great Print Buyers, and state government made a commitment to support the Michigan Great Printers.

To find out more about the MI-GPP, visit www.michigan.gov/deqp2partnerships.

Printers who have met the requirements for the Michigan Great Printers Project are:

- A & E Printers, Lansing
- A-1 Printing & Copy Center, Kalamazoo
- Access Business Group, Ada
- Action Printing, Sterling Heights
- Adair Printing, Dexter
- Allegra Print & Imaging, Portage
- Allegra Print & Imaging, Holland
- Allegra Print & Imaging, Wixom
- Allegra Print & Imaging, Lansing
- Allegra Print & Imaging, Holland
- Classic Printing, Inc., Holt
- Colonial Press, Inc., Jackson
- Copy Options Inc., Grand Rapids
- Copy Quick, Saginaw
- Craft Press Printing, Niles
- Dandee Printing Company, Lansing
- Danielson Color Print, Ludington
- Delta Printing Company, Inc., Lansing
- Dickinson Press, Grand Rapids
- Duffy's Printing, Detroit

- Allegra Print & Imaging, Royal Oak
- Allegra Print & Imaging, Grand Rapids
- Allegra Print & Imaging, Grand Haven
- Allegra Print and Imaging, Saline
- Alphagraphics, Portage
- American Ink, Fraser
- Amerikal, Inc., Kalamazoo
- Anderson Lithograph, Commerce
- Aquila Printing, Detroit
- Arrow Swift, Mason
- ASAP Printing, Okemos
- Batson Printing, Inc., Benton Harbor
- Book Concern Printers, Hancock
- BRD Printing Inc., Lansing
- Bryant Printing, Kalamazoo
- Business Cards Plus, Portage
- Business Imaging Group, Brighton
- Champion Printing and Advertising, Jackson
- Clarke American, Grand Rapids
- Classic Printers, Rochester Hills
- Hatteras Printing, Dearborn
- Holland Sentinel, The, Holland
- Homewood Press, Inc., Toledo
- Howard Printing, Kalamazoo
- Huron Valley Printing & Imaging, Ann Arbor
- Ideal Printing Company, Grand Rapids
- Impressions Printing Inc., Highland
- Inco Graphics, Mason
- Ingham County Printing Office, Mason
- International Minute Press, Portage
- International Minute Press, Farmington Hills
- International Minute Press, Ann Arbor
- IPC Print Services, St. Joseph
- J B Printing, Kalamazoo
- Janutol Printing Co., Detroit
- Jet Speed Printing Company, St. Johns
- Jiffy Print, Flint
- Jiffy Print, Inc., Kalamazoo
- Job Shop, The, Lansing
- John Henry Company, The, Lansing
- JP Print & Copy, Ann Arbor
- Keystone Printing, Inc., Lansing
- Kimcraft Printers, Canton
- Kinko's, Okemos
- Kinko's Copies, Inc., Lansing
- Kinko's, Inc., East Lansing
- Lake Superior Press, Inc., Marquette
- Lansing Printing Company, Lansing
- Lawson Printers, Inc., Battle Creek
- Logan Brothers, Lansing
- E&G Printing Service, Inc., Madison Heights
- Earle Press Printing, Muskegon
- Econo Print, Inc., Pinckney
- Edwards Brothers, Inc., Ann Arbor
- EPI Printers, Livonia
- Etheridge Company, The, Grand Rapids
- Executive Printing Services, Farmington Hills
- F.P. Horak Company, The, Bay City
- Falcon Printing, Ada
- Fidlar Doubleday, Kalamazoo
- Flashes Publishers, Allegan
- Gardner Printing, Lansing
- Gargoyle Graphics L.L.C., Lansing
- G-Graphics, Brighton
- Gladstone Printing, Lansing
- Goetzcraft Printers, Ann Arbor
- Gonzalez Integrated Marketing, Inc., St. Clair Shores
- Grandville Printing, Grandville
- Graphic Enterprises, Inc., Madison Heights
- Graphics III, Inc., Coldwater
- Print Haus, The, Holland
- Print Shop, The, Saginaw
- Printery, The, Holland
- Printwell, Taylor
- Progressive Graphics, Hastings
- Quick Printing Company, Grand Rapids
- Relizon, Kalamazoo
- Reyes Advertising Specialties, Wyandotte
- Riegle Press Inc., The, Davison
- Riverrun Press, Parchment
- Rogers Printing Inc., Ravenna
- Rotary Multiforms, Inc., Warren
- SBF/Corona Graphics, Inc., Kalamazoo
- Seeley's Printing Service, Charlevoix
- Sheridan Books, Inc., Ann Arbor
- Sheridan Books, Inc., Chelsea
- Sir Speedy, Port Huron
- Sir Speedy Printing, Livonia
- Spartan Printing, Lansing
- Standard Printing & Office Supply, Marshall
- Standard Register Company, Adrian
- State of Michigan, Print & Graphic Services, Lansing
- Sterling Press, Lansing
- Superior Business Solutions, Kalamazoo
- Superior Colour Graphics, Kalamazoo
- SVH Group, Holland
- Target Information Management, Inc., Okemos
- TBF Graphics, Saginaw
- Thomson-Shore Inc., Dexter
- Townley Studio, Jackson

- LTI Printing, Sturgis
- MacKellar Screenworks, Holt
- Macomb Printing, Clinton Township
- Malloy Inc., Ann Arbor
- Mason Graphics, Inc., Mason
- McGrath-DeFoe Printing, Charlotte
- McKay Press, Midland
- McNaughton & Gunn, Inc., Saline
- Michigan Education Data Network Association, East Lansing
- MICR Graphics/Billy the Printer, Muskegon
- Millbrook Printing, Grand Ledge
- Mitchell Graphics, Petoskey
- Moore North America, Inc., Grand Rapids
- Myers Print King, Lansing
- NorthStar Print Group, Norway
- Paper Image Printing Center, E. Lansing
- Parkman Printing, Inc., Ann Arbor
- Petoskey News-Review, Petoskey
- Portage Printing, Portage
- Presto Print, Grand Rapids
- Tweddle Litho Company, Clinton Township
- University Lithoprinters, Ann Arbor
- Utley Brothers, Inc., Troy
- Valassis Communications, Inc., Livonia
- Vertis Inc RNS - Greenville, Greenville
- ViaTech Publishing Solutions, West Bloomfield
- Webco Press - Mass Media, Lapeer
- West Colony Printing, Kalamazoo
- Whitlam Label Co., Center Line
- Wood Press Company, Jackson

MICHIGAN TURFGRASS ENVIRONMENTAL STEWARDSHIP PROGRAM



State of the art wastewater recycling system (Arcadia Bluffs Golf Course).

Michigan's Turfgrass Environmental Stewardship Program's (MTESP) mission is to advance the environmental stewardship of Michigan's golf industry. The MTESP promotes the protection of water resources and native vegetation, and the enhancement of wildlife habitat on golf course properties. Increased communication between Michigan's golf industry, state agencies, environmental advocacy groups, and Michigan State University is also part of the Program's mission, as well as recognizing and awarding environmental stewardship achievements.

The MTESP leads the nation in golf course-related environmental stewardship and P2 activities. From the smallest facility to the largest resort, the golf industry is enhancing and protecting our valuable natural resources through its stewardship efforts. There has been concern with the potential for point source and non-point source pollution from all types of golf courses, old and new. The MTESP has been

successful in addressing these concerns because of its unique blend of partners, which include the Michigan Department of Agriculture, Michigan Turfgrass Foundation, MDEQ, Michigan Golf Course Superintendents Association, Michigan Golf Course Owners Association, and Golf Association of Michigan.

Currently there are 229 participating Michigan facilities, including 51 certified courses that are voluntarily participating in the MTESP. The total enrollment equates to approximately 25 percent of all courses in Michigan. Participants are encouraged to undertake increased P2 and compliance assistance programs related to their operation and maintenance activities. A strong focus for 2004 has been environmentally preferable purchasing and how it can benefit the turfgrass industry.

For more information, visit www.michigan.gov/deqp2partnerships.

POLLUTION PREVENTION WEEK

Michigan has participated in the celebration of national "Pollution Prevention (P2) Week" since its inception in 1996. During this week, the MDEQ promotes P2 activities at home, work, and school. The theme for P2 Week 2004, September 20-26, was "Sustainability Thru Pollution Prevention." The MDEQ is proud of its P2 heritage, programs, initiatives, and partnerships. Raising P2 awareness in the community through education and modification of our everyday behavior and/or lifestyle, is an important role during P2 Week.

P2 Week provides an excellent opportunity for the MDEQ to educate, support, and promote P2 activities. In schools, the MDEQ conducts environmental education presentations about P2 and various MDEQ programs, as well as P2 program training workshops to businesses and the community. At work, the MDEQ sponsors a "brown bag" luncheon with P2

presentations for all staff. The MDEQ issues P2 awards in recognition of staff that display exemplary P2 accomplishments throughout the year. Additionally, MDEQ encourages partner companies and government agencies to participate in P2 Week activities.

The MDEQ P2 Week Web site features practices, actions, sustainability, and other applicable P2 program information. P2 tips for the home are available on the Internet. There are resources for energy efficiency, education, green building, landscaping, recycling, and others. For more information, visit www.michigan.gov/deqp2initiatives.

PULP, PAPER, AND PRODUCTS POLLUTION PREVENTION PROGRAM



The overall goal of the Pulp, Paper, and Products Pollution Prevention (P5) Program is environmental improvement in concert with continued economic growth and security for Michigan's forest products industry. The program is a voluntary P2 partnership between the MDEQ Environmental Science and Services Division, the Michigan Forest Products Council, and the Michigan Pulp and Paper Environmental Council, with participation open to all forest product companies in Michigan. Currently there are 13 member companies and 2 affiliate members committed to the partnership. Annually, Program partners make a written commitment to P2 and establish measurable goals.

The Program's 2003 Annual Report, released in September, 2004, reveals that member mills have made significant progress towards meeting their established short-term (one year) and long-term (seven year) goals through diligent P2 efforts. Of the 19 long-term goals originally set in 1996, 12 have been met or exceeded, 4 were nearly attained, and significant progress has been made towards the final 3 long-term goals. Compared to the Program's industry baseline, member mills have experienced a production increase in the last decade of approximately 15 percent, while having accomplished significant reductions in the following areas as expressed on a production adjusted basis:

- Hazardous waste generation by 51 percent;
- Waste water volume by 22 percent;
- Total emission of substances to air by 33 percent;
- Discharges of substances in wastewater by 40 percent; and
- Solid waste landfilled by 42 percent.

For 2004, members chose two main areas of focus: progress in mercury P2 and development of environmental management systems. In addition to these areas of focus, members continue to remain committed to reducing sewer losses, air emissions, water usage, and wastewater discharges; minimizing land filling of solid wastes by finding practical uses for the waste, as well as promoting recycling and sustainable forestry.

For more information, visit www.michigan.gov/deqp2partnerships.

Members of the P5 Program include:

- Domtar Industries, Port Huron
- Georgia Pacific Corporation, Gaylord
- International Paper Company, Quinnesec
- Decorative Panels International, Alpena
- Mead Westvaco Papers Group, Escanaba
- SAAPI Fine Paper, North America, Muskegon
- Smurfit-Stone Container Enterprises, Inc., Ontonagon
- Weyerhaeuser, Grayling
- White Pigeon Paper Co., White Pigeon
- Menasha Packaging Co., LLC, Otsego
- Menominee Paper Co., Menominee
- Packaging Corporation of America, Filer City
- RMT, Inc. (affiliate member), Ann Arbor and Madison, Wisconsin
- Rock-Tenn Corporation, Battle Creek

RECYCLING



Michigan state government has several mandates to recycle and buy recycled products.

Companies often look at recycling as the first step when considering P2. The MDEQ staff developed numerous tools to help companies set up recycling programs and find markets for recycled materials. Markets are key to recycling program sustainability. No matter how efficient a collection system is, when there is no market for the collected material, time and effort are wasted. Using the Internet to provide tools for businesses to use to find markets and develop programs has allowed staff more time to develop other resources and be more effective with the limited state government resources.

State government has several mandates to recycle and buy recycled products. Changes in how government office paper is being recycled provided an opportunity to revisit the previous Memorandum of Understanding under which the MDEQ and

the Department of Management and Budget operated the program. As a result, MDEQ staff have become more involved in educating state employees on the benefits of recycling and developing more opportunities for staff to recycle. The MDEQ staff continues to provide Michigan industry assistance in establishing recycling programs and sharing lessons learned between government and industry, helping both groups to recycle more efficiently.

For more information on recycling, visit www.michigan.gov/deqrecycling.

REGULATORY INTEGRATION

Regulatory Integration is a means of promoting P2 to businesses, industry, and municipalities utilizing the outreach potential of regulatory staff through permitting, rulemaking, compliance inspection, and enforcement program areas.

The MDEQ Environmental Science and Services P2 Field Services staff facilitate integration of pollution prevention into all MDEQ programs by working with department staff and serving as a resource to provide assistance to regulated facilities. The staff accompanies inspectors to facilities, contributes to proposals for Supplemental Environmental Projects used in enforcement cases, and provides follow-up services to businesses and institutions wishing to implement P2. The P2 Field Services staff works closely with the MDEQ regulatory staff to disseminate P2 information through workshop presentations for hazardous materials management and industrial wastewater pre-treatment, and written resource materials for energy assessments, renewable energy, vehicle service and maintenance, environmentally preferred purchasing, and “green” buildings.

Regulatory staff is recognized each year through the P2 Staff Award. The award recognizes employees who showed initiative and imagination in developing and implementing approaches to advocate P2 through MDEQ regulatory programs. These individuals use regulatory tools, outreach, “teachable moments,” written materials, and site visits to educate and encourage facilities in P2 concepts. Their creative efforts results in the adoption of P2 practices at a number of Michigan facilities. The 2004 P2 Staff Award winners are Ms. Nadine Deak, Waste and Hazardous Materials Division; Ms. Julia Kirkwood, Water Bureau of the Kalamazoo District Office, and Ms. Janice Heuer, Water Bureau of the Cadillac District Office.

For additional information, visit www.michigan.gov/deqp2, select Regulatory Integration.

RETIRED ENGINEER TECHNICAL ASSISTANCE PROGRAM

The Retired Engineer Technical Assistance Program (RETAP) provides quality P2 assistance to Michigan’s small businesses and institutions by identifying opportunities to reduce waste generation and energy usage at manufacturing and commercial operations. The RETAP utilizes experienced, retired engineers and scientists to provide on-site P2 and energy efficiency assessments that are free, non-regulatory, and confidential. The RETAP assistance is available to businesses with less than 500 employees in Michigan and institutions of any size. This year over 150 assessments were completed, surpassing program goals for the third year in a row.

As a national award winning program, the RETAP continues to expand the value of its services by contributing needed P2 expertise to participants involved in the Health Care P2 Initiative, State Park Stewardship Initiative, Suppliers to the Office Furniture Manufacturing Industry Project, and the RETAP Student Internship and Technology Demonstration Programs. In the past year, these efforts have included 32 on-site assessments and the mentoring of four company interns.

The RETAP further demonstrated how the state of Michigan can benefit from practicing what it teaches to businesses by conducting 14 P2/energy efficiency assessments at state owned and leased facilities. These 14 assessments identified over \$2.1 million in potential savings that can be achieved annually through the adoption of various P2 and energy conservation measures (see table below). These RETAP assessments will continue into Fiscal Year 2005 to include an additional 20 buildings, and the RETAP will be instituting a tracking system to quantify actual savings achieved by the assessed facilities.

Energy Conservation Measure	Potential Annual Savings
Chilled Water	\$ 976,000
HVA	\$ 680,000
Lighting	\$ 329,000
Water and Sewer	\$ 16,000
Other Electrical	\$ 37,000
Other Steam	\$ 91,000
Total Potential Annual Savings	\$ 2,129,000

Examples of results from companies participating in the RETAP assessments during 2004 are as follows:

- An injection molding company is salvaging plastic waste and partnering with another company to make new products from the scrap; saving \$10,000 annually in waste disposal costs.
- By switching from a solvent-based to a water-based paint, a company reduced its volatile organic emissions by 90 percent and its drying time from eight hours to twenty minutes.
- A carton manufacturer started recycling plastic banding, metal banding, stretch wrap, office paper, and newspaper resulting in an additional \$7,000 in revenue per year while reducing its dumpster pull cost by \$5,000 per year.
- A hospital reduced its annual electrical costs by over \$190,000 after implementing the RETAP recommendations to raise its power factor, install more efficient motors on high load equipment, and adding soft starts and other load-shedding controls.
- A painting company saved \$20,000 per year by changing its polymer suppliers, \$35,000 per year by establishing a compressed air maintenance and leak detection program, and an additional \$35,000 per year by reclassifying its waste sludge as non-hazardous.

For more information, visit www.michigan.gov/deqretap.

RETIRED ENGINEER TECHNICAL ASSISTANCE PROGRAM STUDENT INTERNSHIP PROGRAM

The RETAP Student Internship Program provides engineering students with an opportunity to learn about P2 practices and technologies commonly used in general manufacturing and agricultural facilities. The Program is a partnership between the MDEQ, participating Michigan universities, RETAP, and businesses.

Fourteen students were awarded internships to help implement manure composting, identify alternatives for fungicides for apple growers, energy efficiency practices at manufacturing facilities and hospitals, best management practices for marinas, fugitive dust control measures and other similar projects. The following are some examples of the 2004 RETAP Student Internship projects:



Bob Avery, ESSD Laboratory Section Chief; Li Xiong, MS School of Packaging major at Michigan State University; Dulles Copedge, RETAP Internship Manager. Li was assigned to the Laboratory to research the lab specimen transport containers currently used by DEQ.

- A Grand Valley State University student conducted a water study at Birds Eye Foods in Fennville, Michigan. The study identified best management practices with the potential to reduce water consumption up to 7.7 million gallons per year (a 10 percent reduction) with cost savings of \$8,717.12 per year. The intern also identified vacuum pump seal leaks that would prevent the loss of berry slurry mixes, with potential cost saving of approximately \$40,000 per year and a 20 percent reduction in biological oxygen demand. The company is pursuing the implementation of both projects.
- A Wayne State University student was successful at implementing fugitive dust practices with annual cost savings of \$12,500 per year at Sun Chemical Company in Muskegon, Michigan. The intern implemented best management practices, identified maintenance repairs, suggested equipment purchases to eliminate process leaks, adjusted and installed pressure regulators to reduce baghouse blow down pressures, and also developed maintenance procedures for baghouse operation. Most of the suggestions have been implemented and the others are under consideration.
- A Saginaw Valley State University student conducted an energy efficiency audit that led to the development of a production schedule with potential annual cost savings of \$49,700 at Carbone of America in Bay City. The intern suggested staggered startup and weekend operation schedules to lower on-peak electricity demand. The intern also suggested replacing older T-12 light fixtures with T-8 lighting fixtures to lower electrical demand; the use of motion detectors, sectional lighting in supply rooms, timer switches, and other methods to reduce energy losses in unoccupied rooms.

The following is a list of universities participating in the 2004 RETAP Internship Program:

- Grand Valley State University
- Michigan State University
- Michigan State University Extension Service
- Michigan Technological University
- Saginaw Valley State University
- University of Michigan
- Wayne State University
- Western Michigan University

For additional information, visit www.michigan.gov/deqretap.

SMALL CHEMICAL MANUFACTURERS POLLUTION PREVENTION INITIATIVE



Dr. Joseph Louvar, Wayne State University, reviews the P2 best practices resources at an SCMP21 industry workshop. They were developed for use by Michigan's small chemical manufacturers.

The mission of the Small Chemical Manufacturers Pollution Prevention Initiative (Initiative) is to promote and further the implementation of P2 among Michigan's small chemical manufacturers. The ESSD and the chemical manufacturing industry partners provide technical assistance through workshops, assessments, internships, demonstration projects, and distribution of resource information. The following successes were achieved this year through the Initiative:

- A P2 workshop was conducted in cooperation with ChemAlliance, the Michigan Chemistry Council, the Synthetic Organic Chemical Manufacturers Association, and the National Association of Chemical Distributors. The workshop provided an engineering approach to P2 opportunity identification and provided practical, commercially proven techniques for acting on these opportunities at both new and existing facilities.
- A workshop on chemical hazards-risk screening models was conducted in cooperation with the Consortium for Environmental Risk Management, the Indiana Clean Manufacturing Technology Institute, and the USEPA. These useful models identify potential problem chemicals and processes when existing data is limited or unavailable, the first step in identifying viable P2 solutions for complex chemical manufacturing operations.
- An intern was placed at a small Michigan chemical company to identify root causes for fugitive dust emissions in its pigment manufacturing operations and develop viable P2 solutions to increase operational efficiencies and reduce

dust emissions. The intern successfully identified over a dozen opportunities to achieve a 90 percent reduction in emissions and reclaim over \$12,000 in lost material.

- Two Michigan chemical manufacturing facilities participated in the RETAP, while a third chemical company reported an annual \$60,000 savings by improving its disposal practices after undergoing a RETAP assessment.
- The Department of Chemical Engineering at Wayne State University finalized and made available technical reports on 20 P2 best practices designed to allow small chemical manufacturers to evaluate and implement these practices within their own operations.

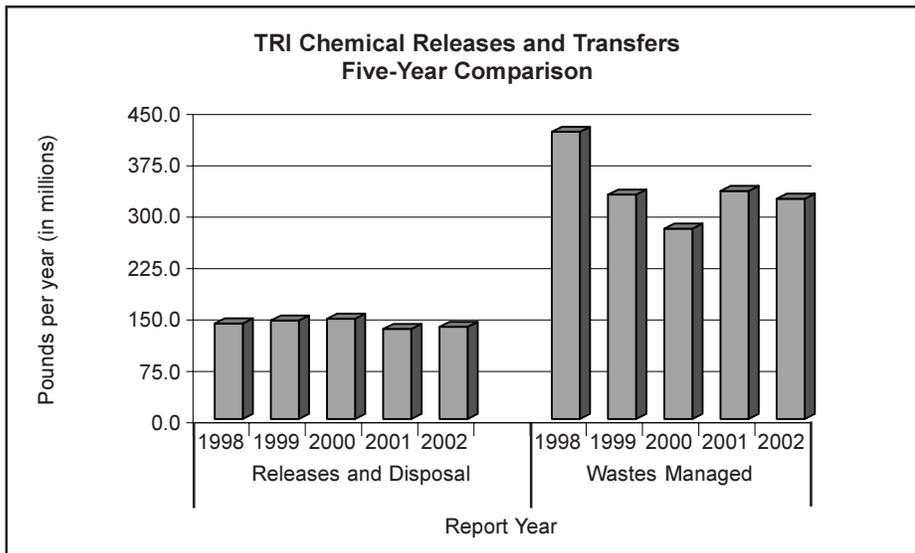
Initiative staff committed to assisting in the development and implementation of integrated U.S. Department of Energy workshops and energy analysis tools in a project proposal submitted under the State Energy Program. A critical requirement to the success of the project is having the Initiative's participating chemical manufacturers serve as the test audience.

For more information, visit www.michigan.gov/deqp2partnerships.

Appendix A: Toxic Chemical Release Inventory

The Toxic Release Inventory (TRI) chemical data presented in this report is a statewide total of the data for 1998 through 2002 and does not indicate upward or downward trends for individual pollutants or facilities.

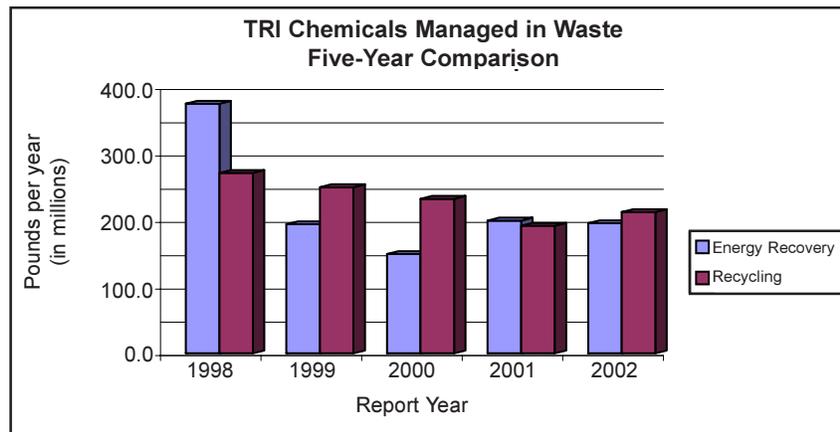
Results for 2002, the most recent reporting year for which data is available, show that chemical releases increased slightly from 2001. Facilities reported total on-site and off-site releases of 135 million pounds in 2002, compared to 132 million pounds in 2001.



Note: Releases and Disposal include air emissions, discharges to surface waters, on-site disposal to underground injection wells or landfills, on-site releases to surface impoundment or other land releases, and transfers off-site for disposal or release. Wastes Managed includes all waste transfers off-site for energy recovery, recycling, or treatment, and discharges to publicly owned treatment works.

Graph 1 shows quantities of toxic chemicals released and disposed and managed as waste that facilities reported under the TRI. In the past, the MDEQ has reviewed the TRI data to determine whether the information can be used as an indicator of the progress of P2 in the state. The review has focused on reductions in the amounts of TRI chemicals released annually, changes in recycling and energy recovery rates, and fluctuations in production information. Results have been difficult to assess due to the difficulty of extracting the impacts of the economy and changes in environmental legislation on TRI.

Facilities also report management of TRI chemicals in wastes both on-site and off-site. Graph 2 shows the total amount of production-related waste managed by Michigan facilities through energy recovery and recycling activities.



Note: This represents waste used for energy recovery and recycled both on-site at facilities or transferred off-site to other locations.

The MDEQ is currently assessing TRI data for Reporting Year 2003. This information will be available from the MDEQ in January, 2005. For additional information, contact the MDEQ's SARA Title III Program office at 517-373-8481.

Additional information on individual pollutants and facilities, including historical information, is available on the internet at www.deq.state.mi.us/tri/.

Appendix B: Staff Contacts

<u>Program</u>	<u>Staff</u>	<u>Telephone</u>
Agriculture Pollution Prevention	Terri Novak	517-241-8526
Clean Corporate Citizen Program	Valerie Haan	517-241-0231
.....	Kelie Bond	517-241-7969
Community Pollution Prevention Grant Program	Richard Alexander	231-775-3960 x6322
Department of Defense/State of Michigan		
Pollution Prevention Alliance	Steven Kulesia	517-373-3109
Environmentally Preferred Purchasing	Karen Edlin	517-373-0604
Food Processing	Laura Rauwerda	616-356-0034
.....	Terri Novak	517-241-8526
Health Care Pollution Prevention	Dale Copedge	517-335-0383
Local Health Department Partnership	Richard Alexander	231-775-3960 x6322
Mercury Reduction Initiative	Steve Kratzer	517-373-0939
Michigan Automotive Project	Jeff Spencer	517-241-5719
Michigan Business Pollution Prevention Partnership	Jeff Spencer	517-241-5719
Michigan Clean Marina Program	Jeff Spencer	517-241-5719
Michigan Electronics Recycling Project	Lucy Doroshko	517-373-1322
Michigan Great Printers Project	Karen Edlin	517-373-0604
Michigan Household Hazardous Waste Grant Programs	Jeff Spencer	517-241-5719
Michigan Pulp Paper and Product Pollution		
Prevention Program	Karen Edlin	517-373-0604
Michigan Turfgrass Environmental Stewardship Program	Jeff Spencer	517-241-5719
Pollution Prevention Week	Margaret Fields	517-335-6520
Recycling	Lucy Doroshko	517-373-1322
Regional Pollution Prevention Grant Program	Richard Alexander	231-775-3960 x6322
Regulatory Integration of Pollution Prevention	Richard Alexander	231-775-3960 x6322
Retired Engineer Technical Assistance Program	David Herb	517-241-8176
RETAP Student Internship Program	Dale Copedge	517-335-0383
Small Business Pollution Prevention Loan Program	Sharon Goble	517-241-8280
Small Chemical Manufacturers Pollution		
Prevention Initiative	David Herb	517-241-8176
Technology Demonstration Program	Dale Copedge	517-335-0383
Toxic Chemical Release Inventory Data	Ruth Borgelt	517-373-9804
Web Sites	Darlene Harris	517-373-0318

Appendix C: Website Shortcuts

The following is a list of shortcuts for easy publication of Web site and access to the Department of Environmental Quality's web pages.

Agriculture Pollution Prevention	www.michigan.gov/deqp2partnerships
Alternative Fuels	www.michigan.gov/deqp2outreach
Annual Waste Water	www.michigan.gov/deqannualwastewater
Automotive	www.michigan.gov/deqp2outreach
Bright Idea	www.michigan.gov/deqp2initiatives
Clean Corporate Citizen	www.michigan.gov/deqc3
Clean Marina	www.michigan.gov/deqp2partnerships
Energy Efficiency Resources	www.michigan.gov/deqp2initiatives
Environmental Purchasing	www.michigan.gov/deqp2initiatives
Environmental Science and Services Division	www.michigan.gov/deqessd
Food Processing P2	www.michigan.gov/deqp2outreach
Great Printers	www.michigan.gov/deqp2partnerships
Local Health Depts	www.michigan.gov/deqp2partnerships
Manufacturer's Guidebook	www.michigan.gov/deqmanufactguide
Mercury P2	www.michigan.gov/deqmercuryp2
Metal Finishing	www.michigan.gov/deqp2partnerships
Michigan Business Partnership	www.michigan.gov/deqp2partnerships
Neighborhood Environmental Program	www.michigan.gov/deqnep
Operator Training & Certification for Water	www.michigan.gov/deqoperatortraining
Pollution Prevention	www.michigan.gov/deqp2
Pollution Prevention Awards	www.michigan.gov/deqp2awards
Pollution Prevention Initiatives	www.michigan.gov/deqp2initiatives
Pollution Prevention Outreach	www.michigan.gov/deqp2outreach
Pollution Prevention Partnerships	www.michigan.gov/deqp2partnerships
Pollution Prevention Week	www.michigan.gov/deqp2initiatives
Publications	www.deq.state.mi.us/pubcenter
Pulp, Paper & Products	www.michigan.gov/deqp2partnerships
Recycling	www.michigan.gov/deqrecycling
Recycling Contacts	www.michigan.gov/deqrecyclingcontacts
Regulatory Innovations	www.michigan.gov/deqincentives
Restaurant P2	www.michigan.gov/deqp2outreach
Retired Engineer Technical Assistance Program	www.michigan.gov/deqretap
Shooting Range Stewardship	www.michigan.gov/deqp2outreach
Small Chemical Manufacturing	www.michigan.gov/deqp2partnerships
Turfgrass Stewardship	www.michigan.gov/deqp2partnerships
US Department of Defense Michigan Alliance	www.michigan.gov/deqp2partnerships
Workshops	www.michigan.gov/deqworkshops

