



Pollution Prevention News

Special Issue:

Winners of the Administrator's Awards for Pollution Prevention

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Administrator's Awards for Pollution Prevention Go to 17 Organizations

Seventeen organizations were the winners in the second annual Administrator's Awards program, announced on Earth Day, April 22. The awards program focused on outstanding achievements in pollution prevention. Over 840 applications were received and examined by EPA's Regional Offices; 225 regional semi-finalists were reviewed by an expert panel convened by Renew America, which selected 34 finalists.

"We are delighted with the tremendous response to this year's awards program and with the high quality of pollution prevention projects which made the selection of our winners a very difficult task," noted Administrator Bill Reilly. "In fact, all of the finalists were outstanding."

Awards were given in six categories:

environmental, community, non-profit and trade organizations; large and small business; educational institutions, and federal, state, and local governments. The winners were honored in a ceremony on May 13 in Washington, D.C.

Pollution Prevention News is pleased to devote the May issue to profiles of the 17 winners of the Administrator's Awards. Congratulations to winners, finalists, and all applicants!

Pollution Prevention Awards

EPA and USDA Agree to Pursue Agricultural Pollution Prevention

EPA and the U.S. Department of Agriculture (USDA) signed a Memorandum of Agreement on April 14 to implement increased pollution prevention in the agricultural sector. The agreement puts into place a plan to address agriculturally related environmental problems.

The agreement outlines four basic strategies to achieve environmental results: (1) implementation of a nationwide pollution prevention program to minimize agriculturally related pollution and environmental risks; (2) establishment of a coordinated research, technology development, and

technology transfer system that supports production practices that protect and enhance the environment; (3) implementation of a comprehensive marketing strategy to promote voluntary pollution prevention; and (4) strengthening of the working relationship between EPA and USDA in order to provide a unified force for positive change in the area of agricultural pollution prevention.

A Task Force is charged with developing an implementation plan by October 1. For more information, contact Harry Wells, EPA, 202-260-4472, or Barbara Osgood, USDA, 202-720-0759.

Environmental and Community Organizations

Alaska Center for the Environment: Green Star Program

The Green Star Program, a collaboration of the Anchorage Chamber of Commerce, the Alaska Center for the Environment and Alaska's Department of Environmental Conservation, has kicked off a pollution prevention program that so far has reached 75 Anchorage businesses; program organizers plan to reach 800 area businesses by 1994.

Businesses and other organizations that enroll in the voluntary Green Star Program are given a booklet describing 18 energy conservation and waste reduction standards. A group must fulfill at least 12 of the 18 standards to achieve the Green Star award. The standards include conducting an annual waste reduction assessment and encour-



aging at least one other business to enroll in the program. To date, nine Alaska businesses have been awarded the Green Star award.

Other aspects of the Green Star Program include pollution prevention tips that are published in the local newspaper, offering ideas on topics such as public transportation, efficient heating and reusable office supplies. Green Star also holds monthly training workshops, each featuring a local speaker discussing topic such as energy efficient lighting and buying Alaskan products made from recycled materials.

While the Green Star Program now reaches businesses and industries, organizers plan to expand their efforts to schools, religious organizations, Native American groups and governmental agencies.

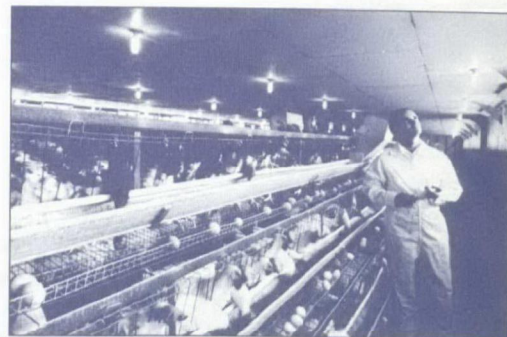
North Carolina Alternative Energy Corp: Energy Efficient Lighting for Poultry

With a lighting efficiency program introduced before EPA's Green Lights program went into effect, the North Carolina Alternative Energy Corp. (AEC) has helped North Carolina farmers save 12 million kilowatt hours per year and more than \$850,000, as well as making significant reductions in air pollution.

Through AEC's program, Energy Efficient Lighting for Poultry, North Carolina poultry farmers replaced 73,000 incandescent lamps with compact fluorescent lamps between 1986 and 1989. In field trials the project showed that compact fluorescent lamps saved electric costs while maintaining productivity. The savings yielded paybacks on the cost of compact fluorescent lamps within one or two years.

"We were fortunate to have good support from our member utilities, Carolina Power and Light and Duke Power," said Phil Bisesi, AEC senior project manager.

AEC then worked with the North Carolina State Cooperative Extension Service, which successfully sold the idea



Compact fluorescent lamps in an egg layer house.

to farmers. The Extension Service held dinner meetings, where farmers received information about the field trials and where to buy compact fluorescent lamps. The farmers also saw a videotape that included testimonials from fellow farmers who had participated in the field trials.

AEC now is funding research that indicates that farmers may actually improve poultry productivity by decreasing the amount of light used. Because light reductions also reduce the amount of heat generated, fowl mortality and the environmental problems associated with the disposal of dead birds may also be mitigated as a result of reduced lighting.

INFORM Inc:

Chemical Hazards Prevention Program

Through its reports, testimony and other outreach efforts, the nonprofit organization INFORM has been promoting source reduction to governments and industry since 1982, when it launched its Chemical Hazards Prevention Program. INFORM's efforts include a four-year investigation of 29 organic chemical plants to discover what source reduction steps actually were being taken; what impact source reduction practices had on total plant waste and what managerial, economic and regulatory factors were stimulating or impeding reduction progress. INFORM's research, *Cutting Chemical Wastes*, published in 1986, reported the specific plant-level environmental and economic benefits of preventing hazardous waste at the source.

INFORM's program provided some of the impetus for the passage of the Pollution Prevention Act of 1990, the creation of the Toxics Release Inventory, the Environmental Protection Agency's pollution prevention program, legislation and programs in at least six states, initiatives by citizens' groups in more than 12 states and growing industry dialogue with local communities. The co-sponsor of the Pollution Prevention Act, Howard Wolpe, said about INFORM's role in the legislation, "INFORM's research on the environmental and economic benefits of industrial source reduction, its input during the drafting of the bill, and its testimony at congressional hearings all helped pave the way for this victory."

Local Government

Bourne, Plymouth, and Wareham Planning Boards, Mass:

Nitrogen Overlay Protection District

Rising levels of nitrogen in Massachusetts' Buttermilk Bay and excessive algae growth in some areas had citizens of three nearby towns — Bourne, Plymouth, and Wareham — concerned about swimming and commercial and recreational shellfishing. Their determination to maintain the long-term health of the bay, which is part of the larger Buzzards Bay, led to the formation of the Buttermilk Bay Nitrogen Overlay Protection District, the first nitrogen overlay district in the nation.

The three towns worked closely with planners from the Buzzards Bay Project, which is sponsored by EPA and the Massachusetts Executive Office of Environmental Affairs, to implement zoning changes that eliminated the development of more than 400 potential homes. The zoning changes will eliminate more than 11,000 pounds of nitrogen per year.



Overlay district planners, l to r: Dave Janik, Jack Lenox, Bruce Rosinoff, Lydia Van Hine, and Donald Ellis.

To determine the amount of nitrogen that would overextend the bay, the project used "build-out" analysis, which more commonly is used to determine a community's growth potential. The analysis involves examining the carrying capacity of the community's infrastructure, such as roads and schools. By figuring the mass loading rates from all sources of nitrogen, present and future, and comparing this with the critical mass loading limit of the bay, planners were able to determine the nitrogen carrying capacity of Buttermilk Bay.

"In the long term, the only way we can protect Buzzards Bay is if all the towns affecting the bay work together," says Bourne Selectwoman Maria Oliva. "Bourne is proud to be part of such an effort."

Osage, Iowa, Municipal Utilities:

Demand Side Management Project

Osage Municipal Utilities holds the proud record of offering the first municipal energy efficiency program in the United States. With a strategy stressing involvement from all members of the Iowa community of 3,500, this gas and electric utility company pioneered many of the energy efficient measures popular today across the country that are making a major contribution to preventing air pollution.

Started in 1974, Osage Municipal Utilities' program has helped the town keep its electric load at zero growth since 1976, discounting industrial growth. Through the program, 60 percent of all homes and businesses have received energy checks with a hand-held scanner (at no cost to the customer), and water heater jackets have been installed on

most water heaters. Give-aways include low-flow shower heads, low-flow faucet aerators and compact fluorescent light bulbs. Some 96 percent of users have agreed to load management devices on their central air conditioners, and hundreds of trees have been planted in a long-term strategy designed to cut air conditioning costs.

"We have never lost our momentum, even when others said there was no longer an energy crisis," says Weston Birdsall, the force behind the Osage program. Birdsall credits the program with not only saving energy and money, but with becoming an important economic development tool for the town because industries are attracted to the lower utility rates that are available in Osage.

Sanitation Districts of Orange County:

Pollution Prevention Program

The County Sanitation Districts of Orange County have implemented a pollution prevention plan designed to reduce the quantity of toxic material discharged by industrial users of the Orange County sewage system. Under Orange County's program, all users are required to provide waste reduction plans to conserve water, investigate products substitution, provide inventory control and implement educational activities.

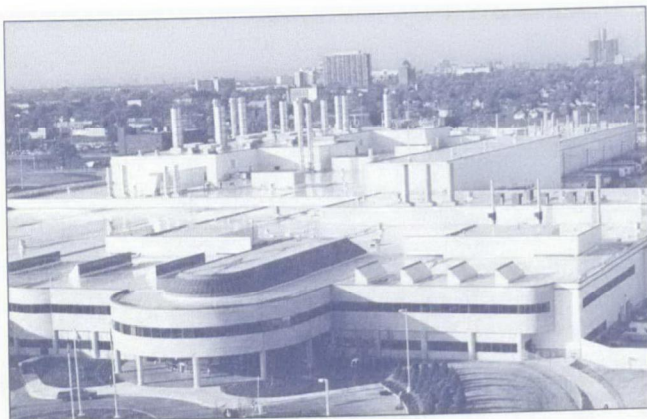
Mass emission rates (rather than concentration limits) have been promulgated for each permitted discharger. Compliance is based on the results of samples collected at each discharger's facility and average water usage. Permittees were required to install flow restrictors or control valves to assure wastewater reduction and to prevent the companies from achieving compliance by dilution.

As a result of these and other Orange County efforts, over the last five years industrial wastewater flow tributary to Orange County's system has been reduced 50 percent, and influent heavy metals have been reduced by about 50 percent. Some 95 percent of all the metal finishers and other federally regulated industries have installed flow restrictors or control valves to reduce the water usage, or have installed basic waste minimization equipment to reduce the volume of hazardous wastes and wastewater discharged to the sewage system.

Small and Large Business

Chrysler Corp:

Jefferson North Assembly Plant



The JNAP complex, located on reclaimed urban industrial land in Detroit, Michigan.

Pollution prevention is "key to Chrysler's industrial competitiveness in both domestic and international markets," says Mark Bindbeutel, pollution prevention manager for Chrysler Corp. The company saw a great opportunity to build pollution prevention strategies and technologies right into a facility when it designed and built its Jefferson North Assembly Plant (JNAP).

Among the innovations the company

incorporated into JNAP is a leak detection capability, installed for all equipment located underground such as piping, wet sumps and trenches. The design, a first in the automotive industry, virtually eliminates the potential for materials to escape into the environment, according to company officials.

Because emissions from typical vehicle

painting operations can account for as much as 90 percent of an assembly plant's environmental impact to the air, the company has concentrated on reducing volatile organic compounds (VOCs) and hazardous air pollutants at JNAP. Chrysler reformulated the majority of its paint area and equipment clean-up solvents to water-based materials. It also has incorporated a zero-VOC powder anti-chip coating and formulated its clear coat paints to exclude all

of the hazardous air pollutants listed in the Clean Air Act Amendments of 1990.

"No landfill" is a key design goal at JNAP. Some 65 percent of all parts are now shipped to JNAP in returnable containers. A sludge handling system at the plant eliminates paint sludge by producing a dry VOC-free powder. Chrysler and Haden Corp. piloted this new paint sludge handling system, which has turned 5.2 million pounds of previously landfilled wastes from one plant into 616,000 pounds of materials recycled into products such as roofing materials and sealers.

Kryptonics Inc:

Mold Release Spray System

Kryptonics Inc. of Boulder, Colorado has solved a difficult pollution problem with ingenuity and low-cost technology. The company developed a method of spraying silicone mold releases that eliminates the use of Freon ozone-depleting solvents. As a result, Kryptonics has reduced its use of CFCs from more than 40,000 pounds in 1990 to zero in 1992, all the while maintaining the quality that Freon had provided.

Before, Kryptonics used the industry standard, CFC/silicone solutions, for releasing highly polished cast polyurethane, or high-tech plastics, products from molds without sticking. In 1988, the company began to test alternative mold release systems. The process it finally discovered involves exposing the mold to a "cloud chamber" of silicone, rather than spraying silicone at a mold as was done before. Equipment based on the technology soon will be available to other firms and industries.

Totally eliminating CFCs will save the company \$100,000 in CFC costs in 1992 alone. Says Charles Demarest, president of Kryptonics, "The success of our project should excite designers, engineers, managers, regulators, lawmakers and others as an example [of how] we can reduce pollution in this country and on this planet without always having to develop new elaborate and expensive technologies."

Statler Tissue Co:

Hazardous Materials Minimization Program

Statler Tissue, an integrated secondary fiber deinking facility, has become the lowest emitter of toxic releases of any integrated tissue mill in United States due to its Pollution Prevention Program. Back in 1986, the company instituted a chemical review policy, which required that before any chemical entered the facility, it had to have a formal MSDS review and approval process. From those analyses, Statler then targeted a list of hazardous chemicals for substitution or elimination.

Since implementing the policy, the company has eliminated all chlorinated organic solvents, low flash solvents, fluorocarbon aerosol carriers and toxic solvents used as parts washers, degreasers and floor cleaners. These

include 1,1,1 trichloroethane, xylene, toluene, MEK and naphtha based cleaners. The solvents either were eliminated completely or replaced with environmentally acceptable products such as kerosene, mineral spirits and citrus based cleansers.

The company does not use new inks and dyes that contain toxic or hazardous ingredients. Release agents used on converting equipment that employed CFC and fluorocarbon carriers have been replaced with mechanical aspirators. Other pollution prevention efforts at Statler include flushing all electrical transformers and certifying them to be PCB free, and gradually replacing all instrumentation containing mercury components.

Award Winners

IBM Corporation:

Aqueous Processes Eliminating CFCs in Disk Drive Parts Cleaning

Located in San Jose, California, IBM's disk drive development and manufacturing operation for its U.S. main-frame computers was one of the world's largest users of chlorofluorocarbons (CFCs) in 1987. Five years later, IBM's use of CFCs in San Jose has been nearly eliminated and emissions have dropped by 95 percent. The achievement is the result of substituting aqueous cleaning technology for precision cleaning of disk drive parts.

To begin the process of CFC reduction, IBM's San Jose plant formed a sitewide CFC elimination task force in April 1988, which identified several dozen CFC applications at the site. The company then began implementing its CFC elimination strategy: first, phase in more efficient CFC cleaners to abate emissions; second, completely rework all of the processes using CFCs.

Results of IBM studies showed that water cleaning could be equal to or better than CFC cleaning for particulate removal from disk drive parts. IBM worked with the Atcor Co. to design, build and test a new aqueous disk drive parts cleaner.

IBM San Jose calls its CFC elimination strategy "not only an environmen-



IBM Engineer Michael Carroll uses personal computer to control flow of parts moving through a new aqueous cleaning system.

tal issue, but also a serious technology issue, since head, disk and head disk assembly processes were completely dependent on CFCs for use in cleaning and drying disk drive parts." With the strategy, the facility has prevented more than 2 million pounds of emissions, and eliminated purchases of 4.3 million pounds of CFCs in the last three years alone.

Mead Packaging:

VOC Reduction Program

More than 15 years ago, Mead Packaging, a division of the Mead Corp. that manufactures paperboard packaging for the beverage and food industries, adopted the philosophy, "eliminate the generation of Volatile Organic Compounds (VOCs) rather than attempt to control them." The company's work to put that philosophy into place made it a leader in the development of water-based inks and coating processes.

Through its VOC Reduction Program, Mead became the first company in the carton converter industry to completely switch its rotogravure presses from petroleum solvent-based inks to water-based inks. Because of its innovations, Mead Packaging has reduced its emissions of VOCs by more than 85 percent since 1975. Other printers now are experiencing similar reductions with the Mead technology.

Mead recognized early on that solvent emissions would have to be reduced to improve air quality around its packaging plants in Atlanta, Chicago, and the Los Angeles, Philadelphia and St. Louis areas. "Many said the use of water-based inks for rotogravure printing was impossible because of doctor blades used in the technology,"

(Continued on page 7)

Eastman Chemical Company:

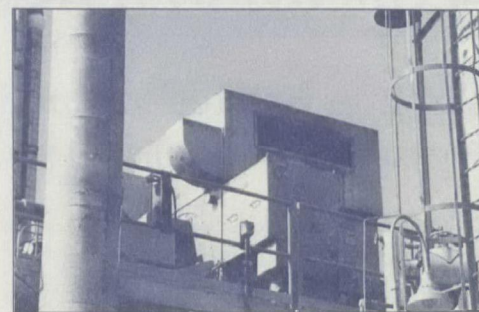
Texas Eastman Pollution Prevention

Over the last 10 years, Texas Eastman has used a variety of energy-saving techniques to produce a 40 percent reduction in the energy required to manufacture one pound of materials — roughly equal to saving 3,300 barrels per day of crude oil. Over the same period, Texas Eastman production increased by 50 percent. Located in Longview, Texas, the company is the largest employer in East Texas.

A multi-faceted, sequential approach was adopted to meet the challenge of

reducing energy consumption long-term. First, all processes were examined to better quantify energy usage and an employee awareness program was implemented. Second, engineering personnel looked for ways to implement known technology to improve efficiency. Third, more efficient process technology was purchased when it was available from outside sources.

Finally, scientists developed a new high yield process to replace an older chemical production process that was



Electric motor replacement for low-efficiency steam drive at Texas Eastman Division.

one of the largest and most energy intensive processes used. All energy and economic analyses were done on a site-wide basis, to avoid saving energy in one process only to use more elsewhere.

State Government

N.C. Dept. of Economic and Community Development, Energy Division:

Energy Management Technical Assistance Program

Workshops, on-site surveys — and participation by the operating and maintenance workers who actually run a company's equipment — are behind The Energy Management Technical Assistance Program, an initiative of the North Carolina Department of Economic and Community Development. The program assists North Carolina industry in the use of appropriate techniques and cost effective technology to save energy, increase efficiency, and reduce pollution. Projected energy savings from the workshops and the 250 surveys completed to date exceed 3,500 billion BTUs per year.

The program includes a series of workshops on topics such as steam traps, boilers and preventive maintenance. Workshops are aimed at the operating and maintenance personnel who work with the equipment on a day-to-day basis. "Without the commitment and involvement of knowledgeable people in these areas, no energy conservation measures can succeed," says W. Curtis Phillips of the NC Department of Economic and Community Development.

To ensure broad participation in the survey program, North Carolina's Energy Division pays 80 percent of the cost of the surveys, which results in a

cost to each facility of \$400 or less per survey. Surveyed facilities must send a maintenance representative to an appropriate workshop before being surveyed. This way, organizers say, at least one person at the facility is trained in energy management techniques and has an understanding of the recommendations that may result from the survey.

Iowa Department of Natural Resources:

Agricultural-Energy-Environmental Initiative

A grassroots approach to reaching the state's farmers has contributed to the success of the Iowa Consortium on Agriculture and Water Quality, a multi-organizational approach to reducing the effects of nutrients, pesticides, sediment and animal waste on surface water and groundwater quality. Because of the efforts of the Consortium, Iowa producers report widespread reductions in nitrogen use since 1985, in contrast to trends elsewhere in the region and in spite of declining fertilizer prices — and all with no decline in yields and at a cost savings for Iowa farmers.

The Iowa Consortium has focused on implementing known technologies where major improvements could be made immediately. A practical soil

nitrogen test and a plant tissue analysis for nitrogen management have been developed to help the Consortium realized its goals. The Integrated Crop Management project and other projects have provided a network of on-farm demonstration projects and consultative services to help farmers enhance their management and to profitably reduce their use of fertilizers and pesticides.

The Iowa programs have also included an intensive marketing and informational component. According to George Hallberg, supervisor of Environmental Geology for the Iowa Department of Natural Resources, success depends in part on "a recognition that altering agricultural management is a sociological process as well as a technical one."

Educational Institutions

Virginia Polytechnic and State University:

Agricultural Nonpoint Source Pollution Prevention

Progress in addressing agricultural nonpoint source pollution to the Chesapeake Bay has been advanced by the work of the Virginia Polytechnic Institute and State University's Department of Agricultural Engineering. The Department has made contributions to the state's Agricultural Nonpoint Source Pollution Control Program through several initiatives, including the development of an extensive geographic

information system database to prioritize problem areas and target limited state resources.

The Virginia Geographic Information System, developed by the department, has provided more than 4,000 mylar overlays and 100 multi-county composite maps to Soil and Water Conservation District offices to help implement the State's agricultural nonpoint source pollution control programs.

The department also has conducted comprehensive, long-term monitoring of two agricultural watersheds to evaluate the effectiveness of best management practices in minimizing off-site water quality impacts. Monitoring systems for the Owl Run and Nomini Creek watersheds will provide much-needed information on the effects of land use on the quality of water draining upland watersheds.

Federal Government

U.S. Air Force:

Fairchild Air Force Base's Comprehensive Pollution Prevention Program

Recognized in 1990 by the Pacific Northwest Hazardous Waste Advisory Council and other organizations for a successful waste reduction program, the Fairchild Air Force Base, located some 12 miles west of Spokane, Washington, is a model for comprehensive pollution prevention planning and implementation.

Some 6,600 people work at the Fairchild Air Force Base which contains all the infrastructure and workings of both an industrial complex and a small community, including a transportation network, drinking water supply system, sewage disposal, hospitals, heating/cooling systems, schools, day care centers — all in support of the main purpose of the base, the flying and maintenance of combat, combat support, and training aircraft.

Fairchild AFB has implemented pollution prevention programs in a variety of areas, relying on a different approaches such as product substitution, process change, new technologies, and solvent reduction and recycling. For example:

- A solvent recycling effort, implemented at 51 shops on base, has resulted in recapture or reuse of 95 percent of the solvents used for parts cleaning and degreasing.
- Bead blasting technology has been

widely used at Fairchild for several years in paint stripping operations, eliminating the use of methylene chloride as a paint stripping solvent. Recycling of the spent bead blasting media has resulted in complete elimination of a waste stream from this operation.

- A biodegradable, citrus based material was substituted for PD-680 (naphtha solvent) for removing difficult stains, carbon build-up, and grease from aircraft.
- Since 1989, Fairchild has implemented a freon recapture program for building maintenance activities; recapturing systems were recently installed for all vehicle maintenance on base.
- As a first step in wetlands conservation, Fairchild AFB planning staff cooperated with the U.S. Soil Conservation Service in conducting a complete inventory of all base property to identify and delineate jurisdictional wetlands.

According to Scott Whittaker, environmental coordinator at Fairchild, "The key to Fairchild's successful waste reduction programs is the support of the commanders. Without their support, a good idea is just a good idea; with it, it becomes a good program."

U.S. Navy:

Development and Implementation of Unicoat

Unicoat is a new paint developed by the the U.S. Navy Exploratory Development Program for aircraft and other industrial applications. With no toxic chromate pigments, the new paint reduces volatile organic compounds (VOCs) and hazardous waste from the painting process by 67 percent. At the same time, Unicoat provides equivalent or superior performance to the toxic paints the Navy and Air Force have used in the past.



Application of Unicoat to a Navy F-14 aircraft.

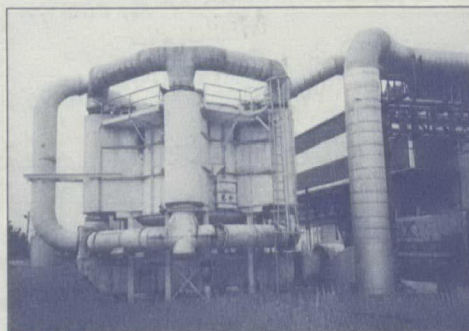
The traditional painting system for aircraft consists of an epoxy primer for adhesion and corrosion inhibition, and a polyurethane topcoat for aesthetics, durability and additional protection against degradation. This two-coat primer and topcoat paint system contains high levels of VOCs and carcinogenic chromates. Unicoat, in contrast, is a self-priming topcoat designed to replace the two coatings with a blend of organic and inorganic zinc compounds that are nontoxic.

The effort to develop Unicoat began in October 1985, as a way to both eliminate pollution and reduce the time and cost of the two-coat system. The Navy Exploratory Development Program's objective was accomplished using an in-house theoretical and statistical formulation design that included advanced polymeric binder technology with a combination of multi-functional corrosion-inhibiting pigments. Unicoat is being used in Navy and Air Force applications; efforts are underway to transfer the technology to the commercial airline and industrial communities.

Mead Packaging: VOC Reduction Program

(Continued from page 5)

the company says. To prove the experts wrong, Mead started by building on its earlier accomplishment of developing water-based inks for its flexographic presses. Water varnishes were developed and put into use in the early 1980s, and final development of water-based inks followed shortly. The final conversion of all of Mead's packaging plants to water-based inks and varnishes was made in December 1990.



Mead's incinerator, formerly used to burn off solvent vapors during ink drying, now sits idle.

Calendar

Title	Sponsor	Date/Location	Contact
Pollution Prevention and Dry Cleaning	U.S. EPA	May 27-28 Falls Church, VA	Ohad Jehassi 202-260-6911
Pollution Prevention	U.S. EPA	June 1-3 Woods Hole, MA	Dana Duxbury 508-470-3044
National IPM Forum	USDA, U.S. EPA	June 17-19 Arlington, VA	ARI 301-530-7122
Pollution Prevention Regulatory Update Course, Tech. Strategies	Government Institutes	June 24, 25 Hilton Head, SC	Terri Green 301-921-2345
U.S. Gov't. Buy Recycled Products Trade Fair	DOD, EPA, GSA, CEQ, OMB	June 29-30 Washington, DC	Nancy Stehle 703-602-2692
Future Direction of Municipal Sludge (Biosolids) Management	Water Environment Federation	July 29-30 Portland, OR	Nancy Blatt 703-684-2400
North Amer. Conf. on Industrial Recycling and Waste Exchange	Government Institutes	Sept. 9-10 Syracuse, NY	Colleen Sullivan 301-921-2345
1st Annual Conf. for Southern States on Hazardous Waste Min. Minimization & Recycling	MISSTAP, DoD, EPA Regions 4, 6, MS Dept. of Env. Quality	Sept. 22-24 Biloxi, MS	Dr. J. Carpenter 601-325-8067
	Haz. Materials Control Resources Institute	Sept. 22-24 Crystal City, VA	HMCRI 301-982-9500
Pollution Prevention Conference & Expo	R.I. Depts. of Econ. Devel., Environmental Management	Sept. 30-Oct. 1 Warwick, RI	Eileen Marino 401-277-3434

Exec. Director: National Roundtable

The National Roundtable of State Pollution Prevention Programs has begun a nationwide search for an Executive Director, responsible for managing all aspects of the day-to-day operations of the Roundtable. Qualified candidates will possess an understanding of the mission of the Roundtable, familiarity with state and local pollution prevention programs, and a proven ability to provide leadership and motivation in management setting. Send resumes of inquiries to: NRSPPP c/o WRITAR; 1313 5th Street, SE, Suite 325; Minneapolis, MN 55414-4502; (612) 379-5995.

Notices

Green Lights Workshops

Two-day workshops featuring the fundamentals of lighting technologies, computerized decision support system, project planning and management, financing options, and more. Free and open to the public; however, priority is given to Green Lights Partners. For more information, call 202-775-6650. Upcoming locations:

June 4-5, San Francisco, CA	July 9-10, Washington, DC
June 11-12, Boulder, CO	July TBA, Kansas City, MO
June 25-26, Boston, MA	August TBA, Seattle, WA

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