

## EPA STARTS ENVIRONMENTAL PHOTO PROGRAM

A new program for documenting the environmental movement in America was started last December by the Environmental Protection Agency. Called *Project Documerica*, the program will document national progress toward solutions of environmental problems.

"We are working toward a new environmental ethic in this decade which will bring profound change in how we live, and in how we provide for future generations," EPA Administrator William D. Ruckelshaus said. "It is important that we document that change so future generations will understand our successes and our failures. *Project Documerica* will record what we do as individuals and as institutions."

Initially, *Project Documerica* will concentrate on still documentary photography. As the project develops, EPA plans to include documentary motion picture techniques. The project's main objective is a collection of color photographs which will be freely available on loan to the media and the public for publication or other communications purposes.

## NEW ADSORBENT SYSTEM CONTROLS MERCURY VAPORS IN CHLOR-ALKALI PLANTS

*Monsanto Enviro-Chem Systems, Inc.*, has developed a mercury vapor air pollution control system for use in mercury cell chlorine plants.

Based on a new, proprietary adsorbent, the system has a significantly higher capacity for mercury than other known adsorbents, according to L. E. Greenwell, director, air pollution control, for *Enviro-Chem*. The adsorbent removes elemental mercury in vapor form from gas streams. Laboratory tests over the past year indicate exit concentrations of less than one part per billion by volume can be expected with efficiencies exceeding 99.99 per cent.

In discussing the new system, Mr. Greenwell said it uses a canister-type design that guarantees uniformly packed beds and simplifies handling of the adsorbent. The new system is restricted presently to gases essentially free of particulate matter, he noted.

*Enviro-Chem* earlier pioneered the effective removal of mercury mist particles with a device which removes from 90 to 99 percent of mercury particles. There are presently 20 such large-scale mist elimination systems preventing the escape of mercury particulates in industrial plants in the United States and Canada.

According to Mr. Greenwell, full utilization of operating efficiencies and economies can be achieved by using the mist eliminator in combination with the new adsorbent system in the gas stream. This method greatly reduces the amount of adsorbent required, he said.

## SOCMA ANNOUNCES AWARD FOR ENVIRONMENTAL CHEMISTRY

*The Synthetic Organic Chemical Manufacturers Association* has established a special Gold Medal award to recognize exceptional contributions in chemistry leading toward an improvement in the nation's environment.

Dr. L. W. Burnette, GAF Corp., Chairman of SOCMA's Research and Technical Programs Committee, pointed out that the chemical industry can and must play a critical role in cleaning the environment.

"I believe our industry has not only done a remarkable job in the last few years in putting its own house in order, but has also made significant contributions in assisting other industries and municipalities in developing the technology necessary to limit air and water emissions. However, we realize there is still much to be done and believe this new program will serve both to encourage and recognize contributions in this vital area," Dr. Burnette said. He continued:

"Many of the major improvements in pollution control equipment and procedures have come from research in chemistry, and we believe expanded work in this area is the only way America will develop the necessary technology to meet the continually tightening environmental standards being established by state and federal governments. We hope this new program will lend support to those firms which are already working in this important area and will encourage others to not only increase their programs in environmental chemistry, but also to share the fruits of such research with all industry."

## CARBIDE WILL BUILD TREATMENT CENTER

Union Carbide will build an \$8.5 million industrial waste treatment plant in the Houston area under a contract from the Gulf Coast Waste Disposal Authority, which will operate the publicly-owned facility. The Texas Water Quality Board has issued a permit for a primary waste treatment system scheduled for completion by July 1, 1973, with maximum discharge of 150 ppm BOD. Secondary treatment should be completed by July 1, 1976, with BOD reduction to 50 ppm.

## ENZYMES ABSOLVED OF HEALTH EFFECTS, GOVERNMENT SAYS

*Enzymes have been given a clean bill of health as cleaning agents in laundry detergents after a study by the National Academy of Sciences-National Research Council.*

The academy's report was announced by the Food and Drug Administration, which asked NAS-NRC to investigate the material last year after receiving complaints that enzymes irritated some users.

FDA Commissioner Charles C. Edwards said, however, that the academy's study "indicates the average enzyme detergent laundry product in normal use by consumers hasn't produced more primary irritation of the skin than similar products that contain no enzymes."

Under appropriate conditions, the report noted, enzymes provide an additional benefit by removing proteinaceous stains, and soil in general, from some types of fabrics.

## MCA SCHEDULES WATER SEMINARS

Two MCA seminars on water pollution control will be conducted during the next four months. Technical seminars providing intensive instruction on treatment of chemical wastes through discussion, problem solving and laboratory demonstrations will be held at Notre Dame University, Notre Dame, Ind., Feb. 7-11, and Manhattan College, New York, N.Y., April 3-7.

Courses are open to technical representatives from industry and government. Seminar costs are \$210 per session, which covers all direct expenses. Further information is available from Howard B. Brown at MCA.

## AIR STANDARDS: STILL TIME TO SPEAK UP

It may not be too late to present views on forthcoming ambient air quality standards for sulfur dioxide, particulates, carbon monoxide, petrochemical oxidants, hydrocarbons and nitrogen dioxide.

Although Jan. 31, 1972 is the deadline for implementing the standards, many states are still holding hearings at which interested parties can testify. A spokesman for the Environmental Protection Agency said "We not only welcome but need the expertise of the chemical industry in developing logical solutions to air pollution problems."

A rational approach to air pollution control has been espoused by MCA's Air Quality Committee for nearly two decades. There is still time to present this viewpoint for consideration in pending standards. At CURRENTS/PILOT deadline, North Carolina was the only state which had already concluded hearings.

## DELAWARE WINS GRANT FOR CONTROL PLAN

An \$81,000 federal grant has been awarded Delaware by the Environmental Protection Agency to help the state implement its water pollution control plan this year.

The plan's three major goals are: consolidation of waste treatment facilities into a few large regional plants to serve over 90% of the state's population; investigation of water re-use possibility from regional treatment plant effluents, and initiation of an ecological warning system to provide a clear picture of the movement of pollutants in the air, land and biological systems.

## EMPLOYEES GET ENVIRONMENTAL UPDATE

PPG Industries believes continuing personnel education is important in its environmental program as plant control activities. Therefore, the firm held a two-day symposium for 20 employees of its Fiber Glass Division with environmental control responsibilities.

Held at the University of North Carolina's School of Public Health, the symposium covered the nation's growing environmental awareness; PPG's corporate environmental policies and goals, state and federal standards and enforcement; program planning, design and operation; needs and priorities; monitoring, and laboratory demonstrations of test methods and techniques for environmental evaluation.

## EPA, CORPS ADOPT SIMILAR STANCE ON INFORMATION—FULL DISCLOSURE

*The Environmental Protection Agency has adopted final regulations under the Freedom of Information Act under which the public may obtain information from the Agency. The Agency said its policy will be to make the fullest possible disclosure of information to any person who requests it, without unjustifiable expense or delay.*

At the same time, The Army Corps of Engineers released its proposed rule on the confidentiality of information revealed in Reuse Act permits. "In no event shall information or data identifying the nature and frequency of a discharge be entitled to confidentiality," the Corps said. It did say, however, that companies can request confidentiality for research data, inventories, customer lists and production or sales figures revealed in permit applications.

EPA's final regulations are substantially the same as those previously proposed, except that the Agency will be permitted up to 30 days to search for requested documents, rather than 60 days.

Proposed procedures also were published, dealing with confidential information submitted to EPA by industry. These amendments protect bona fide trade secrets from being released to the public. Where information claimed to be a trade secret is not found by EPA to be in this category, it would be released to the public after 30 days' notice to the person submitting it.

For information other than trade secrets, the proposed amendments would provide that information could be subject to an agreement between EPA and a company to keep it confidential, but only in cases where EPA has no legal right to compel submission of the information. The amendments also make it clear that time spent by the Agency in ruling on claims of trade secrecy will be at no cost to the party requesting the information.

At Hooker:

## EXECUTIVES URGED TO SPEARHEAD CLEANUP EFFORTS

*Executives of Hooker Chemical Corp. were urged to be in the forefront of industry pollution control programs at a corporate-wide environmental workshop held recently at the firm's headquarters in Niagara Falls, N.Y.*

"You are riding the crest of a new era," group vice president John S. Coey told some 85 plant managers, business managers, environmental engineers, health and safety managers, and other key management personnel. "It is an exciting and challenging era that offers unlimited opportunities to be creative and innovative in helping our industry meet world-wide environmental goals. The old ways aren't good enough anymore. People everywhere are expecting and demanding better ways of doing things. And Hooker and its parent company, Occidental Petroleum Corp., want to be in the forefront of this environmental work."

The workshop included reports and discussions on a wide range of topics, including the new Occupational Safety and Health Act, liability, air and water pollution laws and regulations, testing of effluents, occupational exposure, toxicity, communications, accidental discharges, transportation and handling of hazardous substances, sanitary landfill operations, and process and plant design.

## ON THE STATE LINE

### California . . .

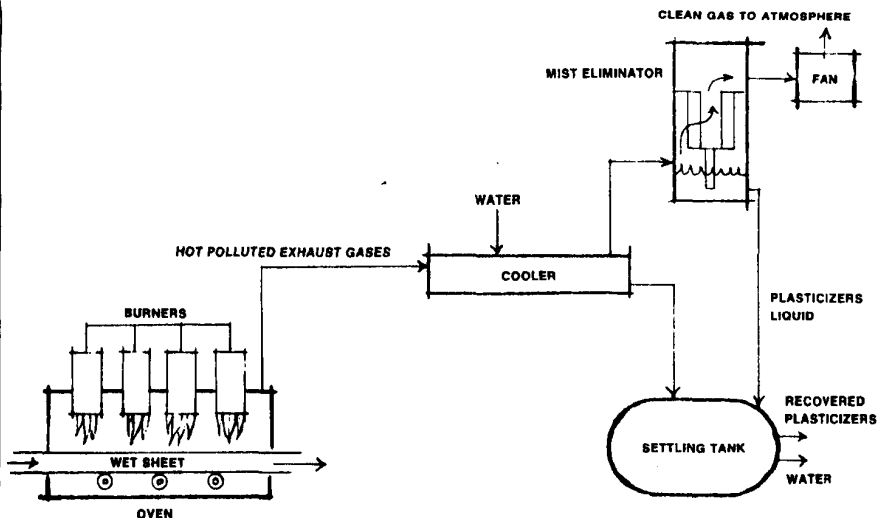
Gov. Reagan has signed into law a measure empowering the state attorney general to sue polluters and intervene on behalf of the public where there is a potential threat to the environment. The bill also requires that the attorney general be notified of such suits initiated by others.

Another new California law provides for a one-year study of mercury's effects on humans and the environment. The investigation will center on the uses and disposal of mercury and mercury compounds, occupational health protection measures and cleanup methods.

### Wisconsin . . .

A new bill recently approved by Gov. Patrick J. Lucey authorizes the state's Department of Natural Resources to require dischargers of industrial wastes, toxic and hazardous substances, or air contaminants to report the manner used and the amount discharged. Municipalities are exempt from the law.

The measure calls for an annual monitoring fee of up to \$10,000, based on the concentration and quantity of pollutants, to be paid by each discharger. A \$50 administration fee also is required. Violators could be fined up to \$10,000 for each offense.



#### Case History:

### ODOROUS EMISSION ELIMINATED; SOLVENT REUSED

(Note: This is one of a series of articles designed to add to available anti-pollution technology. Suggestions for future entries are welcomed.)

**PROBLEM:** In 1967, GAF Corp. acquired a sheet-vinyl floor covering plant in Whitehall, Pa. Flooring material in web form is coated with a clear vinyl plastisol and then cured in ovens. During diffusion of the vinyl, some of the plasticizer was drawn off and exhausted to the atmosphere—causing an objectionable odor. During certain weather conditions, exhaust vapors filled the valley around the plant with a white haze that reduced visibility.

**ACTION:** The company installed a catalytic oxidation unit in an attempt to convert the plasticizer to carbon dioxide and water. But because the system could not accomplish complete conversion, the odors persisted. After further study, GAF decided to install a system that would separate and remove the plasticizer from the exhaust air—thereby eliminating the odor and permitting recovery of materials for reuse.

Exhaust air from the oven is sent to a scrubber-condenser unit where most of the plasticizer is washed out of the gas stream and some condenses on the surface of the cooling coils. Water is routed to a tank where it settles and separates from the plasticizer. The water is continually recycled. Exhaust air leaving the scrubber-condenser contains only sub-micron plasticizer particles, which are removed in two towers containing mist eliminators. The exhaust air, now free of odors, is discharged to the atmosphere. The filters, constructed of glass fibers and stainless steel, are two feet in diameter and 10 feet in length. Twenty-four such elements are used in the two towers to help clean the 33,000 cubic-foot-per-minute gas stream.

Liquid draining from the mist eliminators and spray water from the cooler are pumped to a settling tank where the heavier water fraction sep-

arates from the plasticizer. The water is drained off periodically, and the plasticizer is returned to the supplier for reprocessing and reuse. About 80 percent of the vapor in the oven exhaust is removed in the scrubber-condenser. The mist eliminators boost total contaminant removal to 95-99 percent.

**RESULTS:** The system has effectively eliminated odors and the highly visible plumes from the plant. Complaints from neighbors, which were incessant before the controls were installed, have stopped completely. One lady called to say "I'm sure glad you finally shut that place down." She was told that the plant was still running at full production. The system cost \$363,000 and requires \$65,000 to operate annually. However, the company says the unit nearly pays for itself through the plasticizer that is salvaged. This amounts to 6.5 percent of total costs for the material.

## LIBRARY

### Air Pollution Abstracts

This periodical lists technical literature recently added to the Air Pollution Technical Information Center. Subjects include emission sources, control and measurement methods, air quality measurements, basic science and technology, effects on humans, plants and materials, economic social and legal aspects and standards and criteria. The publication is available for \$2.50 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

### Chemical Safety Data Sheet 80-97

Properties and essential information are given for the safe handling and use of diethylamine, a flammable liquid with a strong amine odor. The publication covers engineering control of hazards, employee safety, fire fighting and waste disposal of the material. The data sheet is available for 50 cents from MCA, 1825 Conn. Ave., N.W., Washington, D.C. 20009. A ten percent discount is available for 10-99 copies; twenty percent for 100 or more copies.

### Federal Controls on Occupational Exposures To Beryllium: A Rapid-Reference Compliance Guide

This leaflet condenses rules and regulations published under the Occupational Safety and Health Act to provide users of beryllium, beryllium alloys, and beryllium compounds understanding of the limits on airborne beryllium. The publication is available free from KBI Occupational Health, P. O. Box 1482, Reading, Pa. 19603.

### Wastewater Reuse

Prepared by the National Water Commission, the report evaluates the potential for wastewater reuse through reclamation of effluents from advanced wastewater treatment plants. Potential for reclamation of used municipal and industrial water are discussed in terms of direct reuse (recirculating) and indirect reuse (effluent from upstream use mixes with streamflow and is withdrawn downstream). Publication PB-201 535 is available for \$3 from National Technical Information Service, U.S. Dept. of Commerce, Springfield, Va. 22161.

### Pollution Control Companies U.S.A. 1972

Volume 1 lists 1,500 companies manufacturing or supplying products useful in air, water and noise pollution control and waste management, or which provide special services such as industrial waste disposal. The second volume lists approximately 525 consulting, engineering and analytical firms providing professional services in pollution control. The combined volumes are \$24 from Noyes Data Corp., Noyes Building, Park Ridge, N.J. 07658.

### Toward A New Environmental Ethic

A 26-page booklet describing the Environmental Protection Agency's role in dealing with air and water pollution, solid waste management, pesticides, radiation, and noise is available free from Environmental Protection Agency, Region III, Public Affairs Div., Curtis Building, 6th & Walnut Streets, Philadelphia, Pa. 19106.

### MCA: What It Is

Manufacturing Chemists Association is a non-profit trade association of United States and Canadian company members representing more than 90% of the production capacity of basic industrial chemicals within these countries. MCA is engaged in basic activities pertinent to the chemical industry, including many related to environmental health. Activities are handled by MCA's staff and by committees composed of industry specialists who serve without compensation from the association. MCA offices are at 1825 Connecticut Avenue, N.W., Washington, D.C. 20009.

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## NOTED & QUOTED

*"The main thing industry needs, besides the necessary economic incentive and driving forces, is the understanding and support of local, state and federal governments. The recovery of economic values by reclamation of waste products is not yet competitive as a national resource with the simpler processes of mining ores and cultivating crops. It is only through governmental action that waste reclamation becomes a practicality."*

Dr. Robert W. Cairns, vice president for research, Hercules Company.

*"The phosphates present in the wastewater of approximately 85% of the total population of the United States cannot be claimed to have any detrimental effect whatever on the environment into which these wastewaters are discharged. . . . For that part of the population which discharges its wastes into the ground, the phosphates are not only not a problem, but may be helpful in fertilizing the soil. . . . The introduction of the non-phosphate detergent has been truly a retrograde step. . . . The Federal action in permitting the use of phosphates again was neither unnecessary nor sudden. . . . That the action was confusing is easy to understand because the public has been led to believe that the solution of environmental problems can be simplistic."*

Dr. Daniel A. Okun, Professor of Environmental Engineering, Chapel Hill, North Carolina.

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## ENVIRO-GRAM

**RAPID WRITE-OFF** . . . of pollution control equipment can be applied for, IRS says, as soon as firm seeks EPA certification.

**ASBESTOS DUST** . . . exposure levels reduced from 12 to 5 fibers per milliliter under emergency standard used first time under Occupational Safety and Health Act.

**OCEAN DUMPING BAN** . . . on harmful material in Northeast Atlantic is proposed by 12-nation conference in Oslo, Norway. If approved, measure could become effective in first half of 1972, making it first large international marine protection agreement.

**ANTIPOLLUTION COSTS** . . . should be considered by Price Commission in ruling on industry's requests for price increases, EPA Administrator Ruckelshaus says.

**DEEP-WELL DISPOSAL** . . . of liquid wastes should be handled with caution, says Dr. Vincent E. McKelvey, Director of U.S. Geological Survey. Subsurface storage is under-utilized resource which must be carefully regulated and monitored, he says.

**DDT LIMITED** . . . by EPA to pesticides federally registered for interstate sale or export. Move is designed to prevent possible environmental damage from raw DDT shipped interstate before formulation.

**ENVIRONMENTAL CENTER** . . . to conduct multidisciplinary research on long-range problems is called for under bill passed by Senate and sent to House.

For additional details, contact Office of Environmental Quality Information, MCA.

## Rational Controls Urged

### WATER BILL'S ZERO DISCHARGE CONCEPT TERMED 'WASTEFUL'; COULD IMPACT OTHER ENVIRONMENTAL AREAS, MCA SAYS

Compliance with the severe restrictions of proposed water pollution control legislation could increase capital expenditures for the chemical industry as much as \$25 billion, according to MCA President William J. Driver.

In testimony before the House Public Works Committee, Mr. Driver said the proposed 1981 requirements of best available technology and zero discharge could raise maintenance and operating costs of control facilities "as much as \$10 billion annually."

While generally endorsing H.R. 11896, Mr. Driver emphasized that the chemical industry objects to a number of its provisions. Chief among these is the zero discharge concept without consideration of existing or needed water quality. As an example, Mr. Driver pointed out that a manufacturing facility located on the coast and discharging effluents containing salts similar to those naturally present in the ocean should not be subject to the zero discharge concept unless the salts were toxic or harmful to the marine environment.

"Failure to consider water use could have unwarranted impact upon other environmental improvement endeavors," he said. "Zero discharge or extreme effluent requirements approaching this goal which are not necessary will lead to disposal of residual materials to the land or the atmosphere. True conservation," Mr. Driver said, "must encompass the broad environmental picture rather than focus independently on single objectives."

Among specific recommendations proposed by the chemical industry spokesman was that the legislation be amended to direct the Administrator of the Environmental Protection Agency to consider the water quality of a receiving stream and the water's intended uses when establishing effluent limitations. Mr. Driver said the Administrator also should be directed to weigh social and economic benefits of these regulations in relation to cost.

He also urged that cost be considered in relation to social and economic benefits when the EPA Administrator is establishing standards of performance for new sources and that he should not "dictate the use of specific processes or particular methods of control" in arriving at these limits.

Emphasizing that the chemical industry offers its full cooperation in bringing about a rational solution to water pollution control, Mr. Driver cautioned that prohibition of discharges pursued without regard to resulting water quality would be "scientifically invalid" and "extravagantly wasteful."

## OCEAN DUMPING MEASURE BEFORE HOUSE-SENATE CONFEREES

House-Senate conferees will work out final provisions of an ocean dumping bill passed by the Senate late last year. The House approved a similar measure earlier. Major differences include:

- A dumping permit system would be administered by EPA under the Senate bill and by the Corps of Engineers in the House version.

- The regulation of dumping in waters over which the U.S. has jurisdiction in the House bill and the regulation of dumping in waters beyond the U.S. territorial limits, as provided in the Senate bill.

The Senate bill would prohibit dumping in waters beyond the territorial jurisdiction of the U.S. of radiological, chemical, or biological warfare agents and high-level radioactive wastes. The Senate measure would also allow states to retain control of dumping within their three-mile limit if the regulations meet minimum federal requirements.

## SO<sub>2</sub>, NO, PARTICULATE STANDARDS SET FOR ACID PLANTS, INCINERATORS, GENERATORS

*Final emission standards for sulfuric and nitric acid plants, steam generators and incinerators set by the Environmental Protection Agency are essentially the same as those originally proposed.*

The standards apply to new plants or to existing ones modified to increase or alter emissions of particulate matter, sulfur dioxide, nitrogen oxides and sulfuric acid mist. Regulations apply to facilities whose construction or modification began after Aug. 17, 1971, when the regulations were initially proposed. Final standards are:

### NITRIC ACID PLANTS

Nitrogen Oxides—3.0 lbs per ton of acid produced (maximum 2-hour average). Visible emissions shall not exceed 10% opacity.

### SULFURIC ACID PLANTS

(a) Sulfur Dioxide—4.0 lbs per ton of acid produced (maximum 2-hour average).  
(b) Acid Mist—0.15 lbs per ton of acid produced (maximum 2-hour average). Visible emissions shall not exceed 10% opacity.

### STEAM GENERATORS (over 250 million Btu per hour heat input)

(a) Particulate Matter—0.10 lbs per million Btu heat input (maximum 2-hour average). Visible emissions shall not exceed 20% opacity, except for 2 minutes in any one hour emissions may be as great as 40% opacity.

(b) Sulfur Dioxide (maximum 2-hour average)—(1) 0.80 lbs per million Btu heat input when oil is fired. (2) 1.2 lbs per million Btu heat input when coal is fired.

(c) Nitrogen Oxides (maximum 2-hour average)—(1) 0.20 lbs per million Btu heat input when gas is fired. (2) 0.30 lbs per million Btu heat input when oil is fired. (3) 0.70 lbs per million Btu heat input when coal is fired.

### INCINERATORS (over 50 tons per day charging rate)

Particulate Matter—0.080 grains per standard cubic foot corrected to 12% CO<sub>2</sub> (maximum 2-hour average)

## WHAT OTHERS ARE DOING

### Utilities . . .

Arizona Public Service Co. will install a combination flyash and sulfur oxide removal system at its Joseph City, Ariz., generating plant. The system, built by Research-Cottrell, will include two flooded disk wet scrubbers for flyash emission control, absorption towers for SO<sub>2</sub> and SO<sub>3</sub> removal, water treatment clarifiers and auxiliary components. The unit will be the first commercial installation using limestone as a reagent for SO<sub>2</sub> removal.

Commonwealth Edison Co., Chicago, will have spent some \$293 million on air and water pollution control by the end of 1975, according to Chairman J. Harris Ward. The firm has spent \$109 million on projects to date. It plans another \$184 million in improvements through 1975. Included: overall upgrading of electrostatic precipitators at coal-fired generating stations, equipment to further reduce nuclear plant emissions, installation of demonstration sulfur dioxide-removal systems and various water pollution control projects.

### Petroleum . . .

West Coast oil companies have developed five regional organizations to handle emergency oil spills. The groups, formed recently, will combine capabilities of companies within given areas and share the heavy costs of keeping standby equipment ready for potential major spills.

One group has incorporated at San Francisco and Santa Barbara. Three cooperatives are in the Los Angeles-San Diego area and at Portland, Ore. and Seattle, Wash. In addition, cooperatives are at Anchorage, Alaska, and Honolulu.

The informal coordinator for the effort is Western Oil & Gas Assn., Los Angeles. The association says that in the event of an accident, the company responsible for the spill will direct cleanup operations. If a spill is unidentified, member companies will work at the direction of the U.S. Coast Guard.

### Pulp and Paper . . .

The Environmental Protection Agency has publicly commended St. Regis Paper Co. for "putting forth extra effort in what was admittedly a stringent directive designed to clean up pollution" of Perdido Bay near Pensacola, Fla. St. Regis Cantonment, Fla., mill received a "cut pollution or cut production" order last February. The firm met EPA's deadline in curbing its daily untreated wastewater from 78,000 to 51,000 pounds BOD by June 1, and installed new treatment equipment to reduce BOD overall by 90 percent.

## DOW GIVES \$20,000 TO IMPROVE TITTABAWASSEE

Dow Chemical has contributed \$20,000 to the Michigan Department of Natural Resources for improving the Tittabawassee River Basin as a sport fishery.

In a letter to Dr. Ralph A. MacMullen, director of the Department of Natural Resources, Dow said the \$20,000 is intended "for the most appropriate use by your department in the long-term realization of our mutual interest in developing this river basin as a sport fishery."

Harold Boscher, Midland Division general manager, said "there has been continuing improvement in the quality of the Tittabawassee River" and that the company "is committed to substantial additional improvement" with large capital expenditures that include \$7.2 million for reducing the Midland plant's discharge of heat to the river.

Recently Dow was fined \$500 following a July 27 pollution incident in the Tittabawassee River. The overflow of a caustic evaporator killed 2,000 to 3,000 fish, approximately half of which were game species. Dow has asked the Department of Natural Resources for permission to restock the river with 3,000 game fish.

## NAS GETS EPA CONTRACT FOR AIR CRITERIA STUDY

*Among contracts of interest to Currents/Pilot readers:*

• EPA has awarded a \$229,000 contract to National Academy of Sciences for preparation of state-of-the-art reports related to air quality criteria documents on specified atmospheric pollutants and to interim air pollution control recommendations.

• At the same time, EPA awarded a \$152,000 contract to Research Triangle Institute, N.C. for a thorough study of specified air pollution sources to assist the economic impact of air quality standards.

• EPA also awarded a \$40,000 contract to York Research Corp., Stamford, Conn., to measure and test emissions from Union Carbide's Alloy, W. Va. plant and Union Electric Co. plant at Labadie, Mo. Another \$5,000 was awarded for analyses of coal and fuel oil samples in support of emissions tests.

• EPA has awarded \$227,620 to Georgia-Pacific Corp., Bellingham, Wash., for a study of mercury recovery from sediments and sludges.

## STUDENTS DEVELOP PLANS TO TURN POLLUTANTS INTO RESOURCES

*Students at several universities are turning general concern about the problems of pollution into concentrated study toward some solutions. Their opportunity came from small financial grants made by Chemetron Corp., Chicago. The students have responded by producing a considerable amount of thought-provoking material.*

The studies focused specifically on recycling waste materials to reduce pollution and provide additional raw materials. Students were stimulated in developing the guidelines for their projects by counselors from Chemetron and the American Medical Association. Studies were conducted at Augustana College, Rock Island, Ill.; University of Rhode Island, Kingston, and the University of California at Davis.

"We felt students would apply enthusiastic energy to studying the concept of recycling pollutants," said John P. Gallagher, Chemetron president. "They have been voicing their concern about relationships they believe are being misjudged or ignored, such as transportation vs. clean air, and physical possessions vs. quality of life."

In carrying out programs, the schools combined specific projects with broad, fundamental approaches to the question of recycling. One study centered on the ethics of environmental exploitation while another explored the problem of communications and achieving mutual understanding in defining pollution problems and seeking remedies.

Another program included research to plan an optimum industrial park where a company's waste would be another's input. Yet another group investigated the recycling possibilities for trash and used motor oil.

The studies at the various schools led to several general conclusions, Mr. Gallagher said.

"The students are stressing the importance of treating all matter and energy as potentially valuable, regardless of its form," the Chemetron president said. "They believe that nothing is disposable, making pollutant resources. Destroying pollutants would be destroying raw materials." They also recommended controlling the urge to find quick solutions and the need to go beyond the thinking level of avoiding pollution penalties and reducing environmental insult, the studies revealed.

"They suggest organizing the problems in a comprehensive way, rather than taking narrow, specialized approaches," Mr. Gallagher explained.

For example, Augustana College students described the ideal industrial park as one where companies were selected by a zoning board on the basis of compatibility in terms of making maximum use of effluent. A match-up might include certain food and fertilizer companies, or a paper

mill with chemical companies turning the "sulfide liquor" effluent into useful products.

They recommended using a computer to determine the most compatible matches. Effluent would be made available to various companies through dispersible loops. Each company would have in and out taps on each loop. One loop would carry soluble effluent, the other solid wastes. Each company would be responsible for removing toxic substances beforehand and possibly for degrading the effluent one further step in a primary breakdown unit.

Water would circulate through the industrial park in two grades—one for personal consumption, the other for heavy industry. Recovered water would be recirculated.

In separate projects, students at the University of Rhode Island studied various aspects of developing systems to recycle motor oil and trash. The projects were conducted in a business-oriented fashion with a board of directors guiding the work and a student activist group stimulating the effort. One result was the establishment of a regular credit course at the school, called Recycle.

The students looking into a system for recycling motor oil studied all phases—how to market recycled oil, business economics involved, best ways to filter impurities, remove additives and metal particles, how to grow micro-organisms on the waste oil to enable cleanup of oil spills, and possible conversion to cattle feed.

They feel they learned enough to recommend performing reprocessing on a laboratory scale, set up a small pilot plant with continuous product run, make a more detailed cost estimate, and present compiled data to the American Petroleum Institute.

A second group of Rhode Island students developed a machine capable of separating components of municipal trash, some of which could be used to develop fertilizer and animal feed.

At the University of California, students worked on a seminar basis to study solid waste. Their report included a description of the problem, nature of different wastes, existing applicable technology and associated problems, social and political factors, economic factors and steps necessary to implement an integrated recycling industry.



Effluents would be turned into useful products in the ideal industrial park being planned by Augustana College students and their instructor.



A trash separator developed by students at the University of Rhode Island is examined by a faculty advisor. The prototype is capable of separating components of municipal trash, some of which could be used in fertilizer and animal feed.

## HEARINGS SET FOR MERCURY, BERYLLIUM, ASBESTOS

Public hearings on proposed emission standards for asbestos, beryllium, and mercury will be held in three cities early in 1972. The Environmental Protection Agency's hearing schedule is:

Jan. 18—New York City: beginning at 10:00 a.m. in Courtroom #2, Room 461, 1 Federal Plaza.

Feb. 1—Kansas City: beginning at 10:00 a.m. in Room 214, The Midtown Building, 1735 Baltimore St.

Feb. 15—Los Angeles: beginning at 10:00 a.m. in Room 1501, U.S. Courthouse, 312 N. Spring St.

Persons wishing to make a statement are to file a notice of intent at least 15 days before the hearing date, and submit five copies of their statement at least 10 days in advance. Notices and statements should be addressed to the Administrator of the Environmental Protection Agency, Attention: Presiding Officer, Hazardous Emission Standards Hearing, Room 17-70, 5600 Fishers Lane, Rockville, Md. 20852.

## EASTIN IS EPA CONSULTANT FOR INDUSTRIAL AFFAIRS

Maurice R. Eastin, former president of Esterline Corp. of New York City, has been named EPA's consultant for industrial affairs.

In announcing the appointment, EPA Administrator William D. Ruckelshaus said, "Mr. Eastin will serve the important function of explaining our agency's role and programs to industry. He will also give our agency a better appreciation and understanding of the problems that industry encounters in the environmental field." Eastin will report directly to the Administrator.

## NORDIC COUNTRIES TO STUDY HEAVY METALS

A cooperative scientific and technical research group from Nordic countries plans a joint study of environmental damage caused by heavy metals. The group, called Nordforsk, has added vanadium to its list of metals deserving close attention. Others to be studied include arsenic, cadmium, copper, lead, mercury and zinc.

Nordforsk scientists say vanadium pollution is believed caused largely by burning oil from Venezuela and the Middle East, and they feel the metal might become a "major poison threat."

Curbs Continued

## MONSANTO RELEASES PCB FIGURES; DESCRIBES CUTBACK, CONTROL PROGRAM

The Monsanto Company has released figures on the production and sale of polychlorinated biphenyls (PCB) from 1960 through estimated 1971 to provide insight on the material's impact on the environment.

Closed-system electrical uses ranged from 11,000 tons per year to 20,000 tons per year during the period, according to figures released to the U.S. Department of Commerce.

The report also shows Monsanto voluntarily reduced its nonelectrical sales of PCB from the high of 16,000 tons in 1970 to 4,400 tons in 1971. Further substantial reductions will be accomplished in 1972, the company said.

Monsanto is the only American manufacturer of PCB. The material, which is persistent, is used predominantly in closed systems. Some of this, however, has escaped accidentally to the environment.

C. P. Cunningham, managing director of Monsanto Industrial Chemicals Co., an operating unit of Monsanto, said: "As part of our control program, the data were originally prepared for the Federal PCB Joint Task Force and other concerned scientists for use on a confidential basis so scientists can properly evaluate the . . . impact on the environment."

Monsanto released the figures publicly "because scientists have continued to express a need for the data to make a proper estimate of how much PCB might be in the environment. We also believe the figures will inform the public about Monsanto's positive actions to limit the sale of PCB to confined applications," the company executive said.

"Now that the figures are public information," Mr. Cunningham added, "we are confident both the scientific community and the public press will interpret the data properly. These are production and sales figures only. It should be clearly understood that all this material is not in the environment."

"For example," Mr. Cunningham said, "over 60 per cent of all sales in the past 12 years have been for closed-system electrical uses. It would be a completely false and irresponsible conclusion to say all PCB produced is in the environment. Much of the material is still contained in sealed electrical equipment where it acts as a fire-resistant safety fluid, protecting human lives and property from the danger of fire and explosion."

"Monsanto continues its program to control the uses and prevent the release of PCB into the environment," Mr. Cunningham added. "To date, we have cut off all sales to paints, plasticizers, sealants, adhesives and all other open-system uses. We are receiving used PCB from customers for regeneration or safe disposal. And we are engaged in an all-out research effort to develop less persistent forms of PCB or suitable products which retain the fire safety features of PCB. We call on other producers, worldwide, to join in this effort."

PRODUCTION AND SALES—POLYCHLORINATED BIPHENYLS (PCB)  
MONSANTO INDUSTRIAL CHEMICALS COMPANY (SHORT TONS)

| YEAR       | U.S.<br>PRODUCTION | DOMESTIC SALES                               |                        |          | U.S.<br>EXPORT<br>SALES<br>All Uses |
|------------|--------------------|----------------------------------------------|------------------------|----------|-------------------------------------|
|            |                    | Electrical*<br>Insulating<br>Liquids<br>Uses | All**<br>Other<br>Uses | All Uses |                                     |
| 1971 (Est) | 20236              | 14417                                        | 4401                   | 4938     |                                     |
| 1970       | 42527              | 20209                                        | 16263                  | 8928     |                                     |
| 1969       | 38194              | 18584                                        | 15034                  | 5312     |                                     |
| 1968       | 41427              | 20586                                        | 11980                  | 5616     |                                     |
| 1967       | 37655              | 20397                                        | 10846                  | 4062     |                                     |
| 1966       | 32025              | 18897                                        | 10642                  | 3420     |                                     |
| 1965       | 30240              | 15293                                        | 8695                   | 2117     |                                     |
| 1964       | 25417              | 13769                                        | 8686                   | 2040     |                                     |
| 1963       | 22367              | 11448                                        | 7618                   | 1824     |                                     |
| 1962       | 20968              | 11685                                        | 7339                   | 1809     |                                     |
| 1961       | 20333              | 11108                                        | 7801                   | 2076     |                                     |
| 1960       | 20786              | 12444                                        | 5163                   | 1627     |                                     |

\*Closed Systems—Transformers and Capacitors.

\*\*Including Heat-transfer Systems, Hydraulics/Lubricants, Plasticizers.