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EPA Mobilizes to Cope With Flood

Last month's disastrous floods, dumped by Hurricane Agnes on the northeast and middle Atlantic states, meant 16-hour days and 7-day weeks for EPA people in Region II (New York) and Region III (Philadelphia).

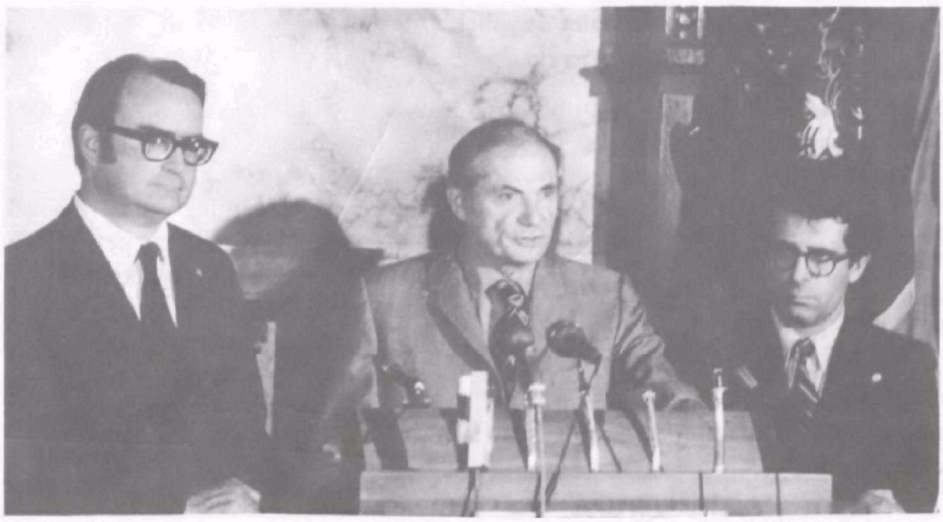
Before the flood waters had begun to subside, sanitary engineers, water hygiene experts and specialists in oil spill cleanup fanned out into the stricken areas.

Under the coordination of the Office of Emergency Preparedness, EPA teams worked with local and state officials, the Defense Department, Coast Guard, Corps of Engineers and many other Federal agencies to safeguard health, restore public services, assess damages, and organize cleanup efforts.

The task was far from finished at press time; indeed, it will be months before services are fully restored and living conditions are back to normal in the stricken areas.

The hardest hit was Region III, which includes Pennsylvania, Virginia, and Maryland. Before the flood waters crested in Pennsylvania, they had brought death and destruction in the southern tier counties of western New York.

Environmental damages from a flood seem less terrifying than the immediate loss of life and property, but they are potentially more dangerous and destructive.



In Harrisburg after tour of the flooded area, Administrator Ruckelshaus, left, Pennsylvania Gov. Milton Shapp, and Region III Administrator Edward W. Furia Jr. answer questions from newspaper, radio, and TV reporters.

Water Supply Goes First

After the devastating loss of life and possessions, the first aftermath casualty is the public water supply. The floods breeched dams and contaminated reservoirs, wrecked pumping and treatment stations.

About 80 water supply systems were put out of operation on the Susquehanna River alone, according to Region III officials. A dozen specialists from the New York office, dispatched to the upstate flood areas found that their first task was to get pressure restored to water supply systems in Cortland, Elmira, and other municipalities in the area.

Three mobile water purity testing units were deployed in Pennsylvania, and a fourth one – weighing 12 tons – was flown by the Air Force from Cincinnati to Wilkes-Barre with a three-man team of technicians. They processed as many as 220 biological test samples per 16-hour day, more than twice the normal rate, to help get drinking-water supplies back in operation.

In the Charlottesville, Va., regional EPA laboratory, engineers and technicians worked all day Sunday in foot-deep water from the Rivanna River, processing water samples that had been brought from Richmond and other flooded communities downstream on the James River. Fortunately, the Rivanna waters never rose as high as the lab's electrical switchboxes.

Restoring Sewage Systems

The second aftermath casualty is the sewage system. Lagoons and settling tanks are usually on low land in the flood path. Sewers are vastly overloaded; power is interrupted,

Four truck-mounted water laboratories like this one were deployed in Pennsylvania to assure pure water supplies. One was flown in by the Air Force.

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pumping stations shorted out, or both, and raw sewage pours into the flood waters.

Along the Susquehanna, more than 150 sewage treatment plants were knocked out. In the village of Horseheads, N.Y., OEP's temporary headquarters for Region II's Federal flood teams, EPA specialists helped specify and expedite contracts for sewer repairs.

Oil and Hazardous Materials Spills

The spilling of gasoline, oil, and other hazardous substances is the third environmental effect of a flood. If storage tanks are not ruptured by the flood itself or by floating debris, they empty automatically when the water level reaches their vents.

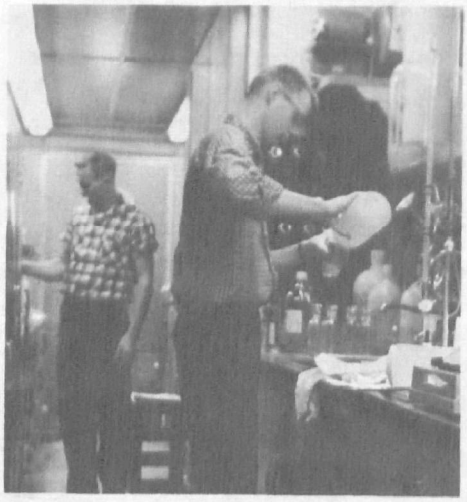
The Schuylkill River from Reading, Pa., to the Delaware and out past the Delaware Memorial Bridge was "one continuous spill," said a Region III spokesman. On the Susquehanna, EPA engineers helped design and build booms to keep the oil slicks away from critical areas. One such boom was constructed on Darby Creek, just southeast of Philadelphia, to try to protect the newly-established Tinicum Wildlife Preserve, the last natural tidal marsh in Pennsylvania.

The hamlet of Pig Flats, west of Elmira, N.Y., had to be evacuated for several days when more than three million gallons of gasoline and fuel oil spilled from damaged storage tanks. EPA specialists helped assess the hazard and determine when the oil company's vacuuming and removal efforts were sufficient to permit the evacuees to return to their homes.

Cleaning Up and Paying the Bills

Last in priority, though not importance, are the tasks of cleaning up after the flood and determining how to meet the costs. EPA's technical assistance after the Agnes disaster included both.

The disposal of silt and debris, often soaked with oil or hazardous materials, was a universal problem as the floods subsided. What could be burned and how, what could be buried and where, were questions that taxed local officials and required expert advice.



All kinds of chemical and biological tests of water quality can be performed in EPA's mobile labs.

Likewise the assessment of damages was a complex, technical matter. EPA engineers are required by law to certify the damages so that localities can qualify for Federal disaster aid funds, and so that contracts for repair and restoration work are technically adequate and economically reasonable.

While the flood waters were still rising, EPA regional staffs throughout the country had been put on standby alert to send additional men to the stricken regions as needed. Only Region III required such help, using seven from Atlanta in Region IV, three from the Cincinnati National Environmental Research Center, and six from Region V headquarters in Chicago.

South Dakota Flood

Less than two weeks before Hurricane Agnes, floods at Rapid City, S.D., had called forth similar efforts from EPA's Region VIII office in Denver. Regional Administrator John A. Green, notified of the emergency on June 10, had two men in Rapid City the next day, a Sunday.

The city's water system was damaged and inoperative for several days. EPA water hygiene engineers assisted the National Guard and city officials in supplying potable water by truck until the system was repaired.

Five EPA people worked in Rapid City and nearby communities for about a week, surveying damages to eight water systems and seven sewer systems, with losses estimated at more than $1 million.

They also advised on debris disposal, the selection and operation of disposal sites, and set up a pesticide program to control disease vectors.

Their oddest problem, Green reported, was how to get rid of 60 tons of molasses, stored in a tank at a cattle feed firm and believed to be contaminated by the flood waters. They recommended burying the molasses.

Schuylkill Valley's King-Size Cleanup Problems: Six Million Gallons of Dirty Crankcase Oil

The enormity of the environmental cleanup problem that followed the flood was illustrated by a gigantic spill of dirty crankcase oil in Pennsylvania's Schuylkill River valley.

More than six million gallons of the black stuff, stored in two lagoons near Pottstown, were washed out by the flood waters. It coated the river banks, trees, houses, and other buildings for about 30 miles down river.

The full extent of the damage was not realized until several days after the flood had subsided, when residents saw the dark, foul-smelling coating everywhere at the high water mark. Pennsylvania Governor Milton Shapp called the spill unprecedented, "the greatest on-land oil spill in history."

Administrator William D. Ruckelshaus visited the scene June 30, at President Nixon's request, to inspect the cleanup work by local, state and Federal teams.

"We are doing all we can, as fast as humanly possible," he told a press conference at Harrisburg, pledging "whatever commitment (by the Federal government) is necessary to insure that the human and environmental difficulties are alleviated."

William Ruckelshaus, in boots and life jacket, climbs oily bank of the Schuylkill River after inspection trip.

He said no one knows how much the cleanup will finally cost, but the experience gained in the Schuylkill Valley would be valuable in forestalling such spills in the future and in mitigating their effects.

First concern was keeping the oil from water supply intakes by means of booms and hastily-rigged filters. Cleanup methods included:

- Sucking up pools of oil for burial at special sites;
- Using straw and other absorbent materials to pick up the oil; and
- Scraping off the top layer of oil-soaked earth with bulldozers.

All these methods have advantages and drawbacks, Ruckelshaus said, and the disaster area actually had become a testing ground.

He estimated it would take "in the neighborhood of $100 million" to restore the damaged sewage treatment plants. Every available contractor and every piece of equipment in the area was hired to work on the cleanup, and 272 disposal sites were selected and were being used, he said.

Ironically, the spilled oil had been collected by a private company for recycling, an objective that EPA is trying to encourage.

Compounding the irony was the fact that the oil recycling firm had gone out of business and filed for bankruptcy.

There was no legal violation in storing the oil in open lagoons, Ruckelshaus said, although it proved to be an unwise "land-use decision."

SYMPOSIUM SET ON ENVIRONMENTAL INFORMATION

A three-day symposium on the production, use, and dissemination of information on the environment will be held in Cincinnati Sept. 24-27.

EPA's Research Center will be host to the meeting; sessions and workshops will be held in the city's new Convention Center.

The symposium is designed to help citizens' organizations, universities, libraries, professional and trade groups, and governmental bodies improve their information resources and handling methods.

Interested individuals should contact Gilbert M. Gigliotti, director of public affairs at the National Environmental Research Center, Cincinnati, Ohio, 45268, telephone (513) 871-1820.

$28-Million Research Center Gets Under Way

EPA's long-awaited $28-million centralized environmental research facility in Cincinnati, Ohio, was officially launched last month with the help of Julie Nixon Eisenhower, the President's daughter, and Administrator William D. Ruckelshaus.

Rain drove the ceremony indoors, and there was no groundbreaking at the recently cleared downtown site near the University of Cincinnati campus. Instead, in the university auditorium, Cincinnati Mayor Thomas A. Luken formally handed over title and deed to the property, and Ruckelshaus accepted it on behalf of the Federal Government.

The land had been acquired and cleared by the city over a period of years, the last parcel in March. Funds for the project have been allocated. The first construction contract is expected to be awarded, and work begun this fall. The building is to be ready for occupancy in the summer of 1975.

–Cincinnati Enquirer Photo

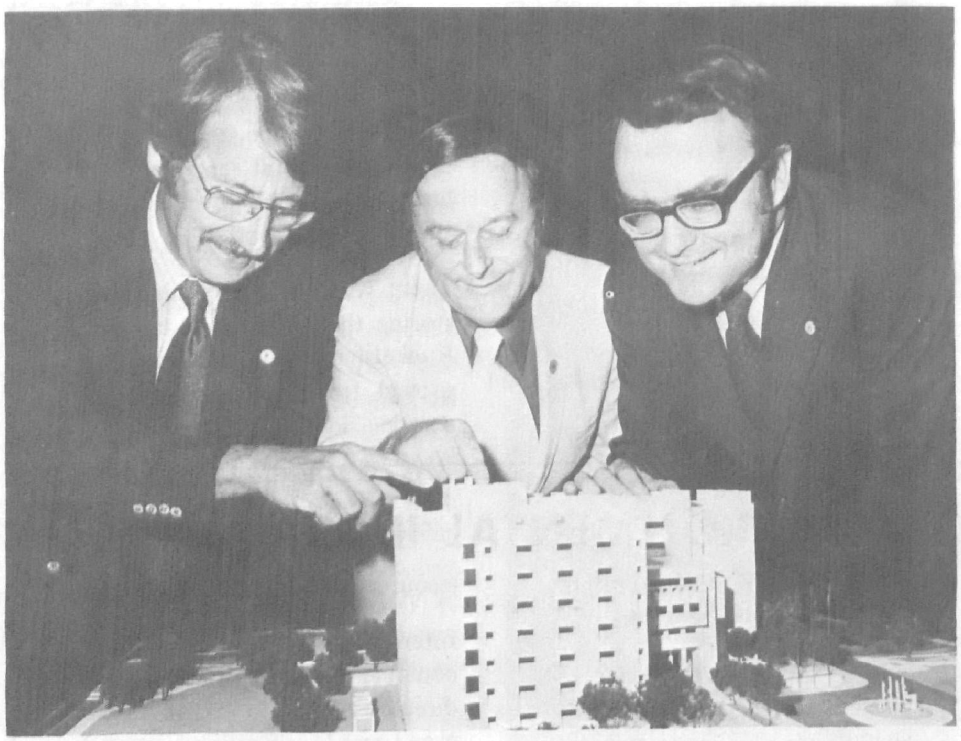
Julie Nixon Eisenhower gives autographs and chats with EPA personnel and the public after taking part in the deed transfer ceremony in Cincinnati June 28.

The new center, Ruckelshaus said, "will pull together all our research activity in the Cincinnati area into one efficient complex of laboratories." The city is the headquarters for one of EPA's National Environmental Research Centers (NERC), employing some 300 scientific and management personnel in 11 facilities in and near the city and supervising about 140 professional people in satellite and pilot laboratories elsewhere in Ohio, in West Virginia, New Jersey, Alabama, Rhode Island and Washington.

The Cincinnati NERC deals with environmental engineering, municipal waste treatment technology, solid waste research management, analytical water quality control, water supply technology, radiation effects, and environmental toxicology research.

"This fiscal year EPA is budgeting about $160 million for research and monitoring," said Ruckelshaus. "About 40 percent of this goes for work in our own laboratories.

"The facility we are starting here will be a vital component of the endless search for new knowledge that can be put to practical use for the benefit of mankind."



–Cincinnati Enquirer photo

Left to right: Dr. Stanley M. Greenfield, head of EPA research and monitoring; Dr. Andrew W. Breidenbach, director of the Cincinnati Center, and Administrator William D. Ruckelshaus inspect a model of the new laboratory.

Local Agencies Using Central Computer To Help Solve Water Quality Problems

A giant computer facility in McLean, Va., a few miles west of Washington, D. C., is now being used by State and local water quality control agencies throughout the country to help solve such problems as:

- Defining the causes and effects of water pollution;
- Measuring compliance with water quality standards;
- Checking the status of waste treatment plant needs, grants, and implementations; and
- Determining pollution trends.

More than 60 users from California to Massachusetts are tied into the STORET (for STOrage and RETrieval) system, and the Office of Water Programs says there is room for many more.

The only cost to the user is for rental of a "low speed terminal," a kind of typewriter, which is linked to STORET by telephone.

Cost of computer time, data storage, and processing is paid by EPA. Experts from the Office of Water Programs are available to teach each user how to feed his information into the computer and to order the processing he wants.

It is not necessary for the user to be a computer programmer. The programs – or instructions to the computer – are already written in computer language for a wide variety of technical and management problems in water quality control. The user merely selects the instructions that fit his needs and the type of printout he wants: tabular, graphic, or even digital plots on maps.

STORET's memory system is available to all users, providing a much larger data base than can be gathered by any one state or local agency. It contains, for instance, data on water quality from more than 70,000 sampling stations throughout the country over periods as long as 20 years. These can be retrieved in statistical form – means, extreme values, deviations, etc., as desired – for any locations, watersheds, or individual streams. Federal and regional water quality standards are stored, and constantly updated, for comparison with sampling data.

Any state or local water pollution control group can tie into the STORET computer facility through a telephone-linked terminal like this one being used by Clare Tieder and Edward Biernacki at the Office of Water Programs.

Records of municipal and industrial waste discharges and fish kills are also stored in STORET, along with management information on pollution abatement needs, costs, and implementation schedules.

All these data are constantly being updated as OWP and cooperating states and localities use STORET and add new information.

The data are protected from loss, and if a user wishes to restrict his data from the common store, he may do so.

For more information on STORET, potential users may get in touch with the Water Program people in EPA's regional offices or contact the Technical Data and Information Division, Office of Water Programs, EPA, Washington, D.C. 20460, telephone (703) 557-1582.

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Eleven Artists Commissioned To Paint on Environmental Themes

Eleven American artists have been commissioned to paint on environmental themes for EPA, in a first step toward assembling an EPA art collection that will be exhibited in Washington and probably tour other cities of the country.

The project was started last fall in response to President Nixon's suggestion that all Federal agencies consider how their programs could encourage, and benefit from, the arts.

Dr. Lester Cooke, curator of painting at the National Gallery of Art, is consultant for the project. He selected the well-known artists, representing a variety of styles, who were invited by Administrator William D. Ruckelshaus to participate. Each artist will receive a token payment of $1,500 to cover his or her expenses.

Two paintings have already been received: "Clearing Skies" by Lowell Nesbitt of New York and "Gross National Product" by Billy Marrow Jackson of Champaign, Ill.

Works are promised from: Mario Cooper, New York; Lamar Dodd, Athens, Ga.; Mitchell Jamieson, College Park, Md.; Dong Kingman, New York; Alfred McAdams, Washington, D.C.; Dale Meyers, New York; Henry C. Pitz, Philadelphia; Paul Sample, Norwich, Vt.; and William Thon, Port Clyde, Me.

These 11 works, for the fiscal year just ended, are expected to be augmented by further commissions during 1972-73 and succeeding years, as budgets permit. Dr. Cooke will recommend the artists to be invited.

No strings are attached to the subject or method of each work, except that it be somehow related to the artist's "vision of a better environment," said Ruckelshaus. "We want to share this vision . . . with the public. Artists can create the visions of the environment we must achieve in this

decade. Artists can also look at present environmental problems and how we are working to solve them, and present them with new insight.

"We believe that an influential segment of the public will respond to painting more than any other media, and we hope that our arts program will contribute to the public understanding of what we must do together to save the earth."

CONFERENCE TO DISCUSS HAZARDS OF MICROWAVES

The environmental hazards of nonionizing radiation (microwaves) will be the subject of a special session of the American Public Health Association's annual meeting in Atlantic City, N.J., Nov. 14. Dr. William A. Mills of EPA's Office of Radiation Programs heads the program committee and will preside. EPA's Richard A. Tell will be one of the speakers.

Individuals interested in the microwave health hazard and in the efforts of government and industry to measure and control it may attend the one-day session for a registration fee of $10 without signing up for the entire APHA meeting. The program and registration forms may be obtained from Richard J. Guimond, Office of Radiation Programs, EPA, Rockville, Md. 20852, telephone (301) 443-1774).

Safety Note: Watch Those Solvents!

Some of the commonest and most dangerous materials used in environmental testing laboratories are organic solvents. They are highly flammable and pose a constant hazard to lab personnel and property.

These five safeguards are urged by Karl Spence, EPA safety officer, in the use of organic solvents:

1. Keep only a minimum amount of solvents inside the laboratory itself. Bulk quantities of solvents should be kept in a special storage building at least 50 feet from the laboratory structure.
2. Store all flammables in steel cabinets designed for such storage.
3. Keep organic solvents in stainless steel safety cans. These cans will not rupture if exposed to flame. Ceramic-lined versions are available for use with nonograde solvents.
4. If solvents are handled in glass jars, these jars should be shatterproof and plastic coated to eliminate spillage if dropped.
5. Keep flames and heat away from solvents except during controlled experiments.

'NO DISCHARGE' STANDARD IS SET FOR BOAT TOILETS

A "no discharge" standard for marine sanitation devices – toilets, showers, galley waste water – was adopted by EPA June 23. It will take effect after the U.S. Coast Guard certifies what kinds of devices meet the standard and how they will be inspected and policed.

The Coast Guard is not expected to do this for at least six months.

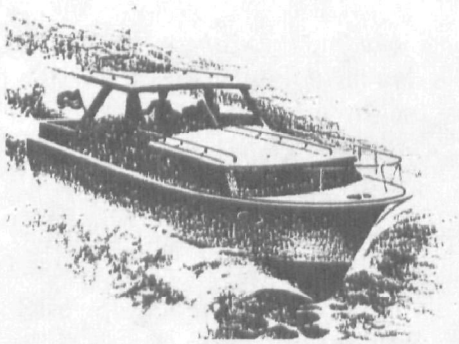
The standard will apply to all vessels with toilets on all navigable waters. New vessels must conform within two years, and existing vessels within five years, of the Coast Guard regulation date.

EPA's action is the first step in eliminating the discharge of vessel wastes in interstate waters, a practice which has been almost entirely unregulated.

After public hearings and voluminous comments on proposed performance standards, Administrator William D. Ruckelshaus decided that:

- No systems have yet been developed to treat and disinfect vessel wastes adequately.
- Holding tanks to be pumped out on shore and handled by municipal or other shore-based treatment systems are the best present method of dealing with the problem.

Ruckelshaus acknowledged that sewage treatment facilities in ports and marinas are often inadequate too, but he said, "We think these problems are solvable in a reasonable period of time."



The standard provides an incentive for vessel owners to install on-board treatment systems which discharge no visible floating solids and less than a stated bacteria count. If the boat owner installs such a device within five years from the date of the Coast Guard regulations, he will be exempt from further cleanup for the life of the vessel. Otherwise he would have to install a no-discharge device – a holding tank or recirculating toilet – within eight years.

The incentive provision would lead to "some immediate pollution abatement," Ruckelshaus said, and the standard, though still not officially in effect, will spur research and development in the marine waste treatment area.

Thirty-one states now require on-board treatment devices or holding tanks for vessels in their territorial waters, while 19 states have no regulations. The EPA standard specifically provides that states may pass tougher rules if they wish.

Most Uses of DDT Banned After Dec. 31

Use of the long-lived chemical pesticide, DDT, has been banned in the United States as of the end of this year.

The order by Administrator William D. Ruckelshaus culminates three years of study of the controversial pesticide by various Federal agencies and seven months of hearings by EPA.

The six-month delay until Dec. 31, Ruckelshaus said, was to permit an orderly transition to other means of crop pesticide control, including the training of applicators in the use of chemicals that are dangerous to handle, although they do not, like DDT, persist in the environment.

The scientific evidence is overwhelming, Ruckelshaus said in his 40-page formal decision, that DDT is an uncontrollable, durable chemical that is magnified in the natural food chain and stored in the body, posing a potential threat to human health.

His action does not bar the use of DDT in the case of emergency public health measures, such as might follow an outbreak of malaria or other insect-borne epidemic. Exports of DDT to other countries are still permitted.

Another exception to the ban is for three minor crops: green peppers, onions, and sweet potatoes in storage, for which no effective alternative has been developed.

The order culminates a riches-to-rags story for DDT, the miracle, all-purpose pesticide first used to halt the spread of disease in crops, animals, and people during World War II. It won a Nobel Prize in 1948 for Paul H. Mueller, the Swiss scientist who discovered the compound's insect-killing properties.

Ten years ago, Rachel Carson sounded the warning against DDT and other persistent synthetic chemicals that upset nature's balances. The evidence mounted that DDT and its relatives killed beneficial life forms as well as pests, and that the pests often developed resistance to these insecticides and flourished anyway. In recent years, Sweden, several other countries, and about a dozen states have either prohibited DDT or severely restricted its use.

GPO 935-286

Recent Useful Publications

Relationship Between Animal Wastes and Water Quality, 35 p., June 1972. Summarizes recent meetings held by the President's Water Pollution Control Advisory Board on the management of wastes from animal feedlots and poultry farms, with recommendations for new research and legislation. Single copies available from: EPA Publications Branch, Public Affairs, Washington, D.C. 20402.

Maintenance, Calibration, and Operation of Isokinetic Source-Sampling Equipment. by Jerome J. Rom, Applied Technology Division, Office of Air Programs, 35 p., March 1972. Use and upkeep of stack sampling instruments. Available from: APT Information Center, EPA, Research Triangle Park, N.C. 27711.

Biological Aspects of Lead: An Annotated Bibliography, in two parts, 935 p. Surveys technical literature from 1950 through 1964 on lead's effects on plants, animals, and man. Limited number of free copies available to qualifying state and local government bodies from: Air Pollution Technology Information Center, EPA, Research Triangle Park, N.C. 27711.

The following *Process Design Manuals* in wastewater treatment are available only through EPA's technology transfer committee chairmen in the 10 EPA regional offices, and supplies are limited. Each manual was compiled by a consulting engineering firm under contract to EPA to summarize practical applications of the latest research in the field:

Upgrading Existing Wastewater Treatment Plants, Roy F. Weston, Inc. 267 p.

Suspended Solids Removal, Burns and Roe, Inc. 121 p.

Phosphorus Removal, Black and Veatch, 188 p.

Carbon Absorption, Swindell Dressler Co., 61 p.

TUITION FEES SET

Tuition fees are now being charged for all EPA's technical and managerial training courses.

The new fee schedule, effective July 1, is authorized by the User Charge Act which permits the Federal Government to charge for services it performs for individuals and groups.

The fees per student-day will be: air pollution, $90; water quality, $100; water hygiene, $60; solid waste management, $70; radiation, $50; and pesticides $40 (at the Perrine, Fla., Primate Laboratory, $115).

More than 8,000 persons took EPA courses in fiscal 1972, about half of them from State and local agencies. More than 300 courses were given, most of them short and intensive.

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