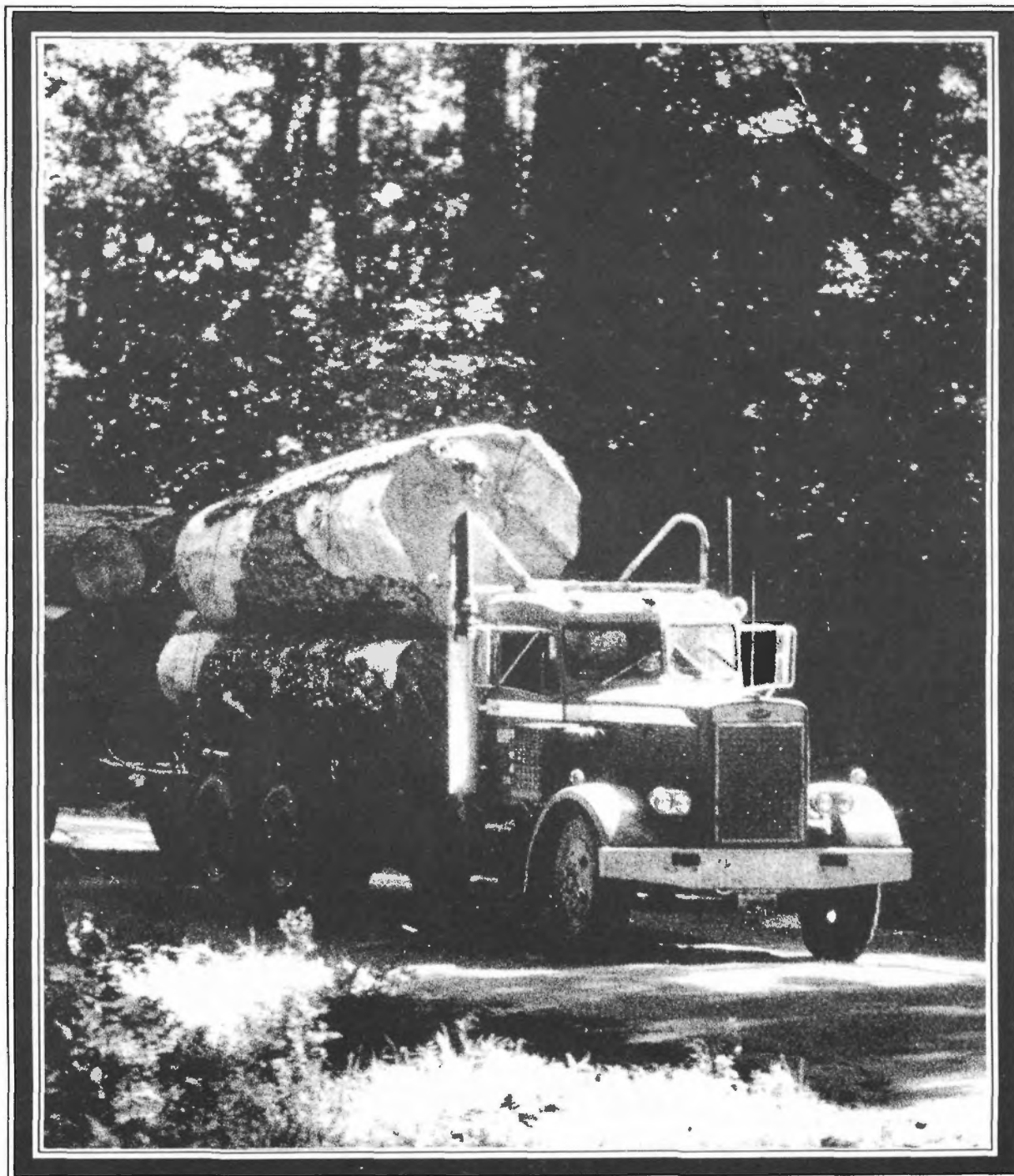


EPA JOURNAL

JUNE 1976

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FIGHTING FOREST POLLUTION

U.S. Environmental Protection Agency

We begin this issue in America's forest lands where the silence is sometimes broken by the snarling of power saws, the crashing of falling trees, and the roar of huge tractors and trucks removing the new logs.

Faulty construction and maintenance of the thousands of miles of timber removal roads which snake through the forests has caused serious erosion problems, especially in hilly or mountain areas. Massive

TRAVELING WITH THE JOURNAL



quantities of mud wash down into clear mountain streams, polluting what usually are the cleanest portions of our river systems.

The lead article describes the problems and what EPA is doing to help curb this source of pollution.

The Journal then travels to the Himalaya Mountains in Nepal, the Austrian Alps, the Ruwenzori Mountains in Uganda, and the Andes in Peru to report on scientists who "read" glaciers for evidence of pollution conditions over the centuries.

We visit the Kennedy Space Center at Cape Canaveral, Fla., where EPA is opening a \$250,000 exhibit on the role of science and technology in achieving a cleaner, more healthful environment.

We pause in Washington to see a new garden which was developed with the aid of generous quantities of composted sludge, the solids left after treatment of sewage at the District's Blue Plains plant.

We take a good look at the Great Southwest in "Region VI on Parade."

We hopscotch back and forth across the country in articles on progress in air and water pollution control.

An article about a new film reports on the impact of air pollution on health.

Reading about the effects of air pollution is interesting, but listening to an air pollution victim can be chilling. The Journal recently interviewed Anne Haughton, press officer in EPA's Philadelphia office.

Miss Haughton was walking on a sidewalk in downtown Philadelphia one windy day last March when something flew in her eye. After trying unsuccessfully to rub it out, she went to a hospital emergency room where doctors used a tiny drill to remove a particle of metal about three times bigger than a period on this page from the cornea of her right eye.

However, the doctors left a "rust ring" deposited by the metal particle because they were afraid that

removal of this ring would require the cutting away of too much eye tissue.

When her vision continued blurred, Miss Haughton went to an eye specialist who managed to remove most of the rust ring. Now, she has been told, with the aid of glasses, her eyesight can be returned to normal.

This was, of course, a freak accident. Yet it illustrates an often-overlooked aspect of air pollution.

EPA strategy for reduction of particulates has focused on controlling emissions from such sources as industrial plant chimneys. This approach has generally reduced particulate pollution. Now both EPA and the States have become increasingly aware that "fugitive emissions"—particles generated from industrial operations and discharged to the air through windows and doors, which have no pollution controls, or blown up from the street by car traffic or wind—are making it difficult to attain the standard for particulate control, particularly in the big cities.

Actually, the smaller particulates, the ones which may not be visible at all, are generally more harmful than the larger particles. Fine particulates are a particular health hazard because they can bypass the body's respiratory filters and penetrate deeply into the lungs.

Dr. Douglas Hanmer, an EPA science consultant who has been studying the health effects of air pollution on respiratory diseases in children, has reported that particulates can cause higher rates of diseases such as croup, bronchitis, and pneumonia. In addition to causing an increase in respiratory diseases in children, he warns, air pollution poses "an increased risk of chronic respiratory diseases in the same children when they grow up and become adults."

All of this shows once again that we run enormous risks by abusing our environment. □

EPA JOURNAL



U.S.
ENVIRONMENTAL
PROTECTION
AGENCY

Russell E. Train
Administrator

Patricia L. Cahn
Director of Public Affairs

Charles D. Pierce
Editor

Staff:
Van Trumbull
Ruth Hussey

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COVER: Logging truck on road near
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FIGHTING FOREST POLLUTION

Lightning flamed across the night sky and thunder rolled up and down the mountain hollows as a violent storm sent sheets of rain pelting to earth.

The storm lashed a rocky ridge, sending water cascading south into one valley and north on the other side into another watershed.

Rain falling on the south side flowed through some clumps of mountain laurel and gradually gathered into rivulets which soon sank into the thick leaf- and humus-carpeted floor of a maple and oak forest below.

At dawn the storm eased into a mild drizzle and then stopped as the sun sent shafts of light through a rift in the clouds.

Near the base of the south side of the ridge a trout stream, swollen by the heavy rain, wound through a dark forest occasionally lit by clouds of flowering dogwood. A tiny Carolina wren, warmed by the rising sun, burst into raucous song.

On the north side of the ridge the rain had splashed down a rocky incline and across a hillside scarred by poorly maintained logging roads. Now the ascending sun began drying the erosion fissures in these roads which had been carved deeper by the night's rainfall.

Below a once clear brook carried a muddy load of mountain earth on its way to the sea. Among the fish and animals smothered in the chocolate stream was a young frog which had been devouring a dragon fly in its final moments. Death came when a portion of the water-soaked logging road above suddenly slumped down the ridge, sending a torrent of soil and rock crashing and rumbling into the small waterway.

In the forests, improper construction and maintenance of logging roads is often a major cause of water pollution.

The U.S. Forest Service is working to develop procedures which will avoid such problems as the construction of poorly designed logging roads on the ridge's north side which strip the soil of its natural leaf litter. This forest floor covering normally absorbs the impact of falling rain.

Forests such as those on the south

side of the ridge are shields that protect the soil from erosion by soaking up rain faster than it falls. Live tree roots also bind forest soil and provide passageways for water to enter the earth.

Other causes of water problems in the forest include soil disturbances during tree harvesting and transportation, damage to fish spawning areas in stream beds by operation of logging equipment and application of pesticides and herbicides. The removal of shade by cutting of trees along stream banks can also result in fish kills when a glaring sun heats up the water.

While irresponsible clear cutting of timber over huge areas can also sometimes contribute to erosion problems, the mere cutting of trees is generally not the cause of water pollution. Even though the leafy tops are removed when trees are cut, the existing litter cover can often help protect the soil until a new tree canopy grows.

The muddy water produced by erosion from logging roads ruins streams for fish and humans. The siltation also causes economic damage because industries cannot use muddy water.

The extent of the problem of logging roads is shown by the fact that in the Pacific Northwest alone there are over 250,000 miles of such roads. An estimated 12,000 miles of these roads are constructed or reconstructed each year in this region, where erosion is a particular problem because the extensive timber cutting is often conducted in mountainous terrain in wet weather and near streams.

To help control this and other forest pollution problems, EPA awarded a \$66,000 grant to the American Forestry Association to hold a series of workshops on forest practices and water quality.

The purpose of the workshops has been to examine all State options and approaches to the problem of control of pollution from such non-point sources as logging road erosion and to begin development of suitable State programs.

Nearly 800 people participated in the seven workshops held in the following cities: Atlanta; Boston; New Orleans; Portland, Ore.; the District of Columbia; Denver; and Chicago.



Giant trees tower above the forest floor.

At each of these workshops State delegations composed of key legislators, administrators of forestry and environmental programs, representatives of large and small forest landowners, environmentalists, conservationists, and other interests were present. Each State group presented initial assessments of water quality problems on forest lands and recommendations for dealing with them.

Jack Churchill, EPA's Water Planning Division interagency coordinator, served as the policy and technical director for EPA at the workshops. Ruth Brown, public information specialist, EPA Office of Public Affairs, served as project officer responsible for over-all management of the grant and worked with the Forest Service and the American Forestry Association in the planning and management of each of the workshops.

Now the American Forestry Association will present its recommendations to Administrator Russell E. Train and John R. McGuire, Chief, U.S. Forest Service, at a meeting this month.

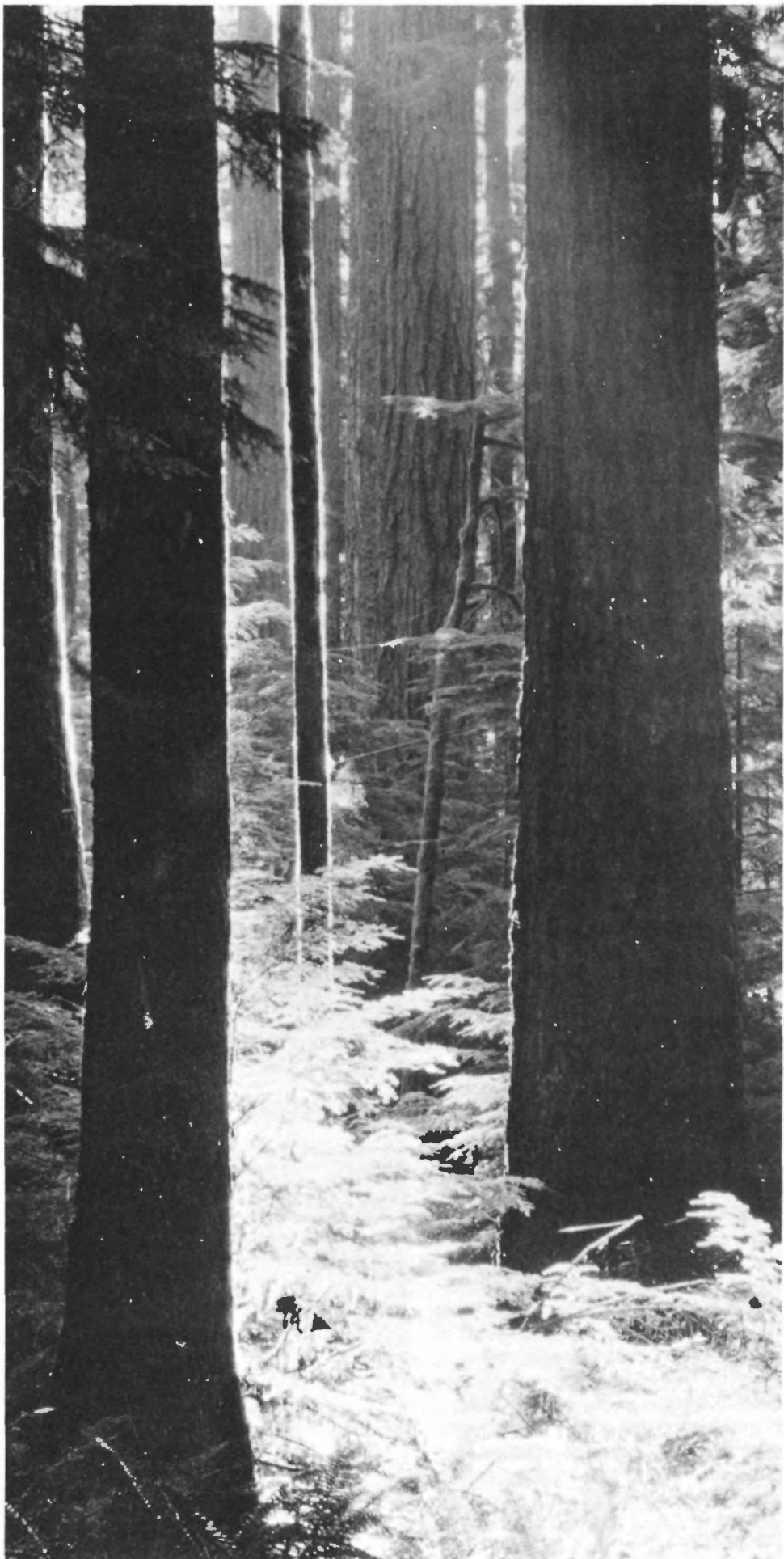
In dealing with non-point sources of pollution such as erosion, EPA has been encouraging State planning agencies to determine "best management practices" to prevent pollution rather than to devise suitable "after the fact" treatment processes.

Best management practices are being developed by a State or one of its planning agencies after examination of alternative means of preventing or reducing pollution. These practices should reflect such factors as differences in climate, soil, slope, and vegetative cover.

In a speech to the American Forestry Association last October, Administrator Train said:

"I have repeatedly stressed my view that EPA's success in carrying out the Clean Air and Water Acts and other laws will be determined, not so much by our zest in issuing regulations or by our zeal in enforcing them—though these are important, particularly the latter—but by our willingness to work *together with* (and I stress those words) the citizens of this country, not simply after the fact, but in the very formulation of our regulations, guidelines and plans—by our willingness to make the people affected by our decisions and regulations a full partner in the process by which we arrive at those decisions and regulations.

A dense stand of old-growth Douglas fir in the Olympic National Park, Wash.





Timber roads cross clear-cut mountain side.

"In no respect is this need to get the people affected *by* what we do involved *in* what we do more urgent or important than in our efforts to reduce water pollution from non-point sources. By its very nature, this effort will require active and effective cooperation between everybody concerned—between the newer environmental interests and the century-old natural resources conservation movement, between EPA and the State regulatory agencies and the forest and agricultural land management agencies and private industry.

"It is to assure precisely that kind of cooperation between the forest management, conservation, and environmental communities that EPA has joined with the Forest Service and your Association in holding seven forest practices and water quality workshops throughout the country. As I have suggested, we share common concerns and we stand on common ground. Good water pollution prevention practices are also good soil and water conservation practices. And I am determined that we take full advantage of your expertise and experience in developing approaches to non-point source control in the Nation's forests that enable us to achieve our objectives under the law at least cost and greatest benefit."

The Council on Environmental Quality in its 1975 report on Environmental
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Quality noted that "one of the major environmental problems involved in cutting timber is the effects on life in nearby streams.

"Poor logging practices can harm fish in several ways," the report said. "Logging and the building of roads for logging can erode stream banks and allow sediments to clog the streams. Logging debris can stop the stream flow. Loss of tree cover can change the stream temperature winter and summer. Pesticides and fertilizers from intensive forest management may pollute the streams.

"Good forestry management can limit these adverse effects. For example, buffer strips are often left uncut on stream borders. But just how wide the strip must be to protect the fish adequately is not well understood. Nor is it known how long-lasting is the disruption of fish from nearby logging or how much wood production it is reasonable to give up for what may be a temporary impact on fisheries."

EPA's Region X has published a manual titled "Logging Roads and Protection of Water Quality" which is designed to serve as a state-of-the-art reference on the protection of water quality in planning, designing, constructing, using, and maintaining logging roads.

Robert S. Burd, Director of the Water Division in Region X, said that in addition to this report, environmen-

tal studies of timber harvest methods, management of slash and other timber residue, and reforestation are now being prepared. The Region is also developing a report on proper methods for use of chemicals in the forest to keep to a minimum the impact on the environment.

"This information coupled with other EPA, State and Federal agency studies and the information and talent of responsible forestry organizations should provide a good base for deciding what are best practices on specific sites," Mr. Burd said.

EPA has proposed regulations to control water pollution resulting from both agricultural and forestry activities. The new regulations would require the use of National Pollutant Discharge Elimination System permits for certain agricultural and forestry activities.

The proposed regulations recognize that most forestry activities result in non-point source pollution which cannot be controlled by the permit process.

The regulations would require discharge permits only for such auxiliary forestry operations as rock-crushing and gravel washing for road construction and log sorting and log storage yard operations where the use of water could result in the discharge of pollutants. The final regulations are scheduled to be issued this month. □



Lumber roads and clear cutting in a northern California pine forest.

FARMERS FEEL “THE STING”

By Larry O'Neill

“The Sting” has been more than an Academy Award winning movie recently for some pesticide buyers. For them, it's been an all too real pinch in the pocketbook.

For example, last year a Colorado farmer purchased ten gallons of a weed killing product over the telephone from a New York City salesperson. The farmer was told that this herbicide was in a concentrated form and approved for cropland use. Reading the label only after sale and delivery, this unwary farmer discovered that the weed killer was neither concentrated nor permissible for crop uses. His loss: \$160.25 and, presumably, some professional pride.

The problem continues of farmers and other consumers being “stung” by telephone misrepresentation of pesticides, especially weed killers. A March 4 edition of a small town South Dakota newspaper, for example, warns readers, “Many chemicals are being sold by telephone—be careful of this one or you might find barrels of questionable products delivered to your door.”

Nor is the pesticide “sting” exclusively a western phenomenon. It has occurred frequently in the Midwest and eastern U.S. as well. A North Carolina grain and hog farmer bought ten gallons of a herbicide by phone after being told it would kill weeds around hog pens for up to two years. Again, this farmer read the labeling only after paying \$160 for the product. No claims of two-year effectiveness were made and, worse, the label warned of toxicity to livestock.

North Carolina officials have calculated that some herbicides being hawked by phone are so diluted that a user would have to buy \$3,289 worth to treat one acre.

Complaints about phony pesticide telephone promotions have come into EPA and State agriculture departments from consumers in Arizona, California, Georgia, Kansas, Nevada, New York, Washington, and West Virginia, in addition to the States already mentioned.

Larry O'Neill is a Headquarters Press Officer.



A farmer measures out a soil insecticide for use on his fields.

A concerned coalition of Federal, State and private organizations is attempting to do something about this particular sting. Prosecution of suspected firms has been difficult. It's rough to build a legal case on the basis of phone conversations. To date, the coalition has relied primarily upon a news and public information campaign to make pesticide buyers aware of the potential hoax. The coalition consists of EPA, the U.S. Department of Agriculture, the Federal Trade Commission, other Federal agencies, several farm organizations including the National Grange and the American Farm Bureau, several environmental and consumer organizations, and farm chemicals trade associations.

“In most situations, farmers and other pesticide users should buy products only after they have been able to read the product label,” advises EPA Administrator Russell E. Train. “Telephone purchases are all right only if the buyer is dealing with a reputable agent personally known to him.

“The statements and precautions on pesticide labels are backed up by intensive scientific study and careful scrutiny. The label provides a guarantee that the product will do an effective job in an environmentally safe way. Users should always read and follow label instructions when applying a pesticide.”

The claims made by the telephone hucksters include: the products are non-toxic to people, livestock, and fish; they will control all weeds when in fact they will only control some; they can be used on crops or pastures when actually they may damage or destroy these areas; and they will curb all weeds for up to three years. Prizes are sometimes offered to the farmer if he will buy. The calls are normally made in the early morning or late afternoon.

Pesticide buyers should make it unmistakably clear to any telephone huckster that they are not interested in and will not pay for the weed control products, the coalition warns. Reports indicate that wavering buyers have sometimes been shipped the pesticides C.O.D.

“The vast majority of pesticide producers and dealers in this country condemn these unethical actions on the part of a dishonest few,” Mr. Train said.

The coalition urged farmers to help stop the telephone sales racket by keeping an accurate record of such calls and reporting them immediately to a local agricultural agency or one of EPA's ten regional offices. Helpful information would include: date of the call, caller's name, his company, his phone number, the product, the manufacturer, and the EPA registration number of the product if one exists. □

Environmental Detectives Find Icy Clues

By Truman Temple

Can glaciers serve as a historical "pollution index" to show what man has been doing to the global atmosphere?

Scientists say the answer is yes, based on a series of expeditions, supported by the U.S. Environmental Protection Agency, to the Himalayas in Nepal, the Austrian Alps, Uganda, and this month to the Peruvian Andes. The \$400,000 project is financed under the Special Foreign Currency Program of EPA's Office of International Activities, headed by Associate Administrator Fitzhugh Green.

Glaciers in these remote areas serve as historical monitors for world-wide air pollution. Each year the snows fall on the high mountain passes, carrying minute traces of whatever pollution exists in the upper global air, and the result is a sealed layer of deposits—much like the annual rings in an ancient tree—that can be "read" by specialists. A year's deposit is anywhere from two to five feet thick, depending on its depth in the glacier, since it becomes compressed with time.

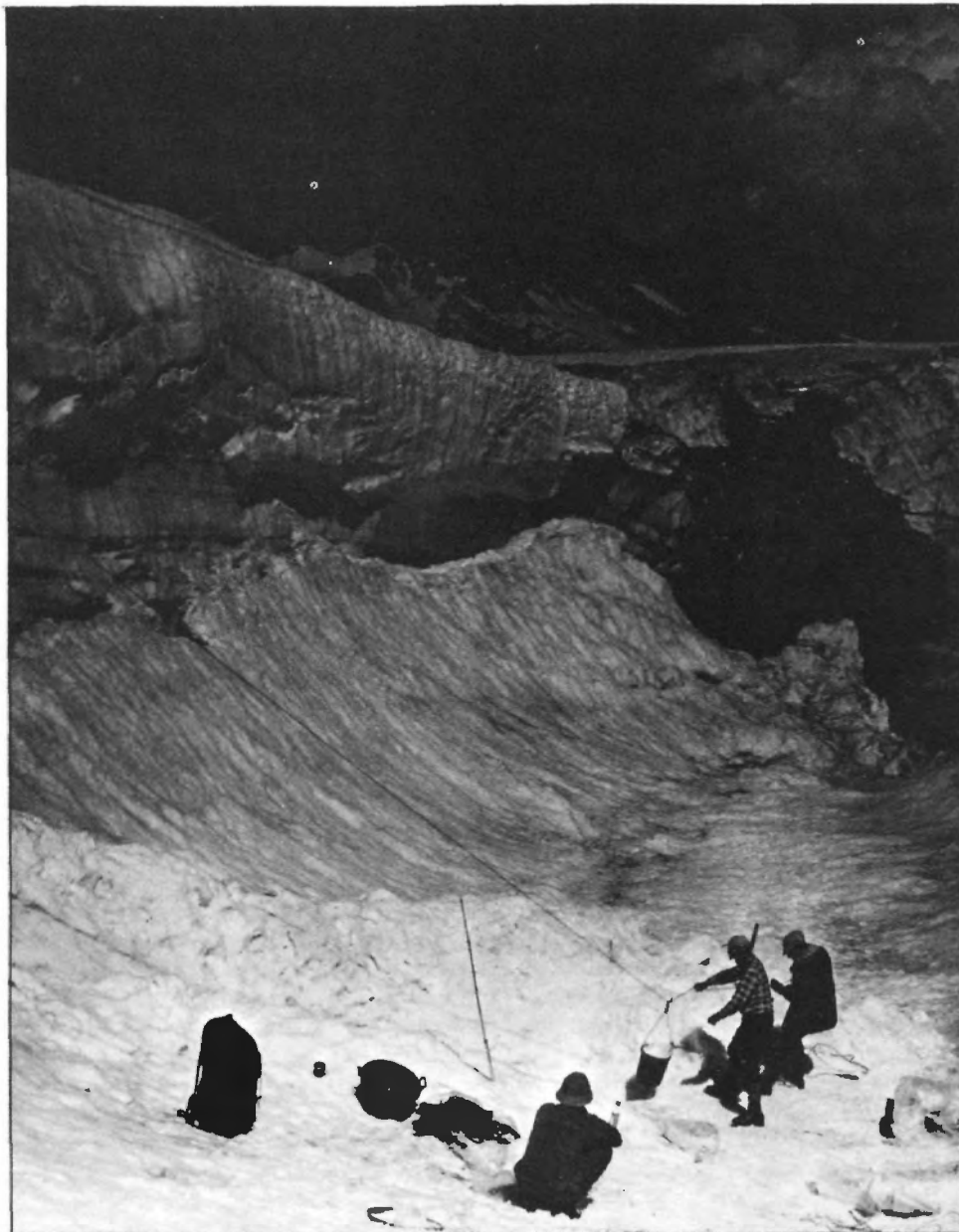
So by cutting down through the glaciers, and analyzing the contents of the ice for each year, scientists can find out a great deal about which pollutants have been traveling far beyond national borders. The oldest glacial record found in the Himalayas was a large fragment of ice sitting on the floor of a valley, which scientists dated by radioisotopes back to the 12th century. However, what interests the investigators most is the pollution deposited since the Industrial Revolution began, especially heavy metal and radioactive particles.

EPA has been participating with Polish scientists since 1970 to gather this information. Dr. Zbigniew Jaworski, head of the Polish team of

Truman Temple is a Headquarters Public Affairs Officer.

Dr. Kazimierz Grootowski, a physicist on the Polish expeditionary team, loading sample of ice from the Gurgler Ferner glacier in Austrian Alps. Bucket is lifted by cable to the surface of glacier and ice is later melted for analysis of pollution.

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Scientists lift bucket of ice samples from the Gurgler Ferner glacier in Austrian Alps during 1974 expedition.

scientists, will visit EPA Headquarters in Washington next month to discuss results of the latest expedition to the Ausungate glaciers in the Peruvian Andes. Dr. Raymond H. Johnson, Jr., EPA project officer from the Office of Radiation Programs, will assist the Polish team later this year in preparing a final report on the studies. The aim of the project is to compare local and long-distance patterns of dispersion of radioactive elements such as uranium, thorium, and radium, as well as stable heavy elements including cadmium, vanadium, lead, and mercury from industrial sources. Studying the long-term changes will help scientists predict future trends in pollution of the biosphere.

So far the investigators have found both good and bad news about worldwide air pollution. The bad news is that even the pristine heights of the Cherku and Langtang glaciers 40 miles north of Katmandu in Nepal at an altitude of more than 18,000 feet are not free of contamination. Dr. Donald T. Oakley of EPA's Office of International Activities, who served as project officer on the expeditions to Nepal in 1973 and Austria in 1974, said he and the Polish team found a marked increase in deposits of atmospheric lead over the past 30 years. This metal is a byproduct of the combustion of coal in power plants and also may come from the metalworking industry. The glacial ice also showed a sharp increase in recent years in concentrations of cesium-137, a fission product of atomic tests.

Radionuclides occur naturally in coal, and when the fuel is burned the radioactive material goes up the stack either as particulate matter or in the form of gases. Scientists assume the pollutants travel on global air currents from industrialized countries many thousands of miles away, since there are relatively few sources in Nepal that could produce such pollutants.

The good news in all this is that these radioactive materials apparently do not occur in large concentrations more than about 30 miles from the plant site. The team confirmed this by comparing measurements close to power stations in Poland with those taken at remote glaciers. (The increased quantity of radium-226 found in the Himalayas is believed to come from natural sources, such as dust blowing from barren lands nearby, rather than from power plants in Europe.)

What's it like to go on an expedition looking for pollution in ice three and a half miles above sea level?

"First of all, you have to be in excellent physical shape," says Dr. Oakley, who jogged three miles a day for six months when training for the project. "And when you get to the base camp, you have to work there for a while to allow for an increase in the oxygen-carrying capacity in your blood because of the altitude."

Easily the most colorful figure on the expeditions was Dr. Jaworowski, a small, stoop-shouldered scientist with



Dr. Donald T. Oakley of EPA on Cherku Glacier in Nepal with four weeks' beard during 1973 expedition to the Himalayas.

long grey hair and rimless glasses whose intellectual gifts were quickly apparent. Says Oakley: "He has not only an M.D. degree but a Ph.D. and a doctorate in science. He quoted Shakespeare and Byron. He could sing the whole choral section of Beethoven's Ninth Symphony in German and taught parts of it to our Sherpa guides. And he was very skillful about getting equipment and support for the expeditions."

There were a few problems. One member of the team, an experienced alpinist, came down with altitude sickness and had to be sidelined. Then a

three-day blizzard hit the base camp at 16,000 feet altitude in Nepal with not only snow but lightning and thunder. One tent collapsed under the winds and drifts. "The occupants looked like a bag of cats scrambling around in there," says Oakley, "but we dug them out and rigged a new support pole for the tent."

But mostly the expedition was very hard physical work, cutting down fifty feet and more through the glacier, loading chunks of ice into plastic cans, hauling them up by ropes, and carefully melting the contents in a specially heated tent so the pollutants could be removed and packed for analysis back in Poland.

Dr. Jaworowski showed his talent for handling people with spectacular success in Uganda, where the Polish team had sought to visit a glacier in the Ruwenzori mountains. What nobody reckoned on was dealing with Major General Idi Amin, the president of Uganda. For days the team sat around in the capital without hearing anything about their request for permission to climb the glacier.

Suddenly, as they were lunching in a cafe, a limousine drew up and a uniformed group strode into the cafe. Dr. Jaworowski recognized President Amin behind the dark glasses and knew exactly what to do. He leapt to his feet and began applauding, and his fellow scientists took the cue and joined in.

The President beamed with pleasure. The next day they were on their way to the mountains. □



Dr. Zbigniew Jaworowski, head of the Polish team of scientists, prepares sample of glacier ice for melting in Alpine warming hut in Austrian Alps near Obergurgl.

Sludge Helps a Garden Grow



Roots of new trees in Constitution Gardens are planted in composted sludge.

Washington's new tourist attraction, Constitution Gardens on the Mall near the Lincoln Memorial is built on soil enriched with carefully composted sewage sludge.

Beneath the gardens' 42 acres of trees, grass, and flowering shrubs are approximately 30,000 cubic yards of sludge from the District of Columbia's Blue Plains treatment plant. Sludge is the residue left after sewage is treated.

Using sludge and other composted organic materials to lighten and improve the soil has saved the taxpayers about \$200,000, according to officials of National Capital Parks, the branch of the National Park Service that operates most public parks and monuments in the Washington area.

In May the last of 2,400 trees and about 3,000 shrubs were planted; a six-acre lake was filled with water; grass plots were sodded; and walkways, steps, and benches installed.

The area is now ready as a place of relaxation for Washington's bicentennial visitors and for the presentation of musical and other entertainments arranged by the District of Columbia's

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Summer in the Parks program.

The composted sludge technique was developed by the National Capital Parks Ecological Services Laboratory in cooperation with the Agriculture Department's Research Station at Beltsville, Md., and EPA experts in wastewater treatment. EPA also provided approximately \$2 million to help finance the sludge treatment research.

The sludge is not applied to the land directly, according to James C. Patterson, Research Agronomist for the Ecological Services Laboratory. It first must be composted, or allowed to decompose. This was done at Beltsville, where the sludge was mixed with wood chips, spread in long windrows, or piles, and turned over periodically by bulldozers. The wood chips were added (about one part of chips to three parts of sludge) to aerate the mixture, keep it from caking, and hasten its decomposition by air-breathing bacteria. After several months of composting the mixture was friable, homogenous, and virtually free of odor, ready for trucking to the site.

At the Gardens the basic grading operations were completed first. The lake hole was dug and lined with concrete. Small hills and valleys were contoured. Then the composted sludge and wood chips were further mixed with leafmold and existing soil. The leafmold was obtained from leaf piles collected the year before by the Park Service, the D.C. Government, and Arlington County, Va.

All these spreading and mixing operations were planned to provide a 14-inch layer of compost-soil mixture after compaction by machinery throughout the Gardens, Mr. Patterson said. On top of this was spread a four-inch layer of topsoil. Only about one-fifth of the needed topsoil was obtainable at the site; the rest was purchased.

Total cost of soil preparation and topsoil was \$205,000. Without the compost layer, the Gardens would have needed 18 inches of topsoil at a cost of \$408,000, said Mr. Patterson.

Continuous testing of the reconstituted soil will be carried on to make sure the trees and grass will flourish,

he said. Some nitrogen fertilizer will be required, but the sludge-leafmold mixture is rich in phosphorus and potassium compounds, so these fertilizers will not have to be added.

One cause of concern when sewage sludge is used as a soil conditioner is the content of "heavy metals"—salts of zinc, manganese, cadmium, mercury, lead and other elements that may be hazardous to plants and human beings.

The metallic content of the Blue Plains sludge is low compared to that of most large cities, Mr. Patterson explained, because there is little heavy industry in Washington. Moreover, the sludge is diluted with wood chips, leafmold, and soil. Careful measurement on a test plot showed that soluble salts and heavy metals, presumed to come mainly from the sludge content, were reduced to acceptable levels by natural weathering and leaching in less than six months. Pathogenic bacteria are destroyed by heat during the composting process.

The soil underlying Constitution Gardens has had a checkered history. It was once a tidal marsh of the Potomac River, draining into Tiber Creek which began about where the Washington Monument now stands and ran east toward Capitol Hill and then south to the Potomac. It was deepened to form a canal to the foot of Capitol Hill in 1802 (There are two Canal Streets in Southwest Washington a few blocks from EPA Headquarters).

In 1831 the canal was extended along the creek's path as far as the Potomac River.

The Tiber Creek Canal was intended for commercial traffic but proved unsuited for heavy barges and soon fell into disrepair and became an open sewer. In 1882 when the Army Corps of Engineers began to dredge deeper channels in the Potomac along the Southwest waterfront and Georgetown, the dredged silt was used to fill the Tiber Creek Canal and to make two parks along the River, East and West Potomac Parks.

During World War I "temporary" office buildings were erected on the filled land along Constitution Avenue. They stayed in use until 1969. After the "tempos" were torn down, more fill was added from various excavations, principally the Library of Congress Annex, and the level plot was seeded to grass. The Gardens construction began in August, 1974. □

THE JOURNAL NEEDS YOUR HELP

In the year and a half since the EPA Journal began publication we have received many encouraging comments from readers about the publication, but we would like a little specific guidance on how the magazine could be more useful.

Therefore, we have prepared some questions to find out whether you believe the articles are informative and help to keep you posted on Agency activities. We would appreciate it if you could take a few minutes to answer the questions.

At present we try to distribute the magazine to all EPA employees at their home address. We do this so employees will have more leisure to read the publication and so that other members of the family can read the publication if they wish to. A space is provided on the back page of each issue for change of address or discontinuance of the publication.

We want to use this opportunity to check on whether you find it valuable to have the magazine delivered to your home.

Now you can help us by answering the following questions, tearing out this page and sending it by July 15 in a government franked envelope or interoffice mail to: Survey, EPA Journal, A-107, Waterside Mall, 401 M St., S.W., Washington, D.C. 20460.

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4. There are several regular departments that appear in EPA Journal. For each one listed, indicate whether you read it always, sometimes, or never.

	Always	Sometimes	Never
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People	☐	☐	☐
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5. What type of job do you hold?
Professional ☐ Clerical ☐
6. What age group do you belong to?
Under 30 ☐ 30 to 40 ☐
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7. Do articles in the magazine help keep you posted about Agency activities?
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10. Do you ever find articles in EPA Journal worth reproducing?
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11. How many people besides yourself would you estimate see or use the copy of EPA Journal that you receive?
_____ number of people.
12. Would you like to see more articles about Headquarters ☐, the Regions ☐, the Laboratories ☐.
13. What EPA programs would you like to read more about in EPA Journal?
14. Do you have an idea for a worthwhile article EPA Journal should carry?
15. Do you have any suggestions for changing or improving the magazine?

You do not have to put your name on this questionnaire unless you want an answer. If you are experiencing any difficulty in receiving the magazine, list your current address on this page so that we can correct the problem. □

YOUR HEALTH AND AIR POLLUTION

A new film produced by the American Lung Association in cooperation with EPA has been completed and is now available through local and State lung associations.

Titled "Air Pollution: The Facts," the film presents the comments of leading authorities about air pollution as a health hazard.

Excerpts from statements made in the movie about the impact of dirty air on human beings follow:

Dr. John Knelson, Director, Health Effects Research Laboratory, Research Triangle Park, N.C.:

"In the past two or three decades, the major causes of death and disease that plagued humankind over the last several thousand years have been brought under control for the most part. We realize that we are now left with basically three major disease processes that cause sickness and death, and that those are heart disease . . . lung disease and cancer . . . air pollution is a real contributing factor to disease and death from all three of these causes."

Dr. Gerschen Shaefer, President, California Thoracic Society, Chairman, Environmental Health Committee, California Medical Association:

"The type of air that we have here (southern California) looks like an industrial or factory town. Actually, we have a minimal amount of industry and practically nothing that actually produces stationary pollution. However, our air pollution is generated elsewhere, particularly from automobiles, and blows on the winds into this area. The currents of the winds can carry pollution for hundreds of miles and unfortunately this area sits in a spot that carries cross currents of smog from several areas.

"Up to five or six years ago people were moving to this area, sent by their physicians in other parts of the country, because they had chronic lung disease, asthma, bronchitis, emphysema. This was the healthiest place, they felt, in the country that they

could live. You can see what it looks like now, and this is one of our better days. Approximately six months out of the year we're living in a state of what I call 'chronic public health emergency.' As far as the air we breathe, on days of high pollution I will have up to 17 patients who will have to be worked into my office as emergencies. These are people who are having trouble with their breathing capacity. On bad days, we have to take the children off the playgrounds. We have to reschedule Little League games, and on these occasions we have seen children vomiting in swimming pools because they have been exercising."



Before his death in 1973, Robert B. Jones of Birmingham, Ala., was totally dependent on pure oxygen from the equipment he carried wherever he went. He was suffering from emphysema.

Dr. Richard Geer, Pediatrician, Durango, Colorado:

"About five years ago, in 1971, it happened to an area particularly concerned about the opening of four major power plants in the Southwest. At that time, we did a study of respiratory lung disease in children

and found an alarming increase, an almost doubling effect over the five years. Today we are again concerned because there are eight to ten, possibly 12 more power plants in the whole Southwest being contemplated for opening the next five or ten years. A lot of people like to come and visit here from larger metropolitan areas and I think they're a bit naive. They look at the sky and say, 'My God, this is so beautiful we could never pollute that.' They think the naive idea that 'we'll build all the power plants here and make the power for Los Angeles and Phoenix.' I think a lot of research has shown that they may very well affect our health and the health of our children."

Bernard Steigerwald, EPA's Deputy Assistant Administrator for Air Quality Planning and Standards:

"The control of air pollution is a tough job that involves a long chain of complicated, technical information and regulatory decisions. We've talked principally about the health effects of air pollution that form the target. This target comes out specifically as an air quality standard which is the goal for air pollution throughout the country.

"At the other end of the chain is the control of air pollution. In order to meet that goal, we have here a research sulfur dioxide scrubber. The one that we have here is about 1/1000 as large as it must be out in the field. It can do an effective job of taking sulfur dioxide out of the exhaust gases and is a key feature in meeting the air quality standard for sulfur dioxide in most major metropolitan areas.

"The problem of air pollution in this country has changed a lot over the past several decades. Air pollution was thought of as black smoke from industrial smoke stacks. That generally is no longer our major problem. What we have today is much more subtle and in many ways much more difficult to control. Just because we can't see something coming from a stack does not mean that it's not making a significant contribution to the air pollution problem."

Brian Ketcham, Vice President and Staff Engineer, Citizens for Clean Air:

"When we think of air pollution we normally think of cars, and for good reasons. Cars and trucks produce between 70 and 100 percent of the carbon monoxide emitted into our urban centers. Cars and trucks produce hydrocarbons and oxides of nitrogen as well. Motor vehicles contribute as much as 50 percent to the oxidant problem in our urban centers. The internal combustion engine, as designed, uncontrolled, is a fairly dirty engine. Catalytic converters are one possible solution to this problem. They've been installed in 1975 model automobiles and will be installed in vehicles in the future. It does a fairly good job in cleaning up hydrocarbons and carbon monoxide, but requires a good deal of consumer maintenance . . . to make sure that it does work effectively. It does not, however, control oxides of nitrogen or the various particulates emitted from a passenger car.

"Despite the use of catalytic converters on today's cars and the potential use of alternative power plants in the future, there's a real question of whether we can really clean up automotive air pollution in our urban centers. There are just so many cars and trucks operating on our streets that it's virtually impossible to meet healthy air quality levels within the foreseeable future without reducing vehicle use. The real solutions are to minimize the amount of wasteful travel. Unnecessary travel today, for example, consumes virtually 40 percent of the Nation's energy budget. The Environmental Protection Agency has promulgated a number of plans for close to 30 urban centers in which they have proposed reducing vehicle use, substituting alternatives such as car pooling, dial-a-bus, and a vast increase in the use of public transit services. These are essential if we are to ever reach healthy levels of air in our urban centers."

Dr. Carl Shy, Professor of Environmental Medicine & Director, Environmental Studies Institute, University of North Carolina:

"Are the air quality standards that now exist too strict? You've probably seen ads in a paper making these claims that we're paying an unusual cost, a very extreme cost, for achieving clean air and that we don't have to

have such clean air to preserve human health.

"The fact of it all is that people who are concerned about human health and who have studied air pollution on health do not feel that the air quality standards are too strict. Those standards were set with a relatively small margin of safety below the level at which adverse health effects first occur. They have maybe a one- or two-fold margin of safety below those levels that affect human health. For other standards, such as substances in food or carcinogens or radiation, we set as large as 10- to 100-fold safety standards below the level of adverse health effects. So I don't think that the standards are anywhere too strict, even though those claims have been made."

Dr. Stanley Rakow, Medical Director, Los Angeles Lung Association:

"We still get flak about 'How do you know that air pollution is really responsible for all these disease states that you talk about?' Admittedly, when you are dealing with a chronic illness such as emphysema or chronic bronchitis, where there are multiple causes, it's hard to say air pollution is responsible for 18 percent of this man's disability.

"The system sort of goes back in public health annals to typhoid and its control. It took 40 years for the proof of the typhoid bacillus and how it got transmitted to people to be established. But some prudent man in England took the handle off the pump that was putting out the contaminated water, 40 years earlier, because of the association. People drank from that well and they got typhoid fever.

"Well, that kind of prudent judgment has to be applied in terms of air pollution today. Those of us in medical science feel that there is a clear association between community air pollution and this complex of diseases, and that we really can't afford to wait for 40 years of point-by-point matching of challenge with disease to do something about it. Things will be too late by then."

Dr. Bertram Carnow, Professor of Environmental Medicine, University of Illinois Medical Center:

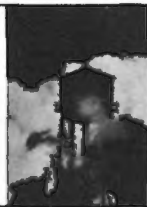
"If one wants to look at the cost of controlling environment and compare this to the real cost to people, one has to see that this is a very small cost.

The cost of dying is expensive. The cost of medical care is the biggest expense in this society, almost \$80 billion. The loss from work, a billion days a year because of acute respiratory illness, is a great cost. People with emphysema are generally people who don't work, so that their health costs are burdens on all of society. These people enter hospitals twice as often as other people and they stay there twice as long. This is a cost for all of us. Chronic lung disease is the second highest cause of . . . disability in people under the age of 65. This is more than \$100 million a year. This is a tremendous cost. So to make comparisons is ridiculous. We have to clean up the air. We have to create a viable environment for all of our people. We cannot tell millions of people that they cannot live in the cities, that they have to run away.

"The big question we have to answer now is what will it do over 70 years? What will it do to young children who have just been born? We don't know the answer, because we can't devise experiments that will give us such a 70-year answer. So if we err at all, it must be on the side of caution in order to protect future generations.

"And when I say future generations, I mean that literally, because one of the bad pollutants, ozone for example, has been shown to fracture chromosomes, and this is what may lead to not only abnormal growth like cancer but possibly even to abnormal births.

"What has been happening, is that we view the air and the water as free sewers. They are not a free sewer. The environment will not tolerate continuous exploitation. At a certain point it will tolerate *no more*, and at that point we are going to have to come to grips with it and come to some accord with the environment . . . if we are going to build a better life that all of us really want." □



The quality of the Nation's air continues to improve, EPA told Congress last month, but much work remains to be done before the goals set under the Clean Air Act are attained.

In its annual report to the national legislature for 1975, the Agency noted:

- Continued reductions in the year-round average levels of sulfur and particulates (smoke and soot) in the air.

- Approved plans in all States and territories to implement the Act.

- Start of nearly 600 enforcement actions against industrial polluters, more legal actions than in the three previous years combined.

- Inspection of more than 18,000 gasoline service stations to see that they were selling unleaded fuel.

- Successful defense of Agency actions in Federal courts.

- Increased research in the health effects of air pollution and further development of pollution control methods.

Deadline

May 31, 1975, was the target date set for attaining air quality judged necessary to protect public health.

The deadline passed a year ago with many of the goals unmet.

The best attainment record for the air quality standards was with sulfur dioxide, the report said. Of the 247 Air Quality Control Regions, for which State monitoring stations gather data and report to EPA, 212, or 86 percent, are expected to meet the primary standards for sulfur dioxide when all the figures are in for 1975.

The standard for particulates—smoke, soot, and invisible bits of solid and liquid matter—is likely to be met by 115 air quality regions, or 47 percent.

Each of these standards is defined as not more than a certain average value over a full year, plus a higher, 24-hour value that can occur only once during the year.

Attainment is lagging for two other pollutants: carbon monoxide and photochemical oxidants. Their principal source is auto exhaust, and their re-

duction depends mainly on EPA's auto emission control efforts. As pollution-controlled cars replace old ones on the road these pollutants are expected to decline. Steps in applying pollution-control regulations for new cars have been delayed three times for technical and economic reasons.

The report notes improvements in carbon monoxide levels in urban areas in California, New Jersey, and New York, and in Washington, D.C. The 8-hour standard is still exceeded, but less frequently.

Oxidant levels have decreased in San Francisco and Los Angeles, and research has shown that oxidants—the principal components of smog—are not confined to cities, but travel with prevailing winds into rural and wilderness areas.

The fifth ambient standard is for nitrogen oxides, another smog component, for which the measurement methods were found in 1973 to give falsely high readings. (A better, more reliable method was officially proposed by EPA in March after two years of testing.)

All 55 States and Territories have submitted plans for carrying out the Clean Air Act in their jurisdictions. A majority have been approved by EPA, and in all cases where deficiencies were found, the Agency has adopted rules to correct the deficiencies, as it is entitled to do under the Act.

With a few exceptions (for instance, sulfur emissions in Ohio) all States now have fully enforceable emission limits on stationary-source polluters.

During the year nearly 600 enforcement actions were initiated by EPA against such stationary sources, mostly industrial plants, bringing the total number of such actions to about 1,000 since 1972.

About 20,000 "major" sources have been identified, and 82 percent of them are now complying with emission limits or are on schedules that will bring them into compliance at agreed-upon dates.

EPA inspectors visited approximately 18,500 service stations during the year to check the availability of unleaded gasoline needed by new cars

equipped with catalytic converters to control exhaust pollution. Of about 15,000 samples taken from "no-lead" pumps, only 160 were found to be contaminated with lead. The Agency collected about \$31,000 in penalties.

Court Decisions

The Supreme Court upheld EPA's policy on granting "variances" with a minimum of red tape. These are usually extensions of time for a polluter to attain compliance with State regulations. The Court agreed with the Agency that when individual variances do not directly affect air quality standards they may be treated as revisions of a State's implementation plan, a relatively simple procedure.

Federal Circuit Court decisions in 1975 upheld EPA on three important issues:

(1) Tall smokestacks and "intermittent controls" for power plants and industries. These may not be used to meet emission limits, the Court ruled, unless continuous controls, like stack-gas scrubbers, are shown to be unavailable.

(2) Performance standards for new plants. In the first decision of its kind, the Court supported EPA regulations on cement kilns and the technical and economic analysis on which the rules were based.

(3) The right for Federal and State enforcement actions to be brought against a polluter at the same time.

The 171-page report, "Progress in the Prevention and Control of Air Pollution in 1975," is available, while the limited supply lasts, from the Information Center, PM-215, EPA, Washington, D.C. 20460. □



While many severe pollution problems remain, EPA has reported to Congress that significant improvements have been made in the condition of the Nation's waterways.

These conclusions are contained in EPA's 1975 National Water Quality Inventory Report. The report is based on information from the Agency's own studies and from information supplied by the 50 States and six other jurisdictions.

Most of the States which described water quality trends reported that conditions have improved in many waterways such as Lake Erie, the Detroit River, and San Diego Bay as a result of improved sewage treatment facilities and of controls on industrial waste discharges.

The report includes the first water quality assessments made by the States to comply with a requirement in the Federal Water Pollution Control Act. The assessments describe current water quality conditions, the effects of existing water pollution control programs, and the expected costs and benefits of current and proposed future programs.

Twenty-three of the 32 States which provided an over-all evaluation reported that while difficult pollution problems persist, "most of their waters were of good quality or already met the 1983 goals.

"The (EPA) 1974 report concluded that oxygen demanding loads and coliform bacteria levels were improving, even though significant problems did remain. The report also concluded that nutrient levels were increasing across the country. The 1975 report shows that the States in general agree with those conclusions, although several report improvements in nutrient levels. In addition, some States noted improvements in the levels of certain harmful chemicals from industrial wastes."

A review of the State reports leads to the following general conclusions for the major pollutants:

- Levels of harmful substances such as heavy metals and various chemical compounds have improved in some areas as a result of municipal and industrial waste treatment.

However, significant problems from heavy metals and harmful chemicals still exist, primarily in the industrial States in the Northeast and around the Great Lakes. Also, several central and southern States report problems from pesticides.

- Some western and southern States have reported increases in temperature and turbidity from stream modifications for flood control and irrigation.

- Most States report high levels of phosphorus and nitrogen which speed aging of lakes. In addition, the nutrient measurements were the only ones for which a significant number of States report worsening trends, although a larger number do cite improvements.

- Mining areas across the country reported problems with acid mine drainage. High salinity levels from various sources were also reported for many areas.

- Many States noted improvements in dissolved oxygen levels over the last five years, although almost all States did report that their water quality standards for dissolved oxygen were violated in some areas.

- Almost all States also listed health hazards as indicated by high coliform bacteria counts as a significant problem. Excess coliform bacteria levels caused by municipal discharges have been reduced in many States following installation of adequate treatment facilities.

All of the States report at least one type of water pollution within their borders, and most of them have problems with several different pollutants.

The most widely discussed problems were low dissolved oxygen levels (46 of 52 reports), health hazards from excessive coliform bacteria counts (45 of 52 reports), and high nutrient concentrations (43 of 52 reports). Other widespread pollution conditions may exist, but would not be noted by as many States because they were not as widely monitored.

- The northeastern and Great Lakes States report that their problems with low dissolved oxygen, high nutrient concentrations, and excess coliform bacteria are primarily due to

municipal and industrial sources, including urban runoff. The central and southwestern States generally identified sources such as agricultural runoff as the major causes of these problems.

- The central and southwestern States identified turbidity and salinity as particular problems, while industrial States around the Great Lakes reported problems from chemical wastes.

- Waters in several areas of the country were of poor quality due to natural conditions. Many central and southwestern States report high background levels of salinity and turbidity, while several southern States describe low dissolved oxygen levels due to swamp conditions.

The States generally agreed on the need for increased emphasis to control both urban and rural runoff, the primary concerns for most States which expected some of their waters would not attain the 1983 goals of the 1972 Act.

Most States provide estimates for the costs of municipal wastewater treatment, and 13 of them also estimate industrial control costs. Ten of the 13 States estimating industrial costs reported those costs to be less than 25 percent of their municipal treatment costs.

Mining areas across the country report pollution problems arising from acid mine drainage. Several western States, among them Arizona, Colorado and Montana, report heavy metal concentrations in their waterways due to mining operations.

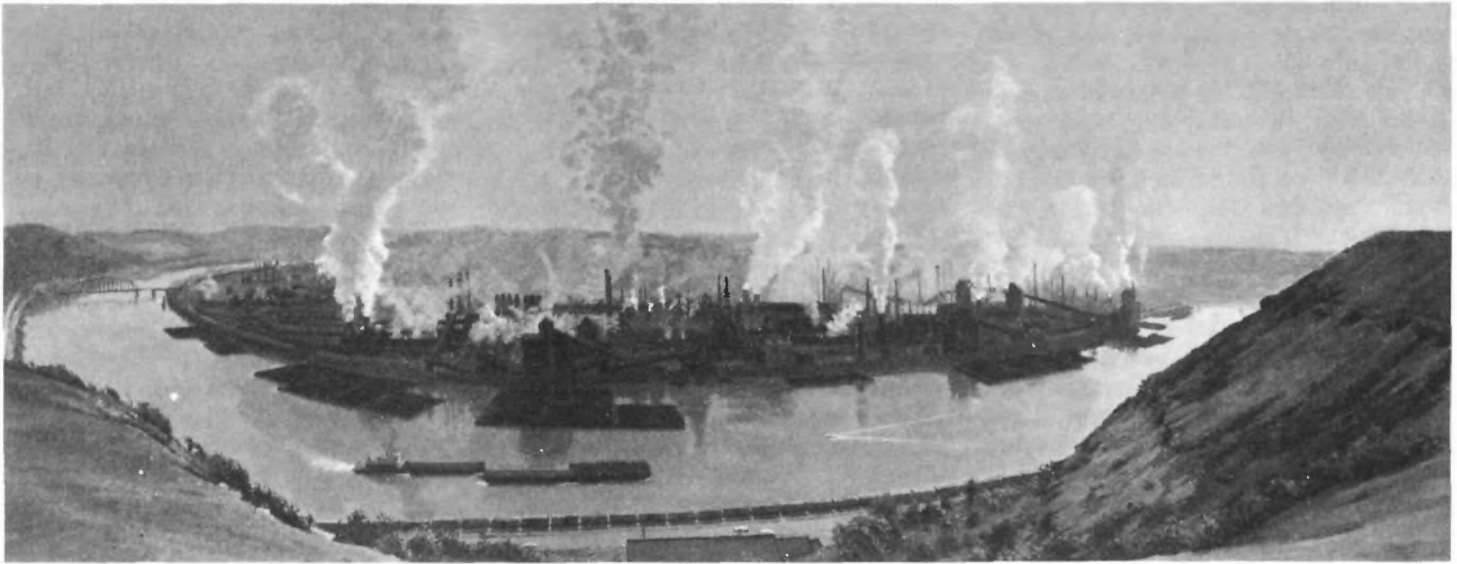
The results from EPA's National Water Quality Surveillance System, a nationwide network of 188 water monitoring stations, indicate that high levels of bacteria and nutrients are strongly related to municipal and industrial activity. Farming, with its extensive use of fertilizers, has contributed to high nutrient levels in many waterways.

Copies of the Water Quality Inventory are available from: Environmental Protection Agency, Office of Water Programs, Water Quality Analysis Branch (WH-553), Washington, D.C., 20460. □

THE AMERICAN SCENE

These photos are of paintings in "America 1976," an art show depicting the activities of the Department of the Interior in conservation of natural resources. The exhibition which includes the work of forty-five American artists of regional and national prominence

opened at the Corcoran Gallery of Art in Washington and is now beginning a tour of major city museums around the United States. The stunning show was initiated by John DeWitt, director of visual arts programs for the Department of the Interior.



The Coke Works at Clairton, Pa., by Rackstraw Downes. This scene on the Monongahela River near Pittsburgh shows the largest "slot-oven" plant in the world. Here coal is converted to coke for the production of steel and chemicals.





Agua Caliente Nova by Robert Bechtle. In the distance is Palm Canyon in the Reservation of the Agua Caliente Band of Mission Indians near Palm Springs, Calif. In the foreground are evidences of civilization through which much of nature must now be viewed.



The Ellis River in Pinkham Notch by Robert Jordan. A view of the river as seen from the Appalachian National Scenic Trail in New Hampshire.



The Final Redwoods by John Button. These are the coast redwoods, *Sequoia sempervirens*, the tallest of all trees which now grow as a natural forest only in a narrow strip along the northern California coast and in southernmost Oregon.

◁ Continental Divide by Ben Schonzeit. Sweeping views of high mountain slopes in Colorado.

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Andrew J. McErlean



William Gillespie



Clifford V. Smith, Jr.

Andrew J. McErlean, Director of the Ecological Processes and Effects Division, Office of Research and Development, has been appointed Associate Deputy Assistant Administrator for Health and Ecological Effects, reporting to Dr. Roy Albert.

Dr. McErlean, 44, joined EPA in 1972 as Senior Staff Biologist in the Office of Enforcement and General Counsel and has been with the Office of Research and Development since 1974.

He is a native of Rockaway Beach, N.Y., and served four years in the Marine Corps before attending Adelphi University, Garden City, N.Y., where he earned bachelor's and master's degrees in biology. He then worked four years as a research assistant at the University of Maryland's Department of Environmental Research and won a Public Health Service fellowship for continued study there. The University awarded him a Ph.D. in zoology in 1969. He was project coordinator for the University's Chesapeake Research Consortium for two years before joining EPA.

Dr. McErlean is a member of the American Institute of Fishery Research Biologists, member and past president of the Atlantic Estuarine Research Society, and member and former vice president of the Estuarine Research Foundation.

He is married to the former Toby Schneidman of New York City. They have four children.

William Gillespie has been appointed Director of the Management Division, Region VI, Dallas, and will start his duties there some time this month. He has been Deputy Director of the Management and Organization Division, Office of Planning and Management, in Washington.

Mr. Gillespie, 35, grew up in Pottsville, Pa., and is a graduate of Pennsylvania State University. He began his Federal service 13 years ago with the Defense Supply Agency, and he has worked for the Department of the Navy and the Federal Water Quality Administration, one of EPA's predecessor agencies.

He has taken postgraduate studies in public administration at Drexel Institute, Philadelphia, and George Washington University, Washington.

Robert McDonald, Special Assistant to the Administrator, left the Agency on May 21 to go to the International Paper Co., New York City, as Assistant Vice President for Personnel.

Mr. McDonald came to EPA in September 1971 as Special Assistant in the Office of Planning and Management, and he served in that post until January 1973, when he joined Mr. Train's staff.

Charles A. Lincoln was recently appointed Chief of the Pesticides Branch for Region I, Boston. He formerly held the same position in Region V.

Dr. Lincoln is a native of Massachusetts and a graduate of the State university at Amherst. He earned his master's and doctor's degrees from the N.Y. State College of Forestry, Syracuse, N.Y.

Clifford V. Smith, Jr., EPA's Region X Administrator, has resigned to take an executive post with the Bechtel Corporation, an engineering construction company, in San Francisco.

Dr. Smith had been appointed Regional Administrator in August, 1974, after more than 20 years of professional experience in the environmental engineering and management field. He had formerly served as Deputy Regional Administrator in EPA's Region I office in Boston. In 1973, EPA gave him its highest award, the Gold Medal for Exceptional Service.

Diana Dutton has been named Regional Counsel for Region VI, Dallas. She is the third woman to hold such a post in EPA.

Ms. Dutton, 31, is a native of Sherman, Texas, and earned a B.S. in international affairs at Georgetown University's School of Foreign Service in Washington before studying law at the University of Texas, Austin. She was associate editor of the Texas Law Review and won her doctorate in jurisprudence in 1971.

She joined EPA that year and has served as staff attorney in the Region VI Enforcement Division and, since 1973, as Assistant Regional Counsel. She was coordinator of the Federal Women's Program for Region VI for two years and has headed the Women's Committee of the Dallas-Fort Worth Federal Executive Board since 1974. She was awarded EPA's Bronze Medal for Meritorious Service in 1973.

She is married to Tony Grindl.

OPLEPEOPLEPEOP



James M. Conlon



Douglas M. MacMillan



Helen Beggun

Robert V. Zener, EPA's General Counsel, is leaving the Agency to become a partner with the law firm of Pepper, Hamilton, and Scheetz of Philadelphia and Washington, D.C.

Mr. Zener has been EPA's principal legal advisor and head of the Office of General Counsel since January, 1975. He had served as Deputy General Counsel since April 1973, and he joined the Agency in March 1971 as Associate General Counsel for Water. Earlier he spent eight years at the Department of Justice where he was Assistant Chief of the Appellate Section of the Civil Division.

Administrator Train has announced his intention to appoint G. William Frick, now Deputy General Counsel, to the office of General Counsel.

George J. Putnicki, Deputy Administrator for Region VI, Dallas, was honored recently by the Department of Health, Education, and Welfare for his work in the resettling of Indochina war refugees at Fort Chaffee, Ark.

Working with EPA staff members and a team of U.S. Army personnel, Mr. Putnicki analyzed the environmental impact of the sudden addition of 28,000 persons at the Chaffee facility and developed plans to assure safe drinking water, sewage treatment, solid waste disposal, and control of disease. EPA provided monitoring equipment and training to Army personnel, and averted potentially disastrous environmental effects.

HEW Regional Administrator Stuart H. Clarke presented a citation to Mr. Putnicki at a special ceremony in Dallas April 20.

James M. Conlon has assumed a new post as Associate to Edwin L. Johnson, Deputy Assistant Administrator for Pesticide Programs, in Washington.

A Public Health Service Officer for 13 years, Mr. Conlon had been with EPA's Region V Office in Chicago since the Agency was founded, his last post there being Director of the Air and Hazardous Materials Division.

Born in Davenport, Iowa, 37 years ago, Mr. Conlon was brought up in Springfield, Ill., and earned a B.S. in chemistry at Illinois College, Jacksonville, in 1961. He worked for the Illinois Department of Public Health for three years before receiving his PHS commission. After an assignment with the Oklahoma State Health Department, Oklahoma City, he was sent to graduate school at the University of Oklahoma, where he won an M.S. of Engineering (Civil), and became a radiation specialist with the Bureau of Radiological Health in Washington.

In 1969 he was sent to the Regional Office in Chicago as Deputy Radiological Health Representative.

Mr. Conlon is married to the former Donna Ebel of Springfield, Ill. They have four daughters.

Douglas M. MacMillan has been appointed Director, Division of Management and Organization, by Alvin L. Alm, Assistant Administrator for Planning and Management.

Mr. MacMillan will assume his new duties this month following a long-term training assignment at Harvard University. He has been Director of Region I's Management Division since 1973.

A graduate of the University of Washington and holder of a law degree from Georgetown University, Mr. MacMillan is scheduled to receive a master's degree in public administration from Harvard this month.

He began Federal service in 1963 as a foreign service officer with the U.S. Information Agency, and he served with the Department of Health, Education, and Welfare and with the Office of Economic Opportunity before joining EPA's Region I Office in Boston in 1972.

Helen Beggun, formerly with the Program Analysis Division, Office of Resources Management, in Washington, has been appointed Chief of the Grants Administration Branch in Region II, New York City.

Ms. Beggun has had 10 years of Federal service, including six years with the Navy Department as a Program Analyst.

A native of Brooklyn, N.Y., she grew up in New Jersey and was graduated summa cum laude in 1964 from Fairleigh Dickinson University in Rutherford, N.J. She was a teacher in the Dade County, Fla., public schools for two years.

REGION VI ON PARADE

Region VI is a 560,550-square-mile piece of real estate comprising the states of Arkansas, Louisiana, New Mexico, Oklahoma, and Texas. It stretches east-west from the Mississippi River to Arizona and north-south from Kansas, Colorado, and Missouri to the Gulf of Mexico and the Mexican border.

Thousands of coves and inlets provide a meandering shoreline of 11,080 miles that includes some of the nation's most delightful ecological phenomena—and some of the most challenging environmental problems.

While the sheer magnitude of the Region implies big skies and room to roam, this spaciousness has been diminished recently by intensive industrial development and population growth. Pollution now touches remote areas as well as great cities like Houston, New Orleans, Little Rock, Oklahoma City, Albuquerque, and Dallas. It has pointed up anew the environmental dangers of offshore drilling and the necessity for preserving the quality of coastal waters as well as lakes, streams, and underground reservoirs.

It pinpointed trouble spots like the Houston Ship Channel and the lower Mississippi. It brought into focus the air pollution in Houston, San Antonio, Dallas-Fort Worth, and the possible need for oxidant controls for growing metropolitan regions.

Discussing his environmental goals, John C. White, Region VI Administrator, states: "It isn't enough to bring pollution to a stalemate. Pollution must be reduced to an acceptable level, then kept there. This shrinking process in Region VI is well under way. We regard the past year as a turning point in the critical environmental areas of ocean pollution, oil spill response, the permit program, construction grants, and increased participation by the public as well as State and local governments."

Region VI is particularly proud of its success in reducing the volume of toxic materials dumped into the Gulf of Mexico from 1,400,000 tons in 1973 to 140,000 tons in 1975—a 90 percent reduction. Shell Chemical Company, under a permit this year, is committed to finding an alternative to ocean

disposal by August 1, 1977.

Under a research permit from EPA, Shell burned tons of chlorinated hydrocarbons aboard the Dutch incinerator ship Vulcanus off the Texas coast with minimum impact on the environment. The company's application for a permit to conduct more incineration tests in the Gulf is pending.

Region VI includes four of the five largest oil producing States and the largest offshore production area. It has the largest network of refineries, petrochemical plants, and pipelines, plus 12 ports for ocean-going vessels and the prospect of four new super-tanker ports. All of these facilities create a high potential for spills of oil and hazardous substances. While spills on coastal waters are the responsibility of the U.S. Coast Guard, EPA serves as on-scene coordinator for all major inland oil spill cleanup operations. EPA monitors the cleanup operations and assumes full control if the spiller fails to take proper action. Since full implementation last year of the Region's Spill Prevention Control and Countermeasure Plans, major reported oil spills in the Region have declined by approximately 28 percent. Further improvement is expected as State agencies take more active roles in spill investigations.

A consortium of six oil companies plans to construct a \$350-million deep-water port for oil tankers off the Louisiana coast, about 20 miles south of Grand Isle. The port would be capable of unloading more than 1.4 million barrels of crude oil a day from tankers too big to use existing ports.

A prime goal in Region VI air pollution control is to assist State and local agencies in attaining and maintaining the national air quality standards. Our assistance has been both financial and technical. Funds in excess of \$4,500,000 were made available to the Region's five States either as direct grants or in consultant assistance. For both fiscal years 1975 and 1976, Region VI has worked closely with the States in program planning in setting goals and meeting objectives of the Clean Air Act. Progress is reviewed periodically, and problem areas are reviewed so that mid-course corrections can be made. Significant results of the program have been greater coordination among Federal, State and local program activities and the reduction or elimination of conflicting activities.

The State Implementation Plans re-



Downtown Dallas skyline with convention center in foreground.



Canoeing down the beautiful Illinois River in Oklahoma.

quired by the Clean Air Act continue to be the primary tool for achieving clean air. The plans originally submitted in 1972 are refined from time to time as new problems or solutions arise. Changes accomplished or proposed include (1) revisions to the Arkansas plan to control particulate emissions; (2) revisions to the Louisiana plan to control primary aluminum smelter particulate emissions; (3) revisions of the Oklahoma plan to control hydrocarbon emissions and sulfur dioxide emissions; (4) revisions to the New Mexico plan to control sulfur dioxide from smelters and carbon monoxide from mobile sources in the Albuquerque area; (5) and revisions to the Texas plan to control hydrocarbon emissions from both stationary and mobile sources of sulfur dioxide from smelters.

Plans being developed to control hydrocarbon emissions include many measures which would conserve petrochemical products (mostly gasoline) in addition to improving air quality. These measures include vapor recovery from gasoline and other petroleum compound storage tanks and transfer operations; voluntary inspection and maintenance of motor vehicles; also carpooling and incentives to use public transportation. As proposed for certain areas in Texas, these measures would save each year about 41 million gallons of gasoline, valued at about \$20 million, plus an additional 13 million gallons of other petroleum products worth about \$2 million.

For years the industry-lined Houston Ship Channel held the distinction of being one of the worst-polluted waterways in the world. Today this tidal channel, which brings ocean-going vessels into Houston, is undergoing a cleanup. The quality of the stream is so improved that Houston newspapers recently carried photographs of tarpon caught by fishermen near the junction of the Ship Channel and Vince's Bayou—an area where tarpon had not been seen in more than a quarter of a century. The Channel cleanup task is a joint effort. Dischargers accounting for about 85 percent of the Channel's pollution load are under permit and obligated to complete abatement facilities by July of next year.

Another trouble spot is the lower Mississippi, source of drinking water for New Orleans. Extensive research is being conducted to determine the full extent of chemical pollution and its possible impact on public health.

The Edwards underground reservoir, which sprawls for 175 miles across several counties in south central Texas, is a geological phenomenon which supplies drinking water for the City of San Antonio, five large military installations, 16 small towns and cities, and hundreds of farms and ranches. Under the Safe Drinking Water Act, EPA Administrator Russell E. Train recently designated the aquifer as the sole or principal drinking water source for the area, thus bringing it under limited protection by denying Federal financial assistance to any project that could pollute the

reservoir. Although the issue is a controversial one, with developers and environmentalists on opposing sides, the decision is the first of its kind and may become a precedent for other decisions involving underground water supplies.

All around the Region the tempo of pollution control is increasing—and with some notable results. In the fiscal year ending June 30, the Region expects to have awarded \$245 million in grants to more than 600 towns, cities, and water districts for the construction of new and improved wastewater treatment facilities.

Section 208 of the Water Pollution Control Act Amendments calls upon local governments to find and implement solutions to common water quality management problems. It calls for EPA grants to help local governments cover their planning costs. Areas which have received grants and have begun planning efforts include Tulsa and Oklahoma City in Oklahoma and Dallas-Fort Worth, Houston, San Antonio, Beaumont-Port Arthur, Corpus Christi, McAllen-Brownsville, and Texarkana in Texas.

Town meetings, public hearings, and widespread publicity have been used to develop maximum public support and participation for the 208 program and all other Region VI activities.

The issuance of discharge permits continues, although more attention is being given to compliance monitoring. State assistance in the drafting of permits has accelerated the program and strengthened enforcement efforts. □



Majestic mountain view is from Emory Pass in southwestern New Mexico, near the mining town of Santa Rita.



A forested national park at Hot Springs, famous vacation resort and convention center.



The Great Southwest

By John F Bradford



The five States of Region VI, traditionally known as "the Great Southwest," are home to nearly 25 million people whose outdoor pursuits range from muskrat trapping in Louisiana to elk hunting in New Mexico, from water skiing in Arkansas to bronc riding in Oklahoma and deep sea fishing off the Texas coast. Perhaps no geographical region of comparable size is more diversified in culture, history, resources, and economy.

Even their brief official slogans tell something of the heritage of these five States: Arkansas, "Land of Opportunity"; Louisiana, "Pelican State"; Oklahoma, "Sooner State"; New Mexico, "Land of Enchantment"; and Texas, "Lone Star State."

Some of the assets of Region VI are great oil- and gas-producing areas, a 764-mile coastline fringing the Gulf of Mexico, the Mississippi River and its vast estuary ecosystem, huge agricultural resources, major forest areas, the new Arkansas River waterway that brings ocean navigation into Tulsa, Okla., the Gulf Intracoastal Waterway; national and state forests, minerals, a major livestock industry, wildlife, sports and recreation.

Arkansas, population 2 million, has 18,500,000 acres of oak, hickory, gum cypress, and pine. Forest industries, including some of the nation's largest pulp and paper mills, have an annual payroll exceeding \$500 million. Cotton accounts for 48 percent of farm income. Arkansas mines lead the Nation in bauxite (aluminum ore) production. The State is second in rice and third in chicken production. Oil is the main mineral product, but natural gas and stone are highly important. The \$1.2-billion Arkansas River program involving navigation, flood control, and power developments, completed in 1971, provided a big boost to the State's economy.

Freshwater fishing, duck hunting in southeastern lowlands, and recreation areas in 21 state parks and three national forests attract many visitors to Arkansas. Reservoir recreation areas at Norfolk, Bull Shoals, Nimrod, and Dardanelle are the forerunners of additional facilities that will further popularize the State as a tourist attraction. There are 47 hot springs

in Hot Springs National Park, which is surrounded by the City of Hot Springs. A multimillion-dollar modern wastewater treatment plant partially funded by EPA will soon serve Hot Springs and the nearby Ouachita Basin lakes, removing a pollution threat of serious dimension to the lake community.

Louisiana, pushing a population of 4 million, blends a wealth of historic charm, rich natural resources, and giant modern industries. Fertile soil, huge mineral deposits, and over 7,000 miles of navigable waterways linking the State with the heart of the Nation are factors basic to the State's prosperity.

The immediate prospect of offshore deep-water ports, plus acceleration of offshore drilling for oil and gas, give promise of a whole new dimension in Louisiana's economy. Its strategic coastal position links the State with world-wide commerce.

Mardi Gras and other festivals, the beat of Dixieland jazz in the land of its origin, and nostalgic relics of the days of French and Spanish rule and the prosperous pre-Civil War era are among the attractions which bring an estimated \$710 million a year in tourist revenues. In total value of its mineral output, Louisiana is second only to Texas. Recent reports show it first in the value of its natural gas, sulfur, and salt production, and second in petroleum, much of which comes from offshore production. Louisiana marshes supply most of the Nation's muskrat fur. The annual catch of saltwater fish, shrimp, and oysters is valued at around \$80 million.

Louisiana Creoles are descendants of early French and Spanish settlers. About 4,000 Acadians, French settlers in Nova Scotia, Canada, were forcibly transported by the British to Louisiana in 1755 (an event commemorated by Longfellow's *Evangeline*) and settled near Bayou Teche. Their descendants, who became known as Cajuns, remain a strong influence in the culture of the Louisiana bayou country.

New Mexico, population nearly one million, is a land of contrasts, presenting remnants of old Indian and Spanish cultures along with nuclear and

space research centers, plus mountains over 13,000 feet high, ski slopes, and the great Carlsbad Caverns. Vast areas are made fertile by irrigation via dams and reservoirs on the Rio Grande, San Juan, Pecos, Canadian, Cimarron, Gila, and San Francisco rivers. National forests cover 13,231 square miles. Douglas fir, ponderosa pine, and spruce are cut for timber. Almost 34 percent of the land area is federally owned. While minerals are New Mexico's richest natural resource, manufacturing industries have grown and diversified. Principal lines are food products, chemicals, transportation and ordnance equipment, lumber, and electrical machinery. Its minerals include gold, silver, zinc, lead, and molybdenum.

Mining and increased industrialization today add both wealth and people along with pollution problems little known to New Mexico a decade ago. The nuclear power industry has focused new attention on New Mexico as the nation's leading source of uranium, bringing expansion of milling and mining operations, with attendant pollution hazards. Coal gasification gives promise of air pollution relief in regions beset by emission control problems. The demand for uranium rights has brought on extensive leasing by groups and agencies that include the Tennessee Valley Authority.

Spaniards seeking gold explored New Mexico in the early 16th century, and the area was labeled New Mexico on a 1583 map. The land remained under Spain until 1821, then under Mexico until U.S. troops occupied it in 1846. It became a State in 1912. Its capital, Santa Fe, is one of the oldest cities in the U.S.

New Mexico has four large Indian reservations and 19 inhabited pueblos, including Acoma, the "sky city" built atop a 357-foot mesa. There are pueblo ruins from 1000 A.D. in Chaco Canyon. The Indian, Mexican, and Anglo cultures blend harmoniously in a progressive relationship evident throughout the State.

Oklahoma, population now reaching toward 3 million, birthplace and home of the great humorist, Will Rogers, also is a leader in oil and gas production. Other minerals include helium,

John F. Bradford is a Region VI public information specialist.

gypsum, zinc, cement, coal, copper, and silver. Its fertile plains annually produce one of the Nation's largest wheat crops, also large crops of sorghum, peanuts, and soybeans. Total tourist revenues are estimated at more than \$500 million annually. Attractions, include 28 State parks, large lakes and reservoirs such as Eufala and Texoma, the Ouachita National Forest, Indian pow-wows, the National Cowboy Hall of Fame, the Western Heritage Center in Oklahoma City, the Will Rogers Memorial at Claremore, and the Woolaroc Museum near Bartlesville. Oklahoma, like Arkansas, is a beneficiary of the Arkansas River waterway, which gives Tulsa a "seaport."

Part of the Louisiana Purchase in 1803, Oklahoma was known as "Indian Territory" after it became the home of five civilized tribes—Cherokee, Choctaw, Chickasaw, Creek, and Seminole from 1828 to 1846. The land also was occupied by Comanche, Osage and other Plains Indians. As white settlers pressed west, land was opened for homesteading by "runs" and lotteries. A run was a race for land claims at a specific time. The first run took place April 22, 1889. The most famous was the run to the Cherokee Outlet in 1893. The territories were joined by Congress in the State of Oklahoma and admitted to the Union in 1907. Oklahoma's Indian population in 1970 was 98,468—the

largest of any State.

EPA's Robert S. Kerr Laboratory at Ada, stands as a monument to the late Oklahoma Senator.

Texas, population about 14 million, leads all other States in many categories, among them oil, cattle, sheep, and cotton. While these are basic to the Texas economy, manufacturing, as measured in terms of value added, makes a greater contribution than either mineral output or farm income. Second in size only to Alaska, Texas normally produces a third of the Nation's petroleum and is the leading producer of asphalt, graphite, natural gas liquids, and magnesium chloride. Louisiana and Texas are the leading producers of natural gas, and Texas ranks second in output of sulfur, salt, helium, and bromine. Recent figures give Texas a big lead in annual cattle production—15,350,000 head—exceeding the State's human population. Its well diversified agricultural industry makes the State a major producer of rice, timber, peanuts, pecans, sorghum, sweet potatoes, grapefruit, turkeys, peaches, and roses.

Tourists spend an estimated \$2 billion dollars annually in Texas. Seventy State parks, recreation areas and historic sites include the Big Bend and Guadalupe Mountain National Parks and the Fort Davis National Historic Site. There is also a national historic site, a national park and a state park marking the birthplace of former Pres-

ident Lyndon B. Johnson.

A phenomenon of Texas industrial growth has been the rise and expansion of a giant petrochemical industry along the Houston Ship Channel, a tidal gateway linking Houston with the Gulf of Mexico. Here a vast complex of industrial giants produces products used throughout the world and provides a payroll that is the backbone of the Houston economy. Cooperative efforts by Federal, State and local authorities and the industries themselves are being made to curb the extremely complex air and water pollution problems in the Channel area.

Thus, we see that Region VI is a geographical, economical, and cultural conglomerate which requires continuing strong pollution controls. In most parts of the Region, the air and water are getting cleaner, noise pollution is being diminished, and better systems for handling solid and hazardous wastes are being devised. Ocean dumping has been reduced; pollution from pesticides is growing less. Notwithstanding this progress, the Region faces some monumental environmental problems, not the least of which is hydrocarbon and sulfur dioxide pollution from automobiles in some of the larger cities.

Region VI is big and beautiful. It took muscle to develop its strength and productivity. It will take muscle to regain and preserve its environmental integrity. □

Region VI's Leadership Team



Elroy "Ray" Lozano,
Director, Air and Hazardous
Materials Division



John C. White,
Regional Administrator



J. Paul Comola, Assistant
Regional Administrator for
Congressional and Intergovernmental Relations



Myron Knudson, Director,
Surveillance and Analysis



Dr. Richard L. Hill,
Director, Water Division



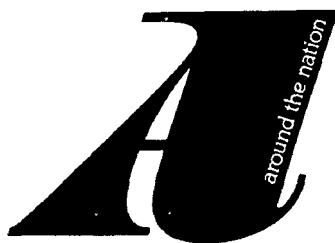
Diana Dutton,
Regional Counsel



George J. Putnicki, Deputy
Regional Administrator



Thomas Harrison, Director,
Enforcement Division



operate its two sewage treatment plants properly. The plants were designed to process 40 million gallons of wastewater per day. EPA inspectors found the plants discharging effluent into the Delaware River after inadequate treatment or, in some cases, no treatment at all. The U.S. Attorney is seeking the maximum penalty of \$10,000 per day of violation, which amounts to \$8,140,000.

high-sulfur fuels

Region II officials have opposed recent moves to approve the burning of high-sulfur fuels in New York City and southern New Jersey. At a hearing on the application of New York's Consolidated Edison Company for a variance to burn such fuel, Deputy Regional Administrator Eric Outwater said the claimed savings would be only 40 cents per month to the average household consumer and the utility would discharge an additional 50,000 tons of air pollutants annually. EPA also denounced as premature and illegal New Jersey's announced decision to allow 10 plants in the southern part of the State to burn high-sulfur fuel. The State's decision was made, Regional officials said, without EPA approval, which can be given only after technical studies, discussions and public hearings. The State has now agreed to comply with these procedures.



highway planning

The Federal Highway Administration's transportation plans for the Philadelphia-Trenton, Baltimore, and Washington, D.C., areas are inconsistent with air quality plans for these cities, according to Regional Administrator Daniel J. Snyder III. He has recommended that the FHA withdraw its certification of these plans and withhold funding of all highway projects associated with them. However, Mr. Snyder urged continued funding of mass transit projects in the three areas.

first application

Region III recently received its first "significant deterioration" application from an industrial plant. The Delmarva Power and Light Co. seeks a permit to build a new 400-megawatt coal-fired generating station at Indian River, Del. Regional officials are reviewing the application to assure that air quality in the area, already cleaner than average, will not suffer significant deterioration if the plant is built.



phosphate mine study

EPA will be the leading Federal agency in a comprehensive study of the environmental effects of phosphate strip mining and processing. The study was ordered recently by President Ford after an EPA report indicated that people living on land reclaimed after phosphate mining were six times more likely to contract lung cancer than people living elsewhere. The new study, in which the Department of Interior's Bureau of Mines will also take part, is independent of the earlier EPA investigation in Polk County in central Florida. There has been a moratorium on residential building on mined-over areas there since last October, when EPA Administrator Russell E. Train informed Florida Governor Reuben Askew of EPA's findings.



cuyahoga pollution

Although dramatic reductions have been made in some kinds of pollution in the Cuyahoga River at Cleveland, Ohio, many problems remain. A recent study by Region V officials noted reductions in floating oil, phenolic compounds, ammonia, and cyanide. Municipal and industrial wastewater treatment programs are expected to bring some improvement in dissolved



solar energy

Wilton, Maine, will build the first sewage treatment plant in New England using solar energy to heat the building and the sludge digesters. Methane gas from the digesters will also be used for additional heating and possibly to run an auxiliary electric generator. EPA has awarded Wilton a \$3-million grant for construction of the plant, pumping station, interceptor, sewer, and force main.

annual report due

Region I is putting the finishing touches on its second annual report, Environmental Quality in New England. The report, which will discuss air and water quality, drinking water supplies, and solid waste management in the six-State region, will be released next month.

earth day stamp

Region I's fourth Earth Day environmental stamp was recently issued in an edition of 250,000. Designed by Gene Parker of the Regional Office's graphics staff, the red, white, and blue stamp combines environmental and bicentennial themes.



camden sued

On behalf of Region II, the Justice Department has filed a civil suit against Camden, N.J., to force the city to

oxygen conditions in the river. However, the study pointed out, storm water runoff and oxygen demand from bottom-dwelling organisms will continue to deplete the river's oxygen, especially during summer low-flow periods.

impact statement

Region V officials will prepare an environmental impact statement for the sewage treatment plans of Columbus, Ohio. Such statements are usually ruled unnecessary by EPA in most construction grant applications, but when there are alternative facilities being considered and local requests for an environmental study, EPA makes it. The plans for metropolitan Columbus include many options: various methods of sludge treatment and disposal; size and location of interceptor sewer lines, especially in sparsely settled areas; degree of wastewater treatment needed to protect the quality of the Scioto River; ways of handling storm sewer overflows; and similar questions.



hot line service

"My lagoon is turning septic; what do I do?"

"The arms on my trickling filter won't turn; how do I get them unstuck?"

Charles Bardonner, Coordinator of the Wastewater Training Center at Kirkwood Community College, Kirkwood, Iowa, is ready for questions like these. He and his staff man a new toll-free telephone service for sewage treatment plant operators throughout the State.

Supported by an EPA grant, the hot line service started in April. Kirkwood College is a pioneer in wastewater treatment instruction and is the only center in the country that has its own treatment facility for on-the-job training.

waste exchange

The first two industrial waste exchanges in the United States were established recently at St. Louis, Mo., and Ames, Iowa. The exchanges publish and circulate lists of "wastes wanted" and "wastes available" among industries throughout their areas, bringing disposer and user together for mutual benefit.

The idea is based on the concept that one man's waste is another man's resource, and is copied from several waste "bourses" in Europe.



high altitude tests

Testing of 1977 cars for emission control performance at high altitudes has begun at Aurora, Colorado, near Denver. EPA regulations require that new cars meet emission standards when they are driven at 4,000-foot altitude as well as at their place of manufacture (Detroit is about 600 feet above sea level). Air is less dense at higher altitude, so an auto engine receives a richer fuel-air mixture, combustion is less complete, and emissions tend to be higher.

Regional Administrator John A. Green

said manufacturers may use design features, tuning specifications, or special devices to correct for high altitude effects and attain improved performance and mileage.

Under contract from EPA, Automotive Testing Laboratories, Inc., is doing the certification work, using about 100 prototype cars supplied by the manufacturers. Colorado is the highest State in the Union, with an average altitude of 6,800 feet.



san diego violation

Region IX has issued a Notice of Violation to the City of San Diego for failure to establish and complete a compliance schedule under the provisions of the wastewater discharge permit program. A permit was issued for San Diego's Point Loma Wastewater Treatment Plant on Nov. 4, 1974, by the California Regional Water Quality Board. The permit contained provisions calling for a conceptual plan, a final construction plan, feasibility study, and a compliance plan. No plans or reports have been received, according to Richard O'Connell, Regional Enforcement Director. "The City of San Diego has been cooperative on many issues," he said, "but we couldn't let this drag on!"



spray plan criticized

EPA has criticized Forest Service plans to spray insecticides on 300,000 acres of forest in Washington and Oregon to control the western spruce budworm. The Agency said the chemicals proposed might kill many organisms that are natural enemies of the budworm, thus diminishing the pest's natural controls and requiring increased chemical spraying in the future. EPA made the comments on a draft environmental impact statement prepared by the Forest Service and asked the Service to supply more information in its final statement. □



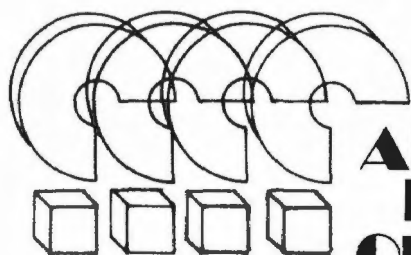
ocean dumping

Region VI Administrator John C. White has announced that EPA will probably deny permission for Houston, Texas, to dump sewage sludge into the ocean.

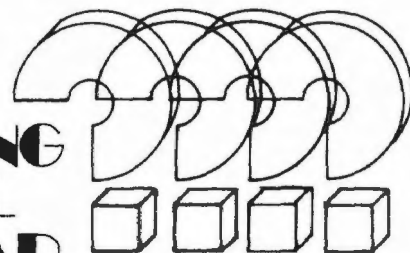
"Based on the facts available to me," Mr. White said, "I see alternatives, such as land disposal," that the city can use. The law and the regulations require a pressing need for ocean dumping before a permit can be granted, he said. A public hearing may be held before the final decision is made.

engineers' agreement

EPA has signed an agreement with the Army Corps of Engineers under which the Southwestern Division of the Corps will serve as engineering and technical advisors in Region VI's Construction Grants program. The Army engineers will inspect wastewater treatment projects at Step 3, the construction stage, to augment EPA's inspection staff.



ARE YOU PARTICIPATING IN THE BICENTENNIAL OBSERVANCES THIS YEAR



Mary Sarno, Program Analyst, Planning and Management Division, Region III, Philadelphia, Pa.

"I am actively engaged, as a volunteer, in the Bicentennial Women's Center here in Philadelphia. The Center, in part funded by the State and also with a \$50,000 grant from the Bicentennial Committee of Pennsylvania, has a dual purpose. One is to present, as dramatically as possible, the role that women have played in American history—a role sadly neglected in conventional history books. The other is to educate the public about the current issues that confront women."

"Except for its executive director, Carol Tracy, and her staff of five, the Center depends upon volunteer help to keep going. My enthusiasm is shared by some 20 other women from EPA's Region III office, who will be serving as information and reception aides and doing whatever else is necessary."

"This Center has widespread support from Philadelphians. There are over 50 women's organizations participating and we are a mixed and diverse group—whites and people of color, housewives, blue and white collar workers. We are located in the Pennwalt Building, 3rd and Parkway, near other Bicentennial buildings and about ten minutes by public transportation from Independence Square. I urge all EPA staff who may be coming to Philadelphia this year to visit us."

Charles Hajinian, Director of Management, Region VII, Kansas City, Mo.

"My wife and I have been very active in the Johnson County (Kansas) Bicentennial Festival Committee. The Committee staged a patriotic musical revue, 'Long May It Wave' that was professionally directed but locally cast. It was a success—it ran for three nights and made money."

"The Committee also published a commemorative book that highlighted the history of Johnson County through paintings and photographs. It sold well all over the County; soft-covered copies sold for \$1, hard-backed for \$10, and one copy, autographed by President Ford was sold at auction for \$180."

Vi Masco, Administrative Clerk, Systems Analysis Staff, Environmental Monitoring and Support Laboratory, Las Vegas, Nev.

"I am co-chairman of Lutheran Arts, Etc., an organization that staged a musical extravaganza, 'I Love America,' in celebration of the Bicentennial. Basically, Arts, Etc. is six Lutheran churches, but the group has broadened out into being a truly interdenomination activity. Whole families participated—perhaps proving that there isn't a generation gap after all."

"'I Love America' played at the Las Vegas Convention Center on April 20 and 21 and was a sell-out. It was repeated May 1 for a National Convention of Lutheran Women, and on that occasion it was given an award by the Las Vegas Bicentennial Committee."

Robert Hagen, Chief, Energy Program Branch, Region VIII, Denver, Colo.

"Early this spring, my family and I toured some of the major historic places being celebrated this Bicentennial Year. We flew into the District of Columbia, immediately rented a car, and drove to Williamsburg, Va. After viewing the colonial restorations there, we leisurely visited Monticello, Mt. Vernon, and Washington. Then it was on to Gettysburg, Philadelphia, Plymouth, Mass., and Boston—where we turned in the car and flew home."

"It was a good and worthwhile tour and it exposed my young children to the shape of American history."

Dr. David Otto, Research Psychologist, Clinical Studies Division, Health Effects Research Laboratory, Research Triangle Park, N.C.

"I am the chairman of the Orange County Bicentennial Bikeway Task Force which is set up under the Horizons Committee of the Chapel Hill Bicentennial Commission. We are designing a bikeway system that will connect the historic towns of Chapel Hill, Carrboro, and Hillsborough, once the colonial capital of North Carolina."

"The Bikeway will serve a variety of purposes. There will be commuter routes for cyclists to schools, the university, parks, shopping centers and residential areas. Some routes will be along existing roads, others will be new greenway trails along the small streams and creeks that literally lace this part of the State."



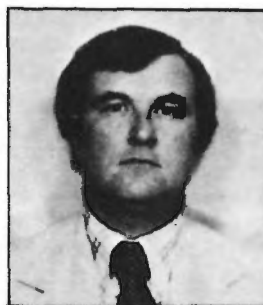
Mary Sarno



Charles Hajinian



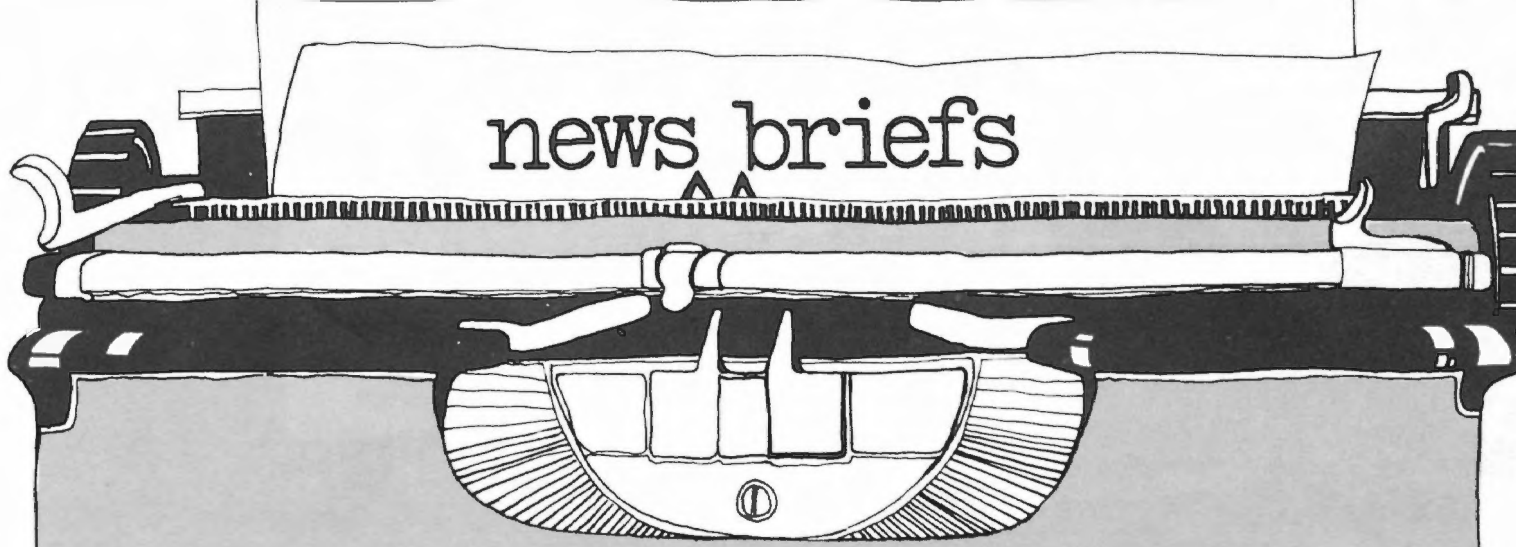
Vi Masco



Robert Hagen



Dr. David Otto



news briefs

TIGHTER SAFEGUARDS URGED FOR OFFSHORE OIL DRILLING

Drilling for oil and gas on the Atlantic and Pacific coasts should be done much more carefully than in the Gulf of Mexico, Associate Administrator Fitzhugh Green told an environmental group at Newport, R. I., recently. Methods developed for the Gulf 20 years ago are inadequate for the "environmentally fragile" areas of the East Coast, Alaska, and southern California, he said.

CANCER ASSESSMENT PROCEDURES

Interim cancer assessment procedures have been adopted by EPA for guidance in researching regulatory decisions where cancer risk is a key factor. The procedures implement a decision of October 10, 1975, that rigorous assessments of health risk and economic impact will be undertaken as part of the regulatory process.

TRAIN ENDORSES NEW STRIP MINE REGULATIONS

The Interior Department's new regulations for coal leasing on Federal lands have been endorsed by Administrator Russell Train. The new rules, he said, "will require restoration of strip-mined land to pre-mining conditions, or to conditions suitable for improved uses." He said the performance standards and the provisions for public participation throughout the leasing process constitute "a significant environmental achievement."

PUBLIC COMMENT SOUGHT ON ORGANIC CHEMICALS IN DRINKING WATER

The public will soon be asked for ideas and comments on ways to deal with the problem caused by contamination of drinking water supplies by organic chemicals. A document to be widely distributed by EPA will describe the problem, present a series of alternative regulatory approaches, and solicit additional data and public comment.



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EPA OPENS FLORIDA EXHIBIT



This is an artist's concept of the Bicentennial Exposition of Science and Technology at the Kennedy Space Center in Florida, where a major EPA exhibit has just opened.

A \$250,000 EPA exhibit on the role of science and technology in achieving a cleaner, more healthful environment opened last month as part of the Bicentennial Exposition on Science and Technology at the Kennedy Space Center, Cape Canaveral, Fla.

The EPA display is housed in one of 15 geodesic domes erected at the center near one of the world's largest structures, the Vehicle Assembly Building, where the Saturn rockets were prepared to send men to the moon.

The other domes contain exhibits sponsored by Federal agencies and private industry. An estimated two million people are expected to attend the exposition which will remain open through Labor Day.

Speaking of the purpose of the exposition, President Ford said, "We will show America what we've done and what we are going to do with our funds, the ingenuity of our scientists,

and the drive and foresight of our private sector."

The introductory area of the EPA pavilion emphasizes the Nation's rich legacy of natural resources and technological accomplishment. It also recognizes that careless use of technology and wasteful use of resources have contributed to the deterioration of those elements most basic to our existence—the air, land, and water.

The second exhibit area deals with the capabilities of science and technology to identify environmental problems. Included in this portion of the pavilion are a demonstration of some of the newest techniques for measuring air pollution and its effects on human health, research techniques used in identifying toxic and cancer-causing chemicals in the environment, and a report on EPA's National Eutrophication Survey, a study of the effect of pollutants on the Nation's fresh-water lakes.

The third section of the exhibit examines the degree to which science and technology may contribute to the solution of various environmental problems. Several displays illustrate resource recovery.

The summary area of the pavilion will contain a slide show which emphasizes the need for continued public concern for maintaining environmental quality to assure that the science and technology of the next 100 years will contribute to a cleaner, more healthful environment.

All of the exhibits will be relocated later at various EPA facilities.

Visitors will also be able to tour the space center as part of their visit. Huge rockets will be on display in the Vehicle Assembly Building. Visitors will also be able to visit the firing rooms where the countdowns for rockets being sent into space will be reenacted. □