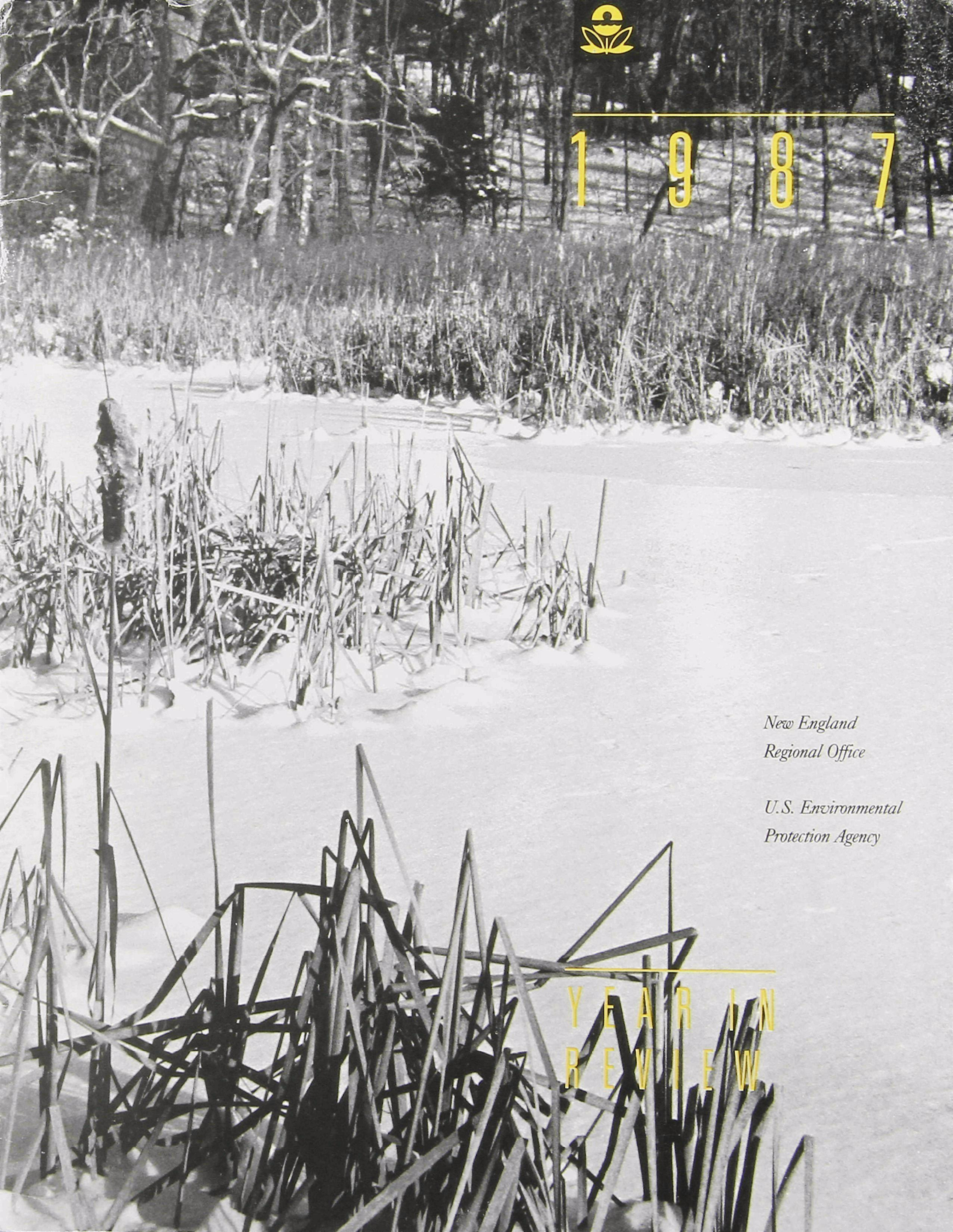

1987

New England
Regional Office

U.S. Environmental
Protection Agency

YEAR IN REVIEW

ABOUT US

The U.S. Environmental Protection Agency's New England Office (Region 1) is headquartered in Boston, Mass. It is one of ten regional offices across the nation charged by Congress to protect America's land, air and water.

Congress has instructed EPA, a federal agency based in Washington, D.C., to use national environmental laws to maintain a compatible balance between human activities and the ability of natural systems to support and nurture life.

Since the agency's creation in 1970, EPA's New England Office has defended the environment in the six New England states — Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.

For more information about EPA Region 1 and its programs, or for additional copies of "1987 in Review," contact the Office of Public Affairs, U.S. Environmental Protection Agency, J.F.K. Federal Building, Boston, Massachusetts 02203, Telephone (617) 565-3420.

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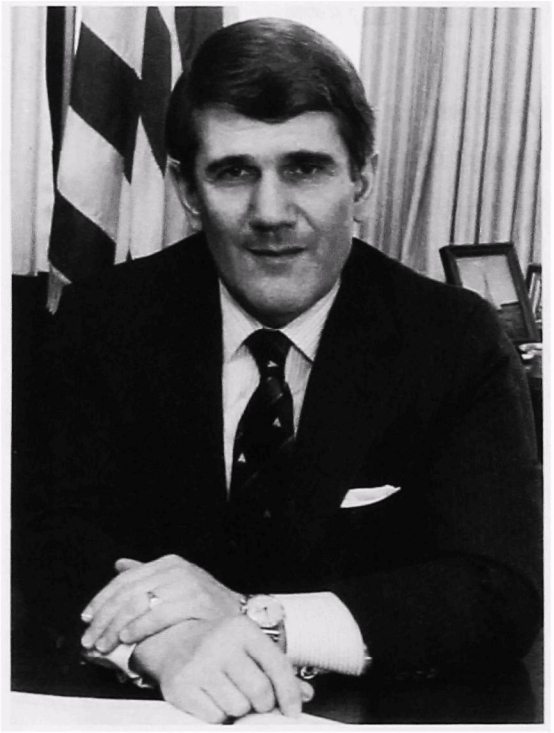
Dear Friends of the Environment



We, together, in 1987 took significant strides towards the protection of public health and our natural environment in New England. Some, but by no means all, of these successes are chronicled on the following pages.

Among our accomplishments there is none of more import than our continuing commitment to firm but fair enforcement of environmental laws. We once again filed more cases, issued more orders and collected more penalties than ever before. We have increased this pace annually since I became Regional Administrator. We have done so not to "run up numbers" but to file tough, meaningful cases which will have a deterrent effect on the regulated community.

I am particularly proud of our criminal enforcement efforts. In 1987 we referred nine criminal cases to the Department of Justice — more than had been referred by this office in the previous 16 years of its existence. Among the judgments rendered was the largest fine since EPA's criminal enforcement program began. Several criminal cases are targeted for referral in 1988. I trust that we have demonstrated that we have both the resources and the resolve to enforce environmental laws whenever illegal activity threatens the New England environment.

Looking ahead, the challenges confronting us are daunting. From a management perspective we need to view our environment in a holistic sense, not as merely a collection of discharge pipes. EPA was for all too long in the business of moving pollution around. We "cured" an air pollution problem by requiring the installation of scrubbers which in turn produced sludge, only to be disposed of in the water or on the land. Our real mission is to reduce risk to both human health and the natural environment. That can only happen if we view our environment holistically, as a living, breathing ecological system that sustains life itself.

We are rising to this challenge. Our programs for Narragansett and Buzzards Bays, Long Island Sound, the Cape Cod Aquifer and the Merrimack River Basin are examples of this broader thinking. The Merrimack River, once among the nation's ten filthiest, now supplies drinking water for one half million people. But the job on the Merrimack is just beginning. Its entire 5,000 square mile basin needs to be imaginatively and zealously guarded from all possible threats.

Two other challenges, which in my judgement will rank among the most confounding of the next decade, both relate directly to the "price of prosperity" and both will require major societal change. They are the need to reduce dramatically the proliferation of waste, both hazardous and general, and the need to sensibly manage the unplanned, unfettered growth which is consuming New England.

First is the issue of waste minimization. We as a country continue to produce waste at an unconscionable rate — some 300 million metric tons of hazardous waste per year and nearly a ton per year of garbage for every American. Obviously this practice can't continue. We pride ourselves on our technological ability, yet the Japanese recycle 50 percent of their waste while we recycle only 5 percent. Similarly American industry gives little thought

as to how its waste stream could be reduced or reused. Pieces of this puzzle lie within our individual grasp. For example, nearly all of Connecticut's landfills and 75 percent of Massachusetts' will be overflowing by 1990 and yet one-sixth of their capacity continues to be consumed by yard wastes which could be composted. Likewise, we as consumers fail to register even the mildest of protests when our retail goods continue to be encased in layers of unnecessary plastic.

Second is the issue of sensible, growth management. Unfortunately, government agencies in their zest to serve the public too often fail to set an appropriate example for private developers. The Department of Transportation in Maine proposes to spend $36 million to build a marine cargo terminal on pristine Sears Island despite evidence that there is little demand for it and, if there ever were, there are already industrialized lands next door that could easily accommodate such a facility.

In Rhode Island the Water Resources Board wants to spend almost $300 million to obliterate one thousand acres of irreplaceable wetlands — wetlands that purify and recharge the state's largely untapped underground water resources — to build a reservoir. Yet to date there has not been a comprehensive state-wide water audit of existing supplies and projected demand. What we do know is that 60 percent of the state's largest potable water supply is now used for industrial processes; that the existing rate structure encourages waste; and that damming the river's flow will require the construction of expensive, advanced-technology sewage treatment plants by downstream communities to adequately protect a diminished river.

What lurks behind these examples is an undemonstrated need for the project in question, and a pervasive resistance to seeking out practicable alternatives which cause less environmental harm. The environmental reviews and impact statements which are an accepted part of doing business are important because they are our mechanism for informed choice. We look to strike a balance between man's constant drive to reshape his environment and the desire to conserve and preserve our natural resources and the public health. It is a critical role, and it is one we carry out conscientiously and aggressively.

As our conservationist President Theodore Roosevelt wrote, "We behave well if we treat our natural resources as assets which we must turn over to the next generation increased, and not impaired, in value."

That is our challenge — yours and mine. More than 500 dedicated public servants at EPA's New England Office will continue to bring imagination and commitment to their jobs. With your help we will succeed in leaving New England a little better than we found it — a little cleaner, a little healthier, and a little more liveable. I look forward to continuing to work with you towards that goal, and sharing the very special sense of accomplishment that comes with its achievement.

Michael R. Deland
Regional Administrator

EPA Regional Administrator Michael Deland (left) and WCVB-TV's meteorologist, Dick Albert, presenting awards in EPA's ecology poem and poster contest.

1987 HIGHLIGHTS

water

The Cape Cod Aquifer Management Project (CCAMP) in Massachusetts, a two-year collaborative effort of federal, state, regional and local government agencies, developed a case study within the aquifer recharge area for a group of public supply wells in the Town of Barnstable. Field work led to an inventory of all potential contaminant sources, an expanded observation-well network and a refined water table map. From this information, CCAMP was able to make recommendations on how to better protect groundwater. In 1988 EPA will begin transferring CCAMP's many insights and water management tools to other New England states to aid in protecting other groundwater resources.

Charles Conway, an EPA environmental engineer, inspects wastewater treatment plant.

EPA designated a dredged material disposal site off the coast of Portland, Maine. Although this is a nationally designated site which may receive dredged material from any permittee, it will be used primarily for the disposal of dredged material from the Portland area.

The Buzzards Bay Project in Massachusetts announced the award of $300,000 to control coliform contamination and shellfish bed closures in Buttermilk Bay. The money will pay for two demonstration stormwater treatment/infiltration systems, public education and a cooperative beach cleanup program. The award followed a two-year study of the causes of coliform pollution in Buttermilk. EPA also funded studies and projects to control coastal pollution in Narragansett Bay in Rhode Island and Long Island Sound in Connecticut and New York.

EPA and the U.S. Army Corps of Engineers improved their protection of wetlands in 18 towns in York County, Maine through the Advance Identification of Sites. The wetlands are threatened by high growth rates. The federal agencies, in coordination with state and local officials, identified non-water dependent activities such as residential development as generally unsuitable to occur in the wetlands.

A consent agreement required that Boston Edison Company pay a penalty of $41,820 for violation of the use, marking, storage and disposal provisions of the PCB rules. In addition, Boston Edison agreed to remove all PCB-related equipment by Dec. 31, 1989, even though EPA regulations require removal of only a portion of the equipment. It is estimated that this will cost Boston Edison $15 million beyond the cost of meeting EPA requirements for PCB equipment phase out.

EPA employees cast a fish net off the EPA study ship, the OSV Anderson.

The Agency petitioned the Maine Board of Environmental Protection to reconsider a license it issued to Boise Cascade to construct two large power boilers. The modeling conducted for the proposed plant configuration did not demonstrate protection of the national ambient air quality standards.

EPA negotiated several major consent decrees to correct municipal sewage pollution.

New Bedford, Mass. $150,000 penalty. Must install secondary treatment.

Lynn, Mass. $95,000 penalty. Must install secondary treatment.

Webster and Dudley, Mass. $37,500 penalty. Must install advanced treatment.

Dover, N.H. $27,500 penalty. Must install secondary treatment.

In 1987 EPA received and processed 865 Freedom of Information requests. The written requests come from individuals, corporations, associations, public interest groups and local, state and foreign governments for records held or believed to be held by EPA.

EPA settled the case with National Gypsum, entering into a consent decree to bring its facility into compliance with applicable federal and state VOC air emission requirements, and to collect a $232,000 penalty. When the wallpaper manufacturer in Hatfield, Mass. is in full compliance, VOC emissions to the atmosphere will be reduced by 500 tons per year.

The State Acid Rain (STAR) projects are into their third year. EPA has cited the final reports by the New England states for their quality and timeliness. The New England projects range from a dynamic emissions trading system to conservation through coordination between public utilities commissions.

EPA allocated $156 million in grants in 1987 for wastewater treatment plants in New England, and made $210 million in payments to grantees who were awarded grants in 1987 and previous years.

State	Obligation	Outlays
	(millions)	(millions)
Conn.	$ 23	$ 47
Maine	$ 8	$ 25
Mass.	$ 64	$ 86
N.H.	$ 26	$ 27
R.I.	$ 15	$ 15
Vt.	$ 20	$ 10
Total	**$156**	**$210**

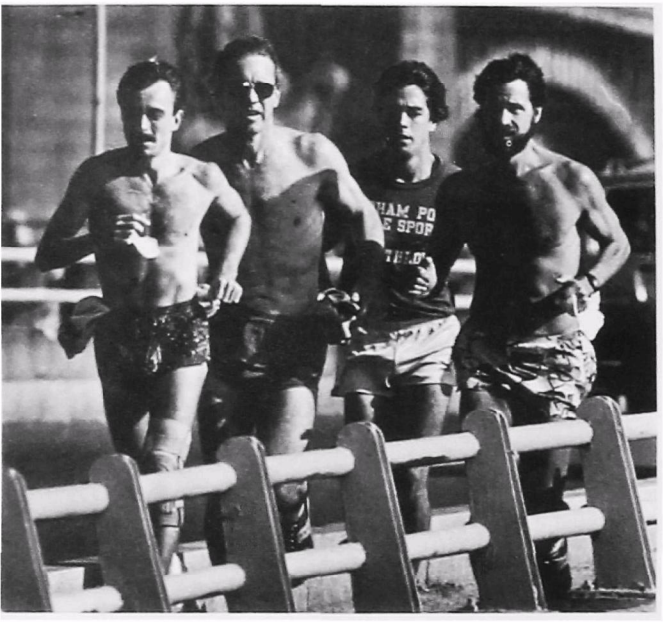
Rhode Island and EPA evaluated the movement of toxic pollutants from one environmental media to another in the Rhode Island Toxics Integration Project. For six weeks, officials monitored toxics in the air, water and sludge at a wastewater treatment plant, and assessed the risks from sludge incineration at two separate plants.

The Mobile Source Enforcement Program began a national pilot program issuing "traffic ticket" style citations to gas stations illegally using unleaded nozzles on leaded gasoline pumps. Violators have the choice of paying a $200 fine by check or risk facing prosecution and a stiffer penalty.

A deputy fire chief in Barnstable, MA inspects the installation of an underground storage tank.

In the Cannons Engineering Corp. Superfund case, 270 responsible parties committed to enter a settlement to contribute $10.9 million to the Cannons cleanup. The settlement is the first of its kind in the country under a new legal authority which allows EPA to reach early final settlements with responsible parties who contributed small amounts of waste to a Superfund site. The authority also allows EPA to take legal action against responsible parties who contributed large amounts of waste. The Cannons case involves Superfund cleanups at sites in Bridgewater and Plymouth, MA, and Londonderry and Nashua, N.H.

EPA employees jogging along the Charles River in Boston during their lunch-time break.



air

EPA filed a consent decree requiring 32 alleged generators of hazardous substances to perform a remedial action at the Beacon Heights Landfill Superfund site in Beacon Falls, Conn. The remedy includes construction of a cap over the site, a leachate collection system and a public water supply system for nearby residences. The remedy is expected to cost more than $20 million.

EPA moved approximately 140 of its Waste Division employees, roughly 25 percent of its New England workforce, from two separate Boston locations (the JFK Building and 150 Causeway St.) to 90 Canal St. in Boston. The move will improve productivity and efficiency among Waste Division employees who have been working in two separate locations for the past 2 1/2 years.

EPA worked with Connecticut and Rhode Island to conduct radon testing of more than 1,600 private homes to determine the extent of the radon problem. The results showed that approximately 20 percent of the homes tested had radon levels above EPA's suggested action level. It is estimated that radon, a naturally occurring radioactive gas, causes between 5,000 and 20,000 lung cancer deaths per year as a result of exposure to high levels in the indoor environment.

Region 1 has an aggressive affirmative action program, and is committed to sustaining a diverse workforce. In 1987, 58 percent of the regional increases were women and minority employees. To further promote gender and racial equality, the Region also developed a Needs Assessment Pilot Program which created numerous forums for dialogue concerning differences and commonalities among members of a diverse workforce.

EPA appealed to the Federal District Court in Connecticut for, and the Court issued, an order enjoining R.E.A.G. Corporation from violating National Emissions Standards for Hazardous Air Pollutants under the Clean Air Act. EPA has alleged that in apparent disregard for the serious health threat posed by asbestos, R.E.A.G., a building owner, and three renovation contractors tore down asbestos-containing ceilings and walls in a former theatre in downtown Bridgeport, Conn. EPA is seeking the statutory maximum penalty of $25,000 for each day of violation against the four parties.

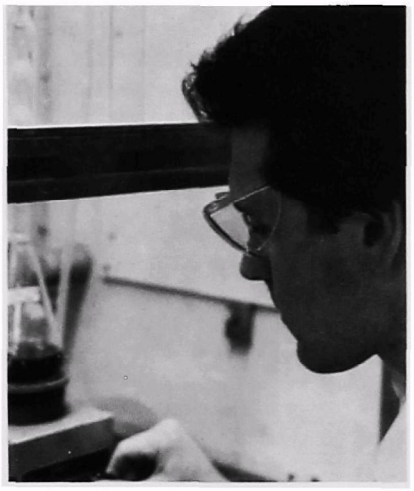
The Boston Harbor cleanup effort continued. EPA and the Massachusetts Water Resources Authority negotiated a comprehensive order regarding combined-sewer-overflow (CSO) control measures. EPA worked to help overcome obstacles to carrying out the previously entered court orders requiring the construction of a new treatment plant and the termination of sludge discharges. Also, EPA worked on the successful effort to obtain legislation to relocate the Deer Island prison to make way for the new treatment plant.

Pyramid Companies continued to challenge EPA's decision under the Clean Water Act 404(c) to prohibit the developer from filling the wetlands known as Sweeden's Swamp in Attleboro, Mass. in order to build a shopping mall. EPA vigorously defended its action and was upheld by the U.S. District Court.

EPA initiated a pilot project whereby specific priority regional needs, such as Boston Harbor, Merrimack River, wetlands mapping, lead-in-soil, etc., were recognized. Under this program, the regional administrator may for the first time divert resources from traditional program commitments to deal with regional problems.

Clara Chow,
EPA federal facilities
compliance coordinator.

Michael Dowling, an EPA inorganic chemist.



Eight percent of Region 1's total grant or cooperative agreement dollars in 1987 were awarded to women-owned or minority-owned businesses. Approximately $20 million went to minority-owned businesses and roughly $10.5 million went to women-owned businesses from the grant or agreement dollars totaling approximately $347 million. The effort represents EPA's commitment to address the challenge to increase contract dollars to minority and women businesses.

EPA expanded its public education activities through the new national President's Environmental Youth Awards program, the Boston Harbor slide/video show, the youth-related outreach in a pilot program in Boston to prevent childhood lead poisoning by removing lead-contaminated soil near older lead-painted houses, and the participation of EPA employees in An Adopt-a-School program. Other public-oriented activities included the Environmental Education Ecology Poem and Poster Contest, the annual environmental forum, a speaker's bureau, staffing display booths and exhibits, the publication of the *Directory of Environmental Groups in New England,* and the availability of environmental videotapes, films, pamphlets and brochures.

To ensure that hazardous waste is handled properly in New England, EPA in cooperation with Connecticut and Massachusetts environmental agencies developed a better system to collect information about the approximately 17,000 companies who generate, transport, treat, store or dispose of hazardous waste in New England. It is the responsibility of the states and EPA to gather data on hazardous waste handlers concerning compliance, enforcement, permitting, closing hazardous waste sites and corrective action to clean up sites. To strengthen the accuracy of the data, EPA improved the forms used to collect information, improved instruction manuals for reporting the data and trained state staff to better gather the information.

The Agency opened the Region 1 Training Institute which offered 10 to 20 training courses each month with a total of approximately 80 different courses. The Institute was designed to upgrade the skills of EPA employees and to primarily use EPA staff as instructors to teach the courses. The number of employees attending training sessions tripled as a result of the Institute, which offered courses ranging from administrative forms preparation to environmental risk assessment.

innovations

Marthena Higgins, EPA supply technician.

The Agency filed a complaint under the Clean Air Act against General Motors in Framingham, Mass. to collect $13 million in penalties for a 20-month period during which GM operated in violation of the federally approved Massachusetts ozone State Implementation Plan (SIP). The case is a central piece of a larger Region 1 initiative to address violations by sources emitting volatile organic compounds (VOC's) which are ozone precursors.

Region 1 developed a new program to work with a Massachusetts manufacturing company to clean up hazardous waste. The program may become a model for the nation. An EPA agreement with Monsanto's Indian Orchard Plant in Springfield, Mass. allows the company to conduct its own investigation of its hazardous waste problem with EPA and state oversight. The plant used nine lagoons, solid waste landfills and burning pits for approximately 45 years until 1980 to dispose of its hazardous waste. Currently, the company is revising its plan to identify the location, kinds and extent of its hazardous waste contamination in order to make decisions about its cleanup options. Monsanto has spent $1.5 million on this project in the past three years.

public affairs

An EPA news conference announcing the designation of Buzzards Bay as an estuary of national significance.

Recognizing that EPA informs the public about environmental issues through the media, the agency wrote and released to newspapers, radio and television approximately 175 news and feature stories in 1987. EPA officials regularly spoke with reporters from the *Boston Globe*, the *Boston Herald*, the *Boston Phoenix*, the *Hartford Courant*, the *Providence Journal*, the *New York Times*, the *Wall Street Journal*, *Time*, *Newsweek* and other major television, radio and newspaper outlets in New England. Also, top EPA administrators met with many New England editorial boards, general station managers and editorial directors.

To ensure that local citizens are involved in decisions about cleanup actions at the 59 major hazardous waste (Superfund) sites in New England, the Superfund Community Relations Program held 22 public meetings in site communities for citizens to learn, raise issues and ask questions about site developments. Public input and comment were solicited on the proposed cleanup options for several of the Region's sites which had reached the stage for the design of a final cleanup plan. Also, the Community Relations staff distributed 30 site specific fact sheets and more than 40 news releases to keep citizens apprised of Superfund actions.

EPA established a Superfund Financial Management Unit in June, 1987 to financially manage and recover the costs at Superfund cleanups. The unit is staffed by five employees. They are responsible for ensuring that all of Region 1's Superfund transactions are properly recorded in the Agency's accounting system and assembling the documentation necessary to support cost recovery actions at Superfund sites.

Celeste Philbrick, an EPA marine biologist.

EPA assisted the Penobscot Nation in Maine with undertaking an extensive analysis of the Nation's ability to play a larger role in the water quality management of the Penobscot River, which runs through the Nation's land. The Agency has a special responsibility to Native Americans, often called the "first environmentalists." In Region 1, an Indian Affairs Coordinator acts as a liaison between EPA's various programs and New England's six federally-recognized Indian Tribes.

The Agency instituted a national data management effort to identify and resolve data quality and communication issues and to assist selected states in making use of information tools and systems available both within EPA and the states. Maine was chosen as the regional pilot state to participate in this effort. Although the project is not complete, a high speed link between EPA's National Computer Center and the State of Maine has been installed, and the training and support for direct, online access to all major EPA databases has been completed.

The Region received 1,131 notifications of spills and responded to 120 of them (state agencies responded to the others). Of the 120 responses, 24 were major oil spills and seven were major chemical releases which required EPA funding. Two of the more notable responses included the location and removal of hundreds of drums containing hazardous materials which were swept away by severe spring flooding of the Kennebec and Androscoggin rivers in Maine and the Housatonic River in Connecticut, and a major release in Putnam, Conn. from a fire and explosion which required around-the-clock firefighting and removal efforts for several weeks and cleanup activities which will last for many months. Emergency actions were also begun to eliminate health threatening situations at six Superfund sites.

Biology Section personnel conducted more than 60 toxicity analyses and special studies. Along with the numerous benthic taxonomic studies, asbestos identification projects and Giardia and other microbiological analyses requests, the lab expanded its capabilities in the marine environment by developing in-house test cultures for marine invertebrates and marine algae.

Patricia Poole, EPA "Secretary of the Year."

Water Section personnel conducted 130 compliance studies to determine whether discharges complied with wastewater permits or pretreatment guidelines. Several special studies included participation in the National Dioxin Study of a bleach/kraft pulp and paper mills, an organic/metals toxicity study of Quincy Bay, lead-in-soil investigations, field sampling projects at Superfund and RCRA sites and major cooperative water quality studies on the Millers River with the State of Massachusetts, on the Ashuelot River with the State of New Hampshire and on the Pootatuck River with the State of Connecticut.

The Chemistry Section analyzed more than 5,000 samples for a variety of parameters ranging from BOD to semi-volatile organics to heavy metals to PCBs. More than 1,000 samples were for volatile organics for the Superfund program using gas chromatograph/mass spectrometer technology and 2,000 involved using X-ray fluorescence for the lead program.

The Air Section processed approximately 1.5 million air quality values from the criteria air monitoring networks throughout New England. Section personnel observed and/or evaluated 25 stack emission tests, evaluated the emissions from several hazardous waste incinerators and conducted air toxics monitoring activities at several Superfund sites. Also, the Air Section conducted workshops and simulations for the accidental release of air pollutants, established emergency planning districts in the New England states and reviewed and tested contingency plans for potential accidental releases.

Excavating toxic soil at the McKin hazardous waste site in Gray, ME.

hazardous waste

In one of the first such cases of its kind, EPA successfully identified the parties potentially responsible for the contamination at the Union Chemical Co. Inc. hazardous waste (Superfund) site in South Hope, Maine. The Agency signed a settlement agreement with 263 of the parties which requires them to study the nature and extent of contamination at the site, propose cleanup options and pay approximately $1.6 million in past EPA cleanup costs. Also, EPA filed a lawsuit against 11 parties who declined to join settlements with the Agency for past and future cleanup costs at the site. The suit was one of the first times EPA has gone after nonsettlers.

The $30 million cargo port proposed to be built at Sears Island in Penobscot Bay, Maine, received critical EPA reviews under the National Environmental Policy Act. The impact statement revealed no need for such an elaborate project and showed that a moderately scaled facility could be built by expanding a nearby port, thus preserving saltwater wetlands and a 900-acre island on the coast of Maine.

governmental

The John F. Kennedy Federal Building, EPA's New England Office.

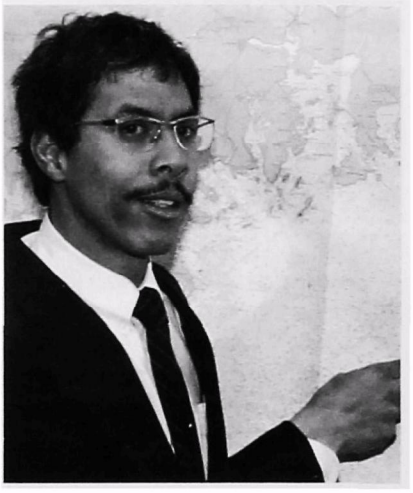
EPA staff walked the corridors of New England statehouses and worked with governors and key state legislators. Such activity in Massachusetts resulted in a plan to move a decrepit prison from Deer Island and make space for the new Boston Harbor sewage treatment plant. EPA staff also worked to pass laws like the one to stop the last major pollution of the Nashua River, which was the old MDC plant in Clinton, Mass. They also worked to defeat bills such as the one in Connecticut to repeal the automobile air pollution inspection and maintenance program.

EPA answered more than a thousand phone calls and hundreds of letters from senators and congressmen, visited them in their offices, and trudged with them through Superfund sites and old sewage treatment plants. The congressional delegation asked EPA how it is carrying out the laws that Congress passed and whether EPA needs new laws to finish the job of cleaning up the environment. EPA staff answered even the difficult questions and the New England congressional delegation gave bipartisan support to pollution control.

The Agency approved 34 plans to close hazardous waste lagoons, impoundments, landfills and waste piles in New England in 1987. Under Congressional acts, facilities which treat, store or dispose of hazardous waste must obtain permits to upgrade their waste sites or close them. There are approximately 135 such sites in New England. Thus far, more than 130 facilities have closed or are preparing to close. Of the 34 closure plans approved in 1987, 27 were in Connecticut. The Connecticut sites cover a total surface area of 820,000 sq. ft. and will cost industry more than $19 million to remove the waste, cap the waste, and/or monitor groundwater at the site.

As the National Environmental Policy Act (NEPA) turned 18 years old, Region 1 celebrated NEPA's birthday but worried about its health. Environmental reviews under NEPA continued to be the best way for citizens and EPA to get an early look at major projects. For example, EPA successfully urged that a federal energy agency prepare an environmental impact statement (its first) on the large "Ocean State" power plant proposed on the Rhode Island-Massachusetts border. EPA felt, and the company came to agree, that otherwise many issues would not have been opened up for fair review by the public and the plant's maybe-neighbors-to-be.

EPA worried though about NEPA's long-term health. As EPA saw other federal agencies such as the Corps of Engineers and the Federal Highway Administration becoming less willing to include the tough, necessary questions in their projects' impact statements, EPA objected to their new, watered-down regulations. Region 1 urged that EPA stand firm for the proposition that NEPA's mandate for full fair disclosure of impacts is and should be the law of the land.



Melvin P. Holmes, EPA marine ecologist.

The National Environmental Policy Act (NEPA) can save money as well as protect the natural environment. The Corps of Engineers had proposed to build a $2 million dam for flood control in the northern Vermont town of Richford. However, the environmental impact statement showed that most of the project's supposed "benefits" were to protect a 60-year-old bridge which needed protection more from its advancing years than from floods, and would need replacement anyway. EPA felt that the case had not been made for flooding a mile of the free- flowing Missisquoi River and objected to the project under NEPA.

Despite criticism from the Department of the Interior, EPA reasserted its obligation under the National Environmental Policy Act to critique plans to drill for oil in the George's Bank area of the Outer Continental Shelf. EPA stated that the proposed Lease Sale 96 should be deferred or cancelled because the risks posed by oil drilling were unreasonable and unnecessary in view of the exceptionally valuable biological resources on and near George's Bank, the relatively low oil and gas estimates for the North Atlantic, and the low level of industrial interest.

EPA selected remedies at three (Superfund) sites. The $15 million cleanup at Ottati and Goss in Kingston, N.H. will utilize an innovative aeration process for treating contaminated soils, incineration of PCB-contaminated soil and groundwater extraction and treatment. The $27 million cleanup at the Davis Liquid Waste Site in Smithfield, R.I. will consist of an alternate water line to homes affected by contamination, on-site incineration of soil and extraction and treatment of groundwater. The $20 million Resolve Inc. Site in Dartmouth, Mass. will use an innovative dechlorination process to treat PCB-contaminated soils and extraction and treatment of groundwater.

McKin Site

EPA completed one of the most successful soil treatments in New England at the seven-acre McKin hazardous waste (Superfund) site in Gray, Maine. Under EPA supervision, Canonie Environmental Services Corp. of Indiana dug up and treated more than 12,000 cubic yards of contaminated soil — roughly enough soil to cover a football field 10 feet deep. The company employed a technology to treat the soil known as soil aeration, a process that involves some of the same equipment found in portable asphalt batch plants.

The temporary aeration plant assembled right on the McKin site operated as follows: The soil entered the dryer unit of the plant where it was heated to 300 degrees Fahrenheit. It was mixed and aerated to allow the volatile contaminants to evaporate. The gases were then driven off and treated in a series of air pollution control devices. After lab analysis verified that the contaminated soil had been adequately treated, it was returned to the McKin site. The soil treatment took one year and cost approximately $4 million.

Before cleanup, McKin hazardous waste site in Gray, ME.

After cleanup. A freshly planted meadow grew where the McKin dump site had been.

The McKin site was used as a collection and transfer station for waste oil and other industrial wastes, handling between 100,000 and 200,000 gallons annually from 1972 to 1977. In some places the contaminants seeped into the earth 40 feet to groundwater, and polluted nearby private drinking water wells.

The soil cleanup at McKin is a good example of EPA's program to find more permanent on-site remedies at Superfund sites, rather than moving wastes from one site to a more secure site. And the soil aeration at McKin is a good example of the new technologies that industry and government are developing to treat massive volumes of contaminated soil. The emerging technologies are the latest thrust in the campaign to clean up hazardous waste in New England.

A DAY IN THE LIFE OF THE EPA

"1987 in Review" goes behind the scenes to look at a 24-hour interval at EPA. All of the following events actually occurred in 1987. Although they did not all take place on the same day, they do depict a fairly normal day of activity at EPA's New England Office. Only a few of EPA's employees can tell their stories here. But they are representative of the hundreds of committed EPA personnel whose dedication to quality government service has distinguished Region 1 as an office of integrity and action.

12am

Cleaning up wastes from midnight dumpers

Workers clean up a toxic spill from a trailer truck accident in Waterbury, CT.

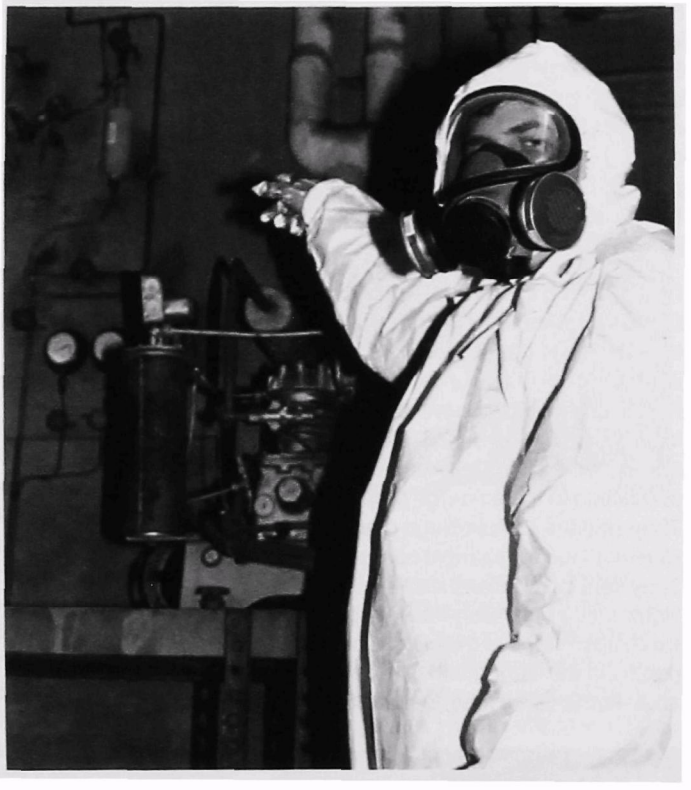
It was dark and cold when Bob Ankstitus, an on-scene coordinator with EPA's Oil and Hazardous Materials Section, arrived at a dead-end commercial street in Lowell, Mass. to clean up a dozen 55-gallon drums of hazardous waste. Lowell police, who had called Ankstitus at home about the spill on an emergency phone number, greeted him when he stepped out of his EPA response van. As Ankstitus inspected the site, he knew that the chemicals probably belonged to a midnight dumper who didn't want to pay $5,000 to $10,000 to properly dispose of the material.

Ankstitus proceeded cautiously with the cleanup because he didn't know what toxic wastes the drums may contain. A cleanup crew arrived and the workers lit up the area with spotlights. Of the 12 drums, 10 were standing and two were knocked over and leaking. Ankstitus and the workers suited up in full safety uniforms with self-contained breathing units. Their surveillance instruments indicated that the wastes were flammable, and so they used spark-proof tools to open the drums and take samples that were sent immediately to EPA's lab for analysis. They operated a tractor with a drum-grappler to upright the two leaking drums and to place all the drums into larger steel drums for added protection. Next, the workers mopped up the spilled wastes and cleaned up the contaminated area.

"The fatigue factor always sets in. Your body says you should be in bed by 11. But you have to fight it off and maintain your mental alertness while running a job. And you have to make sure the other personnel are working safely and alertly," Ankstitus said.

At 4 a.m. the crew completed the cleanup. By that time, a chemist at EPA's lab had produced initial lab results that showed the wastes contained heavy metals and solvents including xylene, toluene, ethyl benzene and tetrachloroethylene, which are degreasers and waste oil probably collected by the owner of a garage or auto body shop. Before returning home for a few hours sleep, Ankstitus asked the Lowell police to guard the drums until EPA could find a licensed incinerator to burn the wastes.

The Lowell incident is not an isolated event. According to Ankstitus, midnight dumpers push their wastes out of trucks approximately 20 to 50 times each year in New England.



Protecting workers from asbestos

8*am*

Donald Dahl, an environmental engineer and an asbestos inspector in EPA's Air Division, watched six workers remove asbestos from ducts and industrial ovens at a Central Massachusetts facility. He was there during an unannounced inspection because someone had called and complained that the work was not being performed according to EPA regulations. Dahl, who was wearing a disposable suit and a respirator similar to the safety uniforms worn by the workers, stood inside the asbestos demolition area sealed off with temporary clear plastic walls.

He saw dust clouds of asbestos rise in the air as an asbestos removal worker improperly stripped off dry asbestos and dropped it to the ground. Dahl also witnessed two workers illegally shoveling dry asbestos into a bag and noticed another pile of dry asbestos on the floor. The workers should have thoroughly soaked the asbestos with water before removing or handling it to prevent the asbestos fibers from becoming airborne. Airborne asbestos, which is invisible to the eye, can cause asbestosis, a noncancerous, but disabling and sometimes fatal scarring of the lungs; mesothelioma, a relatively rare, but almost always fatal cancer of the chest and abdominal linings; and lung cancer. The diseases surface 15 to 30 years after a person has inhaled or ingested the fibers.

Ironically, Dahl saw hoses on the floor that the workers could have used to wet the asbestos. But he said a foreman on the job said the workers were not soaking the asbestos because there were live electrical wires in the area.

"We don't view that as an excuse. They can always shut off the electricity to an empty building," Dahl said. Why wasn't the work being performed safely? Dahl said that possibly the contractor, who was experienced in asbestos removal, was trying to save time or money, or was not supervising the job carefully enough.

As part of his inspection, Dahl took samples of the dry material to have them analyzed at EPA's lab to determine whether the improperly handled material was indeed asbestos. He also took photographs. And he warned the foreman (who had acknowledged that the material being removed did contain asbestos) that asbestos removal regulations require wetting of asbestos before, during and after asbestos removal.

The names of the contractor and industrial facility have not been included in this story because the case is currently in litigation and may result in significant monetary penalties. Overall, contractors removed asbestos at more than 7,000 sites in New England in 1987.

Voicing environmental concerns in Washington, D.C.

10am

Four top EPA officials, two from Washington, D.C. and two from New England, wound their way through the corridors of the Pentagon to attend a meeting with the Assistant Secretary of the U.S. Air Force about his proposal to permit all-night civilian "air-freight" flights at Westover Air Force Base in Chicopee, Mass.

Representing EPA's New England Office were Regional Administrator Michael Deland and Steve Ells, director of the Office of Government Relations and Environmental Review. When the meeting began, Deland and Ells explained their environmental opposition to the air-cargo proposal. They said the civilian cargo planes were too loud for all-night operations. They said calculations showed the flights could potentially cause repeated wake-ups to tens of thousands of people in the Springfield-Chicopee area. At the same time, Deland and Ells did not object to the Air Force's proposal to land military cargo planes during the day. They said, however, it was not acceptable to simultaneously impose both new daytime military flights and new all-night civilian air-freight flights on the communities.

Ells described the discussion with Air Force officials as frank, and noted that the officials said they would review the issue and inform EPA about their conclusions.

While Ells flew back to Boston that afternoon, Deland stayed in Washington to talk to four U.S. senators from New England about several other environmental issues. He joined Betsy Horne, Region 1's assistant director for government relations, on Capitol Hill. Within four tightly-packed hours, they met with U.S. Senators George Mitchell of Maine, John Chafee of Rhode Island, Robert Stafford of Vermont and Edward Kennedy of Massachusetts. The issues they discussed included groundwater, hazardous waste, resource recovery plants, acid rain, sewage treatment plants and lead in soil.

Meetings with congressional leaders are an important part of EPA's work. Horne said, "Congress passes the laws that clean up the environment. EPA carries out those laws. The Senators have a concern about how well the laws are working and how we carry out the laws."

EPA Boston Harbor meeting.

Tackling pollution in Boston Harbor

Charles Conway, an environmental engineer in EPA's Water Division, drove to Winthrop to inspect the Deer Island Wastewater Treatment Plant on Boston Harbor. Conway knows the huge plant well. He has checked it for problems three or four times a year for the past five years. On this visit, he inspected the plant's pumps, engines and generators; the clarifiers which separate sludge from wastewater; the digesters which break down the organic material in the sludge and make it less harmful; and the chlorine building which feeds chlorine to purify the wastewater.

Conway must ensure that the outmoded plant is operating properly until a new one is built. The facility daily treats approximately 284 million gallons of wastewater from 26 Boston-area communities, and then discharges the effluent and sludge into the harbor. Neither the antiquated, ineffective Deer Island nor the Nut Island plants are adequate to treat the sewage. As a result, Boston Harbor is one of the most-polluted harbors in the nation. However, federal, state and local agencies have launched a massive multi-billion dollar construction program to stop the pollution. Conway's inspection was a small part of EPA's efforts in the cleanup. At the same time that he was out inspecting the Deer Island plant, about 20 EPA employees, including lawyers, engineers, scientists and administrators were attending EPA's monthly Boston Harbor meeting in a room overlooking the harbor on the 19th floor of the JFK Building in Boston.

During the meeting, the EPA staff who sat around a large table informed each other about the legal proceedings in the harbor cleanup; the proposed design and technology of the new treatment plant; the selection of a tunnel route to take the wastewater into the ocean; the choice of piers from which to launch workers and materials when constructing the new plant; and the selection of sludge technologies and sites for sludge treatment.

"Is everything on schedule?" asked Richard Kotelly, deputy director of EPA's Water Division.

"We're working real hard on putting together our Environmental Impact Statement. The biologists are reviewing the appendices," said Gwen Ruta, chief of EPA's Environmental Evaluation Section.

The conversation in the two-hour meeting went back and forth as the employees debated the merits of potential solutions. People took notes. Someone showed slides. Another person handed out a new draft report.

Ruta said the monthly meetings are essential to making the harbor cleanup run smoothly. "By sitting down together, we learn from each other. Somebody knows something about this little piece, and someone knows something about that little piece and the whole thing starts to make sense," she said.

noon

4*pm*

Preventing contamination of drinking water

Deborah Cohen, a geographer, and Ethan Mascoop, a cartographer, felt a sense of accomplishment. They had trekked all day long through brush in eastern Barnstable on Cape Cod in Massachusetts where they had successfully located approximately 25 water monitoring wells. The wells, which were 2 1/2-inch pipes sticking above the ground a few inches to several feet, were difficult to find. In Barnstable, local water companies had dug the wells years ago to determine how much water they were drawing from their public water supply wells. Cohen and Mascoop searched for the wells to measure water levels for another reason. The information would reveal what direction and how fast groundwater was flowing. With that information, a prediction could be made on whether contaminants from a landfill, underground storage tank, road spill etc. might pollute a public water supply well. The data would be particularly useful when a town wanted to locate a new water well or situate a potentially hazardous business.

For Cohen and Mascoop, the chance to work outside was a rare opportunity. They usually work in an office on EPA's Geographic Information System (GIS), which is a computer system with extensive graphics capabilities costing several hundred thousand dollars that allows EPA to pull data and mapped information. For example, when Cohen and Mascoop returned to Boston from Barnstable, they took the information they gathered and typed and digitized (traced) it into the GIS of the U.S. Geological Survey (USGS). The well-level information became one map-like "layer" that was visible on a computer screen. Other layers for the Cape Cod project included profiles of land use, aquifers, pollution sites and highways. These layers were later overlaid with each other and the data was manipulated in order to think through water-planning strategies and risks.

"You can ask the system to address a number of sophisticated questions about the mapped information. It's much more than a pretty picture," said Michael MacDougall, chief of EPA's Information Management Branch. He predicted there will be many more uses in the future for GIS, such as mapping of pollution problems in coastal waters like Quincy Bay in Massachusetts, analyzing other groundwater issues in New England, and mapping radon trouble-areas.

The GIS mapping on Cape Cod was one part of the two-year Cape Cod Aquifer Management Project (CCAMP). Six branches of government worked on the project, including EPA's New England Office, the Massachusetts Department of Environmental Quality Engineering, the Cape Cod Planning and Economic Development Commission, the USGS and the towns of Yarmouth, Barnstable and Eastham. Their goal was to better understand how to manage groundwater protection at all levels of government through an intensive study of a number of activities around water supply wells.

Cartographer Ethan Mascoop and geographer Deborah Cohen.

Talking and listening to the public

8 pm

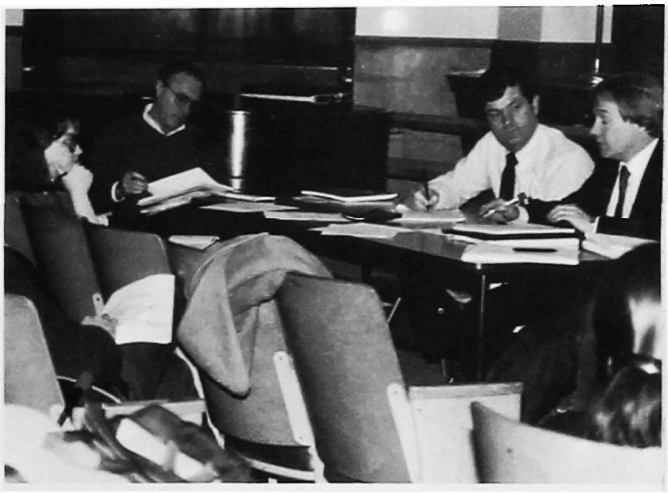
Approximately 15 citizens, and local, state and federal officials gathered in the Town Hall in Groveland, Mass. for an EPA public meeting about demonstrating an innovative soil treatment technology known as soil vapor vacuum extraction at the Groveland Wells Superfund site. The people came to ask questions, support or criticize the proposal, and learn about the new technology. The meeting, mandated by law, was one of many coordinated by the Superfund Community Relations Program in 1987 involving local citizens in decisions about cleanup actions at the 59 major hazardous waste (Superfund) sites in New England.

During the two-hour public meeting, David Argyros, a local citizen interested in the Groveland cleanup, asked, "Is the SITE program, you call it a demonstration, but is it something that is really going to clean up the problem?"

James Ciriello, an environmental engineer in EPA's Waste Division and the project manager for the Groveland site, replied, "This demonstration is not intended to clean up the Valley site, although that could potentially be an advantage to it. The idea is to demonstrate this technology and to determine the feasibility and optimum effectiveness of it."

The Groveland Wells site consists of approximately 850 acres of land. Two town wells which lie within the site have been contaminated by cleaning solvents and degreasers known as volatile organic compounds (VOCs). EPA has identified three sources of soil and groundwater contamination within the site. One of the sources lies below a manufacturing building. EPA is evaluating several cleaning alternatives for the soil. Excavating and treating the soil from underneath the building would be difficult and relatively expensive. EPA chose to pilot-test a treatment system known as vacuum extraction to clean the contaminated soil. The project was conducted under the Superfund Innovative Technology Evaluation (SITE) program, a nationwide program to evaluate new and promising hazardous waste treatment technologies.

EPA public meeting in Ashland, MA.



Engineers at the meeting explained to the citizens that vacuum extraction works as follows: Extraction wells are constructed above the water table in unsaturated soil. A vacuum pump is used to extract soil vapor from the wells. The vapors are treated by adsorption onto activated carbon.

Ciriello said the public's reaction at the meeting to the soil treatment proposal was generally supportive. He noted that citizens were mainly concerned about the loss of their drinking water supply and the schedule for the final cleanup.

"I was in a positive frame of mind for this meeting. Many of the meetings are confrontational. This wasn't. A good part of the meeting involved a technical presentation and discussion, and that appeals to me as an engineer. The meeting wasn't political or emotional. We had something positive to offer. We were proposing solutions," Ciriello said.

A Look at an Environmental Engineer

Kate Daly, a 27-year-old environmental engineer at EPA, is no stranger to responsibility. She routinely supervises million-dollar federal cleanups of hazardous waste spills and must simultaneously guard the health and safety of dozens of workers as they handle toxic materials. One slipup could be fatal. If workers are not properly dressed in safety uniforms, they could be exposed to harmful substances. If spark-proof tools are not used in certain situations, an explosion could occur. If a bulldozer operator at the cleanup is not alert, someone could be killed. If chemical drums are not properly handled, they could release poisonous vapors into the air.

Despite the stress and risk associated with her job, Daly says she finds her government work challenging. "I worked for a chemical company that was refining precious metals. But it got discouraging to see all the waste they were generating. I've always been interested in environmental work. I knew that it would be meaningful and interesting," she says.

Daly has worked for three years as an on-scene coordinator for the Oil and Hazardous Materials Section of the Environmental Services Division in EPA's New England Office. Her job is as diverse and unpredictable as the occurrence of chemical emergencies. In 1987, she directed the cleanup of approximately six chemical spills or leaks from tank trucks, underground storage tanks or manufacturing plants, and she supervised the $1.7 million cleanup at the Tibbetts Road Hazardous Waste Site in Barrington, N.H. She also conducted an extensive title search of the responsible parties connected to the chemicals released or damaged in the fire and explosion at the Putnam Fire and Chemical Spill Site in Putnam, Conn., and she managed the multi-million dollar cleanup of 800 55-gallon drums of hazardous waste and flammable materials at the Rolfite Canal Street Site in Shelton, Conn.

"The work is not boring. I'm not just pushing paper around. I know what a site cleanup involves from investigating the site to cost recovery. The field experience is very valuable. You are responsible for the whole site. And there is a lot of comradery among EPA's on-scene coordinators because you share unique cleanup problems," Daly says.

One of the most demanding jobs she performed in 1987 was the Rolfite cleanup. The Rolfite owners had stored more than 800 chemical drums — many of them leaking and deteriorating — at the site. They did not have a permit to store the chemicals, and they apparently did not have the money to clean up the site to protect human health and the environment.

That's when EPA became involved. As the on-scene coordinator at Rolfite, Daly had to manage the cleanup and enforcement actions, had to keep track of the daily costs and activities, had to write a work plan every day and had to supervise the technical aspects of the job. She directed workers who gathered the drums together into secure areas and who packed leaking drums into larger drums. The workers also sampled each of the drums to ascertain what they contained. Their contents would ultimately determine whether the drums would be disposed, recycled or incinerated.

The cleanup employees had an extremely difficult time on the job because the July temperatures hit 100 degrees Fahrenheit. To ensure their health and safety, the workers had to wear two layers of protective uniforms over their regular clothes and had to breathe through a face mask connected by a hose to an air tank worn on their backs. "You get drenched inside those suits. You feel wobbly and dehydrated. You feel like you're suffocating unless you don't think about it and keep busy," Daly says. The hot temperatures forced Daly to stop the cleanup during the day and begin the operation at night. But even then the temperatures hovered around 80 degrees and there was no wind. Workers still encountered elevated body temperatures and several had to take breaks after a short shift of drum-sampling.

"I've always been interested in environmental work. I knew that it would be meaningful and interesting."

"I had to constantly watch people in there and worry about their health," Daly says, who dressed in the protective uniforms herself several times. Wearing the safety gear has become routine for Daly. She says she is as comfortable in the safety uniform as she is in a business suit, which she wears when she is conducting the office side of her job.

Though frequently the only woman among men at the emergency removal sites, Daly says she doesn't usually think about that. In fact, she says the issue has only surfaced once when a male contractor recently tried to cover up his incompetence by saying the problem was not his inability, but rather that he had difficulty working with women.

Daly is one of several female professionals in her section, and she says her 19 co-workers are supportive and understand the difficulties of working as an on-scene coordinator. She earned a B.S. in chemical engineering and a B.A. in liberal arts during a cooperative five-year program at the University of Connecticut and Fairfield University, both in Connecticut. She is currently halfway through a master's program in environmental engineering at Lowell University in Lowell, Mass. She says her family had a big influence on her entering the environmental field. "Our family always recycled our garbage. My parents always took it upon themselves not to be wasteful. We always had a healthy respect for nature. If it's green, we let it grow," she says.

Since coming to EPA, Daly has further developed her own environmental philosophy. She keeps her philosophical thoughts concise and direct. For example, she notes, "Once a site is contaminated, it is almost impossible to bring it back to pristine conditions. We should avoid polluting in the first place."

"Once a site is contaminated, it is almost impossible to bring it back to pristine conditions.

We should avoid polluting in the first place."

A firefighter's protective suit is washed following a simulated disaster sponsored by EPA in Waterbury, CT.

Legal Action Against Polluters

An eyewitness wearing a ski mask showed EPA officials where to dig. He was only a couple of feet off the mark from where EPA's electronic instruments indicated several large, electrical transformers containing toxic PCBs had been illegally buried.

The anonymous eyewitness was one of dozens of people who helped EPA win a criminal case in 1987 against Rhode Island boat builder, Robert Derecktor and his corporation. The case involving air, water and land pollution constituted one of EPA's most important criminal investigations and prosecutions. Shipyard workers, state investigators, EPA's environmental engineers, laboratory technicians and lawyers, the U.S. Attorney's Office and the Justice Department marshalled forces to win the case. Peter Gerbino, EPA's criminal investigator, said many people believed that the case could not be won because Derecktor was a large employer in the community. "Well, we proved the system works," Gerbino said.

The Derecktor case was unusual because it was a criminal case, not a traditional, civil pollution case. As a criminal case, the lawyers were able to prosecute an individual, not just a "faceless" corporation. Michael Deland, EPA's New England Regional Administrator, said, "When there is knowing and willful disregard of federal environmental laws, as there was in the Derecktor case, it makes sense from a deterrent standpoint to put the responsible individual on trial. People sit up and take notice when a peer is in trouble with the law. We are ready, willing and able to use the criminal justice system to enforce environmental laws."

The probe into Derecktor's activities began when criminal investigators from Rhode Island and EPA, who were acting on anonymous tips, discovered serious environmental violations at the Derecktor Shipyard in Middletown, R.I. As the investigation progressed, a history of flagrant disregard for the environment evolved, including asbestos violations and the discharge of up to 4,000 tons of pollutants into Narraganset Bay. Also, the investigators discovered that Derecktor had transported six old electrical transformers from his shipyard to his nearby farm where he had them buried in an alfalfa field. Later, Derecktor constructed a large steel barn at the site with a thick concrete floor, allegedly to prevent the transformers from being found. However, Derecktor miscalculated and the barn was built alongside, but not over, the six giant transformers, three of which were laden with hundreds of gallons of toxic PCBs. Witnesses to the illegal burial, combined with the skilled use of sophisticated sensing equipment by EPA technicians, located the evidence.

In late 1987 in the federal district court of Rhode Island, Derecktor and his corporation pleaded guilty to certain portions of EPA's indictment. Derecktor was fined $75,000 and placed on probation for five years. Derecktor's corporation was fined $600,000, $200,000 of which went to the state's Hazardous Waste Response Fund. The corporation was also placed on an EPA list banning the firm from bidding on any federal government contracts for almost half a year until all of its Clean Water Act and Clean Air Act violations had been corrected.

The Derecktor Shipyard in Middletown, RI.

EPA attorney Susan Studlien said Derecktor's violations were "a result of hubris, a case of overweening pride." She said Derecktor is an "extremely self-reliant, intelligent and hard-driving man" who showed utter disdain for environmental regulation. It is unlikely that Derecktor or his shipyard will continue to violate environmental laws in the future. The shipyard today is being "watched like a hawk," according to Bernard Sacks, an EPA environmental engineer in the Water Division. He said, "We have one of the tightest water permits in New England in place at the shipyard. It requires extensive monitoring."

The Derecktor case was one of nine criminal cases that EPA referred to the Department of Justice in 1987. EPA enforcement actions against polluters in 1987 increased dramatically from previous years. EPA's New England Office also filed a record 27 civil cases to the Department of Justice and issued a record 208 administrative orders, according to Deputy Regional Administrator Paul Keough. Among those numbers were some important firsts: the first property lien under Superfund to recover costs and damages; the first two fines against companies for improper installation of underground storage tanks; and the nation's first federal criminal wetlands case against a Massachusetts firm for violating wetlands laws while developing a shopping mall.

In addition, large amounts of EPA's resources went toward the enforcement of clean air laws, particularly those chemicals that contribute to the Northeast's smog problem and asbestos regulations. Also, EPA continued to play an important role as plaintiff and regulator, both in court and behind the scenes, in keeping the Boston Harbor cleanup on track.

One of the largest fines EPA collected across the country in 1987 was the result of a routine inspection made in New Bedford, Mass. Dan Murray, an EPA environmental engineer in the Water Division, said that after inspecting the water pollution treatment system at a plant in New Bedford, he noticed the USM Corporation plant across the street.

Murray said, "I knew from reading reports from the city that they (USM) were in the metal finishing business, an industry that under the Clean Water Act must treat its wastes before pumping them into the sewer system. Inspections are always unannounced, so I contacted the city's engineer, and one of our guys from the lab, Gary Lipson, and we went back to take a look." He said, "The company's maintenance engineer gave us a tour that ended with his pointing to a drain in the floor. I expected him to tell us that from there it was pumped into a treatment room, but it went directly into the city's sewers."

Back in Boston, EPA's attorneys initiated legal action, demanding that USM, a subsidiary of the Emhart Corporation of Farmington, Conn., turn over their historical records and that the company begin submitting weekly waste sampling data to EPA. A review of the company's files showed that it had been aware since 1983 that it was required to meet federal pretreatment requirements. Andrew Lauterback, an EPA attorney on detail at the U.S. Attorney's Office, believed that if it could be proven beyond a reasonable doubt that the Clean Water Act was violated "negligently or willfully," then the USM civil case could be bumped up to a criminal case.

Deland agreed. He said, "Our thinking was that a criminal case would provide larger penalties; it would allow us to seek jail terms if warranted; and we could send a strong signal to the regulated community that these violations can no longer be considered just a cost of doing business." The case went on to bring the largest fine since EPA's criminal enforcement program began — more than $1 million.

Workers dig up electrical transformers containing toxic PCBs at Derecktor's farm.

"The company's maintenance engineer gave us a tour that ended with his pointing to a drain in the floor. I expected him to tell us that from there it was pumped into a treatment room, but it went directly into the city's sewers."

A STATE AND FEDERAL PARTNERSHIP

At the McKin site. Left to right: EPA Deputy Regional Administrator Paul G. Keough, US State Senator George Mitchell, Maine DEP Commissioner Dean Marriott, State Senator Robert Dillenback, citizen activist Cathy Hinds and former senator Bill Diamond.

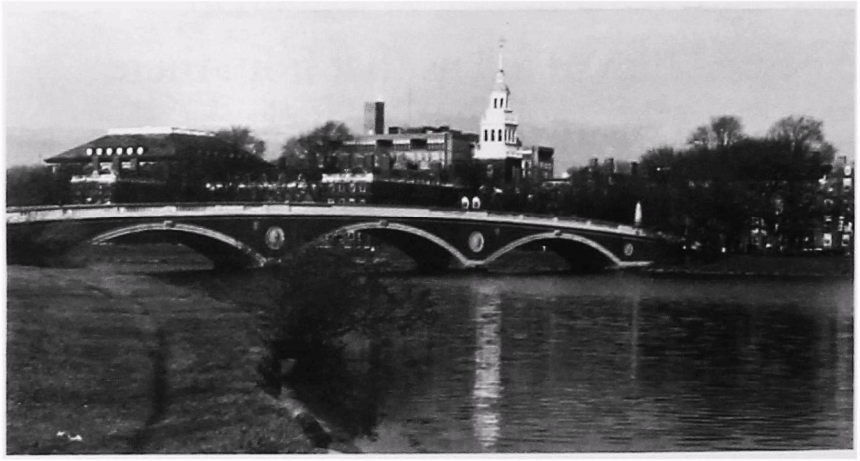
Environmental protection is not just a federal responsibility. When the public sees government officials cleaning up a Superfund hazardous waste site, building a new sewage treatment plant or saving wetlands from destruction, they will likely see environmental employees from many levels of government-federal, state and local-working on the projects.

Paul Keough, deputy regional administrator of EPA's New England Office, says protecting the environment in New England requires a "partnership" between the states and EPA.

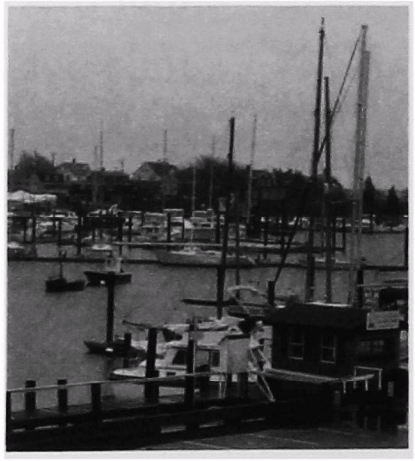
The partnership is intricately interwoven. EPA funded approximately half of the states' major environmental programs in 1987 with $23 million in program grants. The grants pay for a wide variety of services, including personnel to carry out cleanups, equipment to monitor air and water quality and lawyers to help carry out enforcement actions. Keough says EPA's role is generally to provide technical assistance and overview, while the states, which have many more employees than EPA, are often involved in "hands-on activities," such as inspections and monitoring. Also, EPA often delegates the primary responsibility for federally-mandated environmental programs to the states.

For example, with Timely and Appropriate Enforcement Agreements, state and federal officials cooperate to prosecute polluters. Under the Intergovernmental Personnel Act Exchange Program, EPA sends federal employees to work in state agencies.

In the Superfund program, the nation's program to clean up abandoned hazardous waste sites, EPA pays 90 percent of the cleanup and the states pay 10 percent. Top EPA and state officials hold quarterly meetings and monthly conference calls. In addition, EPA and the states work together on special projects, such as the Cape Cod Aquifer Management Project, the Narragansett Bay Project, and the Merrimack River Watershed Protection Initiative.



Charles River, Cambridge, MA.



Hyannis Harbor on Cape Cod, MA.

Vermont Farm.

"All of the New England states are environmentally aware. They have good laws and dedicated people," Keough says.

However, the dealings between the states and EPA can become strained and controversial, as occurred with the cleanup of Boston Harbor when EPA filed a lawsuit in 1985 against Massachusetts to obtain a firm cleanup schedule under the direction of the Federal District Court in Massachusetts. On the other hand, there have been instances when states have sued EPA. Such suits were filed in the ozone and visibility areas.

"Sometimes there is a love-hate relationship when the states feel we intervene in areas that should be left to the states. There are going to be disputes and disagreements. But we have to focus on what the real issue is — and that's protecting the New England environment. The fact of the matter is, EPA needs the states, and the states need EPA. That's where the partnership aspect is so important," Keough says.

EPA's usefulness to the states is often seen in its implied presence, or what is referred to inside EPA as the "gorilla in the closet."

Keough says, "EPA is a backup. If the states are having difficulty bringing a polluter into compliance, they can turn to EPA to bring in the heavy artillery."

Regardless of the differences or difficulties between EPA and the states, Keough notes that the public should be reassured that the two branches of government do work together cooperatively, and that their partnership will continue in the future.

Connecticut

Department of Environmental Protection

Commissioner Leslie Carothers

New Commissioner

Foremost among the environmental developments in Connecticut during 1987 was the recruitment and appointment of Leslie Carothers as the Department's fifth commissioner. A former deputy administrator of EPA's New England Office, Ms. Carothers was most recently employed as senior counsel in the Environmental Law Section of PPG Industries, Inc. of Pittsburgh, Pa. She joined the Connecticut DEP on July 1. The chairman of the search committee responsible for recruiting Leslie Carothers was former EPA Administrator Douglas Costle.

Connecticut officials proclaimed July as Recreation and Parks Month. Left to right: Robert Sousa, Susan Cooper, Gov. William A. O'Neill, DEP Commissioner Leslie Carothers and Robert Dlugolenski.

Dioxin Standards

One of the most widely reported stories of 1987 dealt with the development of standards for dioxin emission levels from resource recovery plants and an ambient standard to limit the amount of dioxin in the air from all sources. The one picogram per cubic meter (1.0 pg/m3) ambient standard is the first anywhere. The point source limits require the use of Best Available Control Technology (BACT) and will result in levels of from .009 to .037 pg/m3.

Recycling

Public Act 87-544 of the Connecticut General Assembly mandates the development of regional and/or local recycling programs, sets a target of a 25 percent reduction of solid waste through recycling, requires the DEP to establish regulations designating recyclable materials and prohibits the acceptance of recyclable materials at landfills or resource recovery facilities after January 1, 1991. Two grants have been provided for the development of model regional recycling programs in southeastern Connecticut and the greater Bridgeport area. Planning activities are now taking place that will cover the remainder of the state.

Long Island Sound Study

A comprehensive Long Island Sound Study involving cooperation among two states and numerous federal agencies and crossing a variety of disciplines is collecting extensive data on such subjects as oxygen deficiency, quantification of toxics and the definition and evaluation of living resources. The joint study, established under the estuaries provisions of the Clean Water Act, will generate geological as well as biological information and provide the supporting data for plans to deal with some of the state's most urgent problems.

Superfund

Another significant action of the Connecticut General Assembly established a fund of $10 million for state Superfund activities. Public Act 87-561 provides for the inventory and evaluation of hazardous waste disposal sites, the containment or removal of hazardous waste from, and the mitigation of the effects of hazardous waste on such sites. The basic purpose of this legislation is to mesh with federal Superfund provisions and other funding sources to assure that all significant waste sites are dealt with effectively.

Maine

Department of Environmental Protection

Commissioner Dean C. Marriott

Solid Waste
The Maine Legislature culminated a year-long study of solid waste management programs by passing a comprehensive revision of the state's waste management laws. The legislation resulted from a combination of widespread public concerns, including worries about the impacts from incinerators and the growing presence of commercial landfill operations attracting out-of-state waste. Under this law, those responsible for new incinerators and landfills must demonstrate that the facilities are needed to meet Maine's solid waste volumes; recycling is given major emphasis; and the closure of polluting dumps is assisted by an $8 million bond for municipalities.

Shellfish Areas
Maine's coastal waters and shellfish areas received significant new protection in 1987 when the Maine Legislature prohibited new overboard discharges of domestic wastewater. More than 3,000 licensed discharges from sources other than municipal treatment plants result mostly from single family residential housing. The Legislature decided that these discharges, combined with the probability of significant increases in their number due to booming coastal development, represented an unacceptable threat to the environment.

Sand Dunes
Controversial sand dune regulations were adopted by the Board of Environmental Protection using a predicted rise in sea level as the basis for setting regulatory standards. New sea walls were prohibited and their repairs were limited to the protection of existing buildings or structures that supply the public with transportation, sewer and water. In addition to outlawing new buildings in regularly flooded areas and on frontal dunes, the Board made the difficult decision to similarly prohibit reconstruction of existing structures.

Waste-Energy Incinerator
As the first of Maine's three approved state-of-the-art incinerators came on line in 1987, concerns about the threat of dioxin from plant emissions were paramount. Although not perceived as much of an issue when the Maine Energy Recovery Company (MERC) of Biddeford first applied for a permit, dioxin became a major focus during public hearings for similar plants in Portland and Orrington. Finally, tests conducted for MERC late in the year showed dioxin emissions totaled less than one percent of the allowable licensed limit.

April Fool's Day Flood in Maine caused spills of oil and hazardous materials.

April Fools' Day Flood
Melting snow and heavy rains synchronized perfectly to create the worst flooding in Maine in the past century. The DEP's Oil and Hazardous Materials Response teams answered more than 60 reports of spills caused by the flood that resulted in more than 160,000 gallons of various products entering the environment. The flood wreaked havoc throughout western and central Maine causing at least one death and over $60 million of damage.

Hazardous Wastes
Maine citizens reported 154 suspected hazardous waste disposal sites last summer as part of an EPA-funded project to locate threats to public health and safety. Citizens were requested to notify the DEP using an "800" phone number if they knew of chemicals, barrels or other suspicious substances being dumped, buried or abandoned.

Massachusetts

Executive Office of Environmental Affairs

Secretary James S. Hoyte

Legislation
State officials proclaimed 1987 the "The Year of the Environment" for Massachusetts with the passage of an historic legislative package that provided:

$500 million for the purchase and protection of open space in the Commonwealth.

$260 million to clean up landfills, protect water supplies and launch an aggressive recycling and composting program.

A cradle-to-grave system for managing low-level radioactive waste generated in the Commonwealth.

Massachusetts Division of Fisheries and Wildlife workers.

Hazardous Wastes
The Massachusetts State Legislature received a state plan for implementing an accelerated Department of Environmental Quality Engineering (DEQE) hazardous waste clean-up plan. The Legislature responded by approving an $81 million package, including $21 million for DEQE to hire 460 additional workers and $60 million to replenish the state Superfund.

Programs
Massachusetts' environmental programs were ranked among the top ten in the country by the Fund For Renewable Energy, a Washington-based environmental group which surveyed state programs in air quality, solid waste, land use, energy and other areas.

Acid Rain
Gov. Michael S. Dukakis, EOEA Secretary James S. Hoyte and several Canadian officials met in Boston to press for quick action on a U.S.-Canadian accord to reduce the impact of airborne pollution on both countries. Hoyte later travelled to Quebec to witness the impact of acid rain on Canada.

Boston Harbor
Paul Levy was named the executive director of the Massachusetts Water Resources Authority. Weeks later, Levy announced the purchase of the General Dynamics Shipyard in Quincy as a staging area for the Boston Harbor cleanup plan.

Pollution Penalties
DEQE announced its first-year results of its "Pollution Penalties" Program — 200 companies and individuals were fined a total of $2 million without the traditional need for lengthy court sessions.

Otis Air Force Base
Massachusetts requested that Otis Air Force Base on Cape Cod be placed on the federal Superfund list due to threats from a variety of pollution sources. DEQE also issued an administrative order calling for improvements at the Otis Sewage Treatment Plant.

Route 2 Plan Abandoned
It was announced that a proposal to rebuild Route 2 through Wendall State Forest in north-central Massachusetts would be abandoned due to environmental considerations.

New Hampshire

Department of Environmental Services

Commissioner Alden H. Howard

Reorganization
In January 1987 four of the state's environmental agencies were consolidated within a new "umbrella" department, the N.H. Department of Environmental Services. This has served to improve coordination among the state's air, waste, water quality, and water management agencies, each of which is now a division within the department. Benefits of this reorganization have included the improvement of permit coordination, long-range planning, enforcement activities, public education, and data management.

Resource Recovery
A new refuse-to-energy facility in Claremont, permitted by the Department, became operational. It will serve more than two dozen New Hampshire and Vermont towns. The facility converts 200 tons of solid waste per day into 4.5 megawatts of electric power. Associated with this facility is an active and growing recycling element, sponsored by the project, which involves solid waste recycling operations in a number of the project's member towns. The project also participates in the state's household hazardous waste collection program.

In 1987 the Department also issued a permit for a refuse-to-energy facility in Concord that will receive solid waste from more than two dozen towns and cities in the central New Hampshire area.

Drinking Water
In a joint federal/state effort involving EPA Superfund monies and state Hazardous Waste Cleanup Funds, an emergency drinking water supply and distribution system was initiated for residents near the Tibbetts Road Hazardous Waste Site in Barrington.

Another notable groundwater-related accomplishment included the state's use of its Oil Pollution Control Fund to initiate remediation efforts for several major leaking underground storage tank situations in Meredith Center, Lochmere, and Northwood. These efforts consisted of supplying potable water to affected residents and initiating state-funded studies designed to find suitable alternative water supply sources for the affected residents.

Wastewater Plan
Enforcement actions were initiated against 12 New Hampshire towns and cities for failing to meet wastewater treatment requirements mandated under the Clean Water Act. The State of New Hampshire, through the Department in conjunction with the N.H. Attorney General's Office, assumed responsibility from EPA for issuing court-ordered consent decrees. In light of recent federal funding cutbacks, the state also made a commitment to continue providing state grants for helping these communities meet their obligations.

A groundbreaking ceremony for the construction of an emergency water supply system at the Tibbetts Road Superfund Site in Barrington, NH.

Air Toxics
A comprehensive program to address the issue of air toxics was initiated by the Department as a result of the enactment of a state Air Toxic Control Act. The Department is developing a thorough emission inventory of the types and amounts of toxic air pollutants released into the air which could result in acute and chronic public health problems. The Department is also establishing a permit system for sources that release toxic contaminants into the ambient air and a program to monitor ambient concentrations of these pollutants.

Rhode Island

Department of Environmental Management

Director
Robert L. Bendick

Drinking Water
The Department continued a major, statewide drinking water well-study intended to evaluate impacts of various land uses on private drinking water. The study is detecting early contamination with resultant remediation, and will form the basis for directing future groundwater protection regulations. At the same time, DEM received a record 5,781 water table applications representing 15,000 to 18,000 individual water table tests for ISDS installations, resulting from a construction boom generated by the growth of the state's economy.

Rhode Island conservation officers checking lobster size.

Wastewater Plants
In fiscal 1987 the Rhode Island Department of Environmental Management reached an important point in its wastewater cleanup effort when it held the annual public hearing on its priority list for federal and state grants to municipalities for wastewater treatment plant construction. The 1987 list documented the Department's intent to award grants allowing the completion of secondary treatment at every one of the state's municipal wastewater treatment plants. Eleven new secondary treatment facilities have been completed, seven construction projects were underway, and five more projects were about to begin. The priority list made Rhode Island one of the first states in the nation to schedule completion of secondary treatment facilities throughout the state.

Air Toxics
The Department's Division of Air and Hazardous Materials developed air toxics regulations setting standards for 40 pollutants. The substances were chosen on the basis of toxicity and use-in-quantity in the state. The regulation sets the acceptable ambient levels of the substances at ground level that individual sources may emit into the air. Monitoring procedures were also developed. The regulations are expected to have significant impact on dry cleaners or degreasers using perchloroethylene, trichloroethylene, or methylene chloride as a solvent; industrial or medical facilities using ethylene oxide sterilizers; and chrome platers.

Legal
The Rhode Island Department of Environmental Management's Investigative Unit was praised by the U.S. Department of Justice in the prosecution of Robert E. Derecktor and his shipyard following a joint investigation by DEM and EPA. The Justice Department said the case "should serve as a model for the successes which are possible when there is a joint team effort by the states, EPA, and prosecutors." The chief of the investigative unit also received EPA's highest award for his work in the case. The cases brought as a result of the unit's actions on hazardous waste in fiscal 1987 resulted in charges being brought against five individuals and four firms, as well as $681,045 in fines, and brought $202,000 into DEM's Hazardous Waste Emergency Response Fund.

Open Space
In fiscal 1987, as the construction boom continued, the Rhode Island Department of Environmental Management continued to emphasize the acquisition of open space and farmland preservation. A total of 1,230 acres of land were acquired. Major acquisitions included the 835-acre Nicholas Farm in Coventry, Olivo's Beach in Narragansett, 33 acres along the Blackstone River, and 140 acres on Prudence Island. The Farmland Purchase of Development Rights (PDR) program resulted in the purchase of the development rights to three farms, totaling 180 acres.

Vermont

Agency of Natural Resources

Secretary Jonathan Lash

Solid Waste
Legislation enacted in 1987 requires the promulgation of a comprehensive state solid waste management plan designed to achieve the maximum feasible reduction in waste disposal through reduction, reuse and recycling. Each community is required to participate in the development of regional solid waste management plans consistent with the state plan.

The bill also mandates the development of new environmental standards for solid waste facilities, including liners and leachate collection for all landfills and a permitting and tracking system for waste handlers that enables the states to assure that the waste is handled consistent with state and local plans.

Housing and Conservation
This program is designed to serve the "dual goals of creating affordable housing and the protection of Vermont's agricultural land, historic properties, important natural areas and recreational lands..." The legislation established a board to review applications from community, conservation or housing groups for assistance in acquiring property based on urgency of need, availability of funding elsewhere and other criteria.

Growth
During the recent five-year period of national growth, Vermont's economic growth ranked among the highest in the nation. The strong environmental ethic in the state helped maintain qualities which continued to attract investment in land and business in Vermont. In response to rising concern on the part of Vermonters about protection of the values of Vermont in the face of rapid growth, Gov. Madeleine Kunin launched the "Governor's Commission on Vermont's Future: Guidelines for Growth" in September. The Governor asked Vermonters for their ideas. Thousands of residents attended regional public hearings and hundreds more wrote letters to the Governor and to the commission. Primary problems perceived were loss of agricultural land, affordable housing, the planning impediment of the property tax, and deficiencies of the current planning process. The commission recommended state guidelines to be used in planning for all future growth and provided detailed recommendations for each of the problem areas.

Land Speculation
Revisions were made to several statutes to close "loopholes" exploited by corporate land speculators. Included were changes to the 15-year-old Vermont Land Gains Tax to add a hefty disincentive to buying, subdividing and selling land in the short term. Graduated rates are set by the percentage profit gained and how soon the sale occurs after purchase. For example, the tax rate for a gain of more than 200 percent if the land is held for less than four months is 80 percent.

Governor's Commission on Vermont's Future: Guidelines for Growth hearing.

Permit Fees
The Legislature approved comprehensive legislation to increase development permit fees in order to provide funding for staff increases. The additional staff has allowed an improved level of service to development applicants, and the establishment of performance standards for the permit review process, incentives to improve compliance with regulations and commitment to improved enforcement.

THE ORGANIZATION

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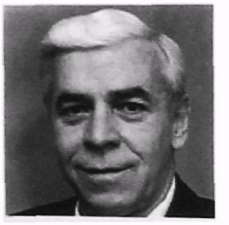

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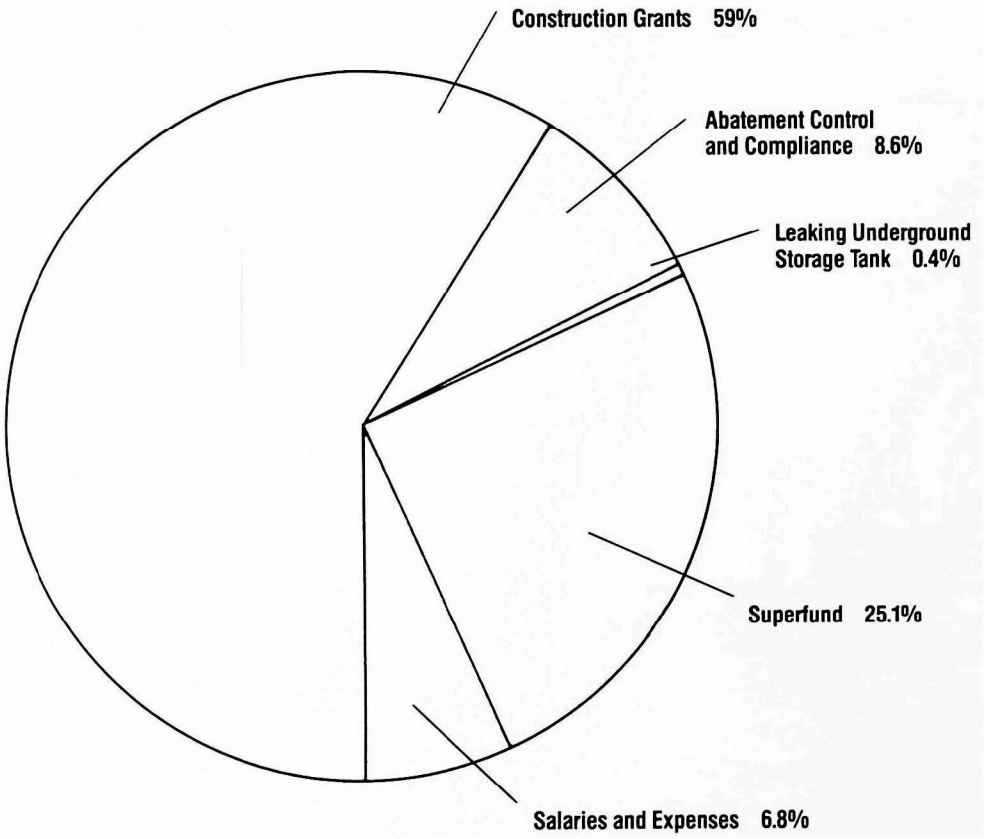
Water Quality
Groundwater Management
and Water Supply

FINANCIAL OVERVIEW

	Salaries and Expenses	Superfund	Leaking Underground Storage Tank	Abatement Control and Compliance	Wastewater Treatment Construction Grants	Total EPA Region 1
Personnel Compensation and Benefits	$14,674,100	$4,738,500	$193,800			$19,606,400
Travel	$494,600	$269,800	$7,300			$771,700
Operating Expenses	$2,826,900	$1,743,700	$28,800			$4,599,400
Interagency Agreements		$29,166,100				$29,166,100
Program Contracts		$21,166,100		$1,597,600		$23,348,400
Cooperative Agreements		$8,794,900	$895,500			$9,690,400
Grants to States				$21,143,000		$21,143,000
Wastewater Treatment Construction Grants					$156,000,000	$156,000,000
Total	$17,995,600	$66,463,800	$1,125,400	$22,740,600	$156,000,000	$264,325,400



REGION ONE WORK FORCE

Engineers
Environmental 163, Chemical 8
Total: 171

Scientists
Aquatic Biology 15, Micro Biology 2, Ecology 1
Total: 18

Physical Scientists
Environmental 55, Geology 9,
Chemistry 11, Hydrology 7
Total: 82

Attorneys and Paralegals
Attorneys 35, Law Clerk 1, Paralegal 1
Total: 37

Environmental Protection
Specialists 37
Total: 37

Technicians
Environmental Assistants 13, Engineering
Technician 1, Physical Science Technician 1
Total: 15

Administrative Support
Finance 16, Grants 10, Personnel 11,
Office Service 6, Computer 12,
Management and Program Analysis 11,
Public Affairs 7, Other 4
Total: 77

Secretarial and Clerical
Secretarial and Clerical 124
Total: 124

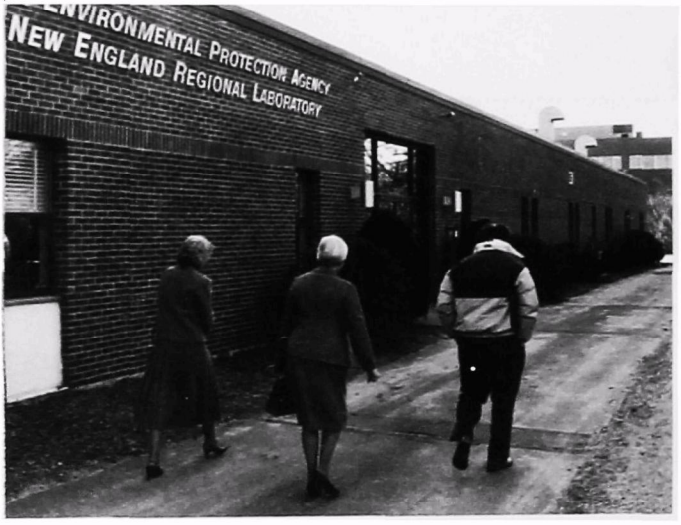
Total Number of Employees: 561

FOR FURTHER INFORMATION

If you would like additional information about specific EPA programs, please visit or write the Office of Public Affairs, U.S. Environmental Protection Agency, John F. Kennedy Building (22nd Floor), Cambridge Street, Boston, Mass. 02203, or call (617) 565-3420.

The office maintains a limited supply of EPA publications, operates an informal speakers' bureau and coordinates regional distribution of environmental films and videos. There is no charge to the public for the services.

For extensive research, EPA also has an environmental library on the 15th floor (Room 1500) of the JFK Building in Boston which is open to the public, Monday through Friday, 8:30 a.m. to 4:30 p.m. The library contains books, documents, EPA reports, journals and microfiche reports about air, water and solid and hazardous waste issues. For further information, call the library at (617) 565-3300.



EPA's laboratory in Lexington, MA.

If you encounter an environmental problem, report it first to your local, and then your state pollution control agency at the phone numbers which follow. For specific information about EPA programs, call the following EPA phone numbers:

U.S. EPA New England Office (Region 1)	**(617) 565-3715**
Asbestos	(617) 565-3744
Air Division	(617) 565-3800
Automobile Complaints	
Massachusetts	1-800-631-2700
Other New England States	1-800-821-1237
Chemical Spills 24-hour number	(617) 223-7265
Lexington Lab	(617) 860-4300
Pesticides	(617) 565-3744
Pesticides Hot Line	1-800-858-7378
Personnel	(617) 565-3719
Regional Counsel	(617) 565-3451
Superfund	(617) 573-9610
Underground Storage Tanks	(617) 573-9604
Waste Division	(617) 573-5700
Water Division	(617) 565-3478
Permit Compliance	(617) 565-3493
Surface Water Quality	(617) 565-3531
Drinking Water	(617) 565-3610
Groundwater	(617) 565-3600

Environmental Agencies of New England

Connecticut Department of Environmental Protection
165 Capitol Ave.
Hartford, Conn. 06106
(203) 566-5599
24-hour spill number:
(203) 566-3338

Maine Department of Environmental Protection
State House, Station 17
Augusta, Maine 04333
(207) 289-7688
24-hour spill number:
1-800-482-0777

Massachusetts Executive Office of Environmental Affairs
100 Cambridge St., 20th Floor
Boston, Mass. 02202
(617) 727-9800
24-hour spill number:
(617) 292-5648 (Business hours)
(617) 566-4500 (After business hours State Police Communications Center)

New Hampshire Department of Environmental Services
Health and Human Services Building
6 Hazen Drive
Concord, N.H. 03301
(603) 271-3503
24-hour spill number:
1-800-346-4009

Rhode Island Department of Environmental Management
9 Hayes St.
Providence, R.I. 02908
(401) 277-6800
24-hour spill number:
(401) 277-3070

Vermont Agency of Natural Resources
103 South Main St.
Waterbury, Vt. 05676
(802) 244-7347
24-hour spill number:
1-800-641-5005

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