Office of Environmental Stewardship
2002 Annual Report

United States Environmental Protection Agency New England

US EPA New England
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On behalf of all the employees of EPA New England's Office of Environmental Stewardship, I am pleased to present our Annual Report for 2002. This report marks a major milestone in the evolution of the Office of Environmental Stewardship. For the first time, we are reporting the results of the integrated efforts of our enforcement and assistance units, rather than the separate enforcement and assistance reports of recent years.

When it was created in 1995, the Office of Environmental Stewardship was unique within EPA for bringing together enforcement, assistance and pollution prevention. Initially, the most significant challenge we faced was the lack of coordination between the enforcement and assistance functions. Over time, we have learned that we are most effective when we identify environmental, public health or compliance problems; match the right solution with the right problem; and appropriately integrate the tools at our disposal to solve them. The shape of this report reflects the change in how we approach environmental problems.

Acknowledging that there are readers who are interested in greater detail about the work of either the enforcement or assistance and pollution prevention units, we are also making more detailed reports and other information relating to each unit available on our Enforcement and Assistance web page: www.epa.gov/ne/compliance.

We hope you will find this report informative and that it will inspire you—whether as a citizen, a public sector official, or a company owner—to embrace your role as a steward of New England's environment. If you have feedback on the report, please send an e-mail to r1web.mail@epa.gov or call us at 617-918-1831.

Stephen S. Perkins, Director
Office of Environmental Stewardship
EPA New England

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Introduction

The Office of Environmental Stewardship is home to the enforcement and compliance assistance programs in EPA's New England Office. Our mission is to protect the environment and public health in New England by improving the environmental performance of businesses, government and the public through compliance with environmental requirements, preventing pollution and promoting environmental stewardship.

Over the past federal fiscal year (October 2001 to September 2002), our enforcement programs assessed more than $4.3 million in penalties, more than in any other year since 1993. We referred 34 cases to the US Department of Justice, including 12 Superfund cases, and set a twelve-year record for the number of referrals. And as part of settlement agreements, we leveraged $9.5 million in direct environmental benefit through supplemental environmental projects. This figure represents an all-time record for us and is more than double the value of such projects in 2001.

Over the same time period, our compliance and technical assistance programs were responsible for organizing and/or participating in more than 375 meetings and workshops and for reaching over 14,500 individuals within the regulated community. Through voluntary programs that go beyond compliance, we encouraged 33 New England companies to commit to reducing more than 4500 tons of hazardous and solid wastes and toxic air emissions.

We achieved these remarkable results by using a broad mix of tools and approaches (e.g., enforcement, assistance, incentives, innovation) that address today's environmental problems and promote environmentally sustainable performance for the future.

Tools and Approaches:

- Integrating compliance strategies, that is, selecting, blending or appropriately sequencing the use of incentives, enforcement and assistance to achieve improved environmental compliance.
- Targeting sectors which are of concern across New England or which may be difficult for individual states to address.
- Strategically using enforcement in areas which call for federal leadership and for maintaining a level playing field for businesses and other regulated entities.
- Achieving tangible environmental results in case settlements and assistance efforts.
- Promoting environmentally sustainable practices, such as renewable energy and reduced water usage, in the regulated community.
- Working in partnership with states, tribes and local governments to build capacity and set common goals.
- Building strategic alliances with stakeholders—individual facilities, trade associations, environmental groups, individuals—to leverage efforts by others.

This report highlights much of our work in 2002 around the following problem-solving themes:

- **Health effects on sensitive populations**, particularly the impacts of air toxics and lead on children, the elderly and environmental justice communities.
- **Environmental impacts on communities**, such as the impact of storm water and combined and sanitary sewer overflows on rivers and coastal waters and of hazardous waste and toxic substances.
- **Persistent or widespread non-compliance**, with a particular focus on sectors with significant compliance problems.
- **Homeland security and emergency preparedness**, focused on reducing the likelihood of unplanned releases of toxic substance and upgrading communities' ability to respond if necessary.
- **Environmental Management Systems**, which enable facilities to take a systematic approach to managing and reducing their environmental footprint.
- **Advocacy for superior environmental performance** through new approaches, innovative technologies, and incentive programs for going beyond compliance.

Protecting the Health of Our Most Sensitive Populations

Certain human populations such as children, the elderly, and minority groups (including low income communities) are more vulnerable to environmental problems. As an agency, we have made protecting these populations a priority and are committed to environmental justice. Using a mix of compliance assistance activities and enforcement actions, we focused on two very significant threats to their health—asthma and lead poisoning. Here are some examples of our work:

Improving the K-12 School Environment
Pound for pound, children are more sensitive to environmental problems than adults. In addition, children spend a significant portion of their days in school buildings. Many of these buildings are old, inadequately maintained, and contain environmental conditions that pose increased risks to the health of children.

Environmental justice involves the fair treatment of all people with respect to the development, implementation and enforcement of environmental laws and policies and their meaningful involvement in the agency's decision-making processes.

Some of the most pressing environmental issues that schools must address range from assuring safe drinking water and acceptable indoor air quality to safely and properly managing chemicals and hazardous wastes. At the same time, there are numerous opportunities for schools to adopt cost-saving practices for reducing energy consumption, recycling solid wastes, and conserving water usage.

Last year, we reached over 2,000 school principals, superintendents and science teachers with our outreach efforts in the K-12 Schools sector to provide information on indoor air quality, integrated pest management, chemical management and school bus idling. We also assisted in the development of networks of federal, state and local officials and assistance providers in Connecticut, Maine, Massachusetts and Rhode Island. As a result, these states have launched their own projects to address chemical management in schools.

Improving Air Quality
Asthma rates in New England rank among the highest in the nation; 82 people per 1,000 or 8.2 percent of our region's population suffers from this condition. In urban areas, particularly low-income and minority neighborhoods, asthma rates in many instances can be two to three times higher than the regional average, especially for children.

Exhaust from vehicle engines and emissions from industrial sources (such as oil or coal burning power plants and gasoline-dispensing facilities) emit volatile organic compounds (VOCs) and nitrogen oxides into the air we breathe. Some VOCs are carcinogenic. VOCs and nitrogen oxides, when combined in the presence of the sun's ultraviolet rays, create ground-level ozone, which is unhealthy to breathe and can aggravate respiratory conditions such as asthma. From 1999 to 2002, ground-level ozone in New England exceeded the EPA's standard an average of 32 days per summer.

Last year, we pursued several significant clean air enforcement cases and reached settlements in some cases where facilities agreed not only to pay a cash penalty, but also to undertake supplemental environmental projects that will help improve the quality of our air. Many of these cases involved the transportation and energy sectors since these are the largest contributors of air pollutants in New England.

A Supplemental Environmental Project is a project that results in environmental or public health and safety benefits beyond those required by law and may partially offset the penalty imposed in the settlement of an enforcement action.

For example, as part of a settlement resolving claims that it violated hazardous waste, clean water and clean air laws, the Rhode Island Public Transportation Authority agreed to install particulate filters and begin using ultra-low sulfur fuel on its fleet of 156 diesel-powered buses. These changes will reduce harmful diesel emissions from the authority's buses by 90 percent.

Cumberland Farms agreed to spend over $2 million upgrading the gasoline vapor recovery systems at 42 of its gas stations in New England, New Jersey and Pennsylvania. The agreement stemmed from allegations that Cumberland's failure to test and maintain the vapor recovery equipment at some of its gasoline pumps resulted in approximately 10 tons of excess pollutants escaping into the air between 1995 and 2000. The new equipment will reduce emissions of toxic gasoline vapors which can escape into the air when pumping gas.

In another agreement, Gulf Oil will spend $421,000 making capital improvements to its fuel storage tanks in Connecticut, Massachusetts, Maine, New Jersey, and Pennsylvania for allegedly failing to conduct emissions tests, failing to maintain emission control equipment, and operating a bulk fuel storage terminal in New Haven, Connecticut without the required permits. The improvements to Gulf's storage tanks are expected to reduce VOC emissions by an estimated 25 tons per year for at least the next 15 years.

Health risks associated with diesel exhaust include lung damage, respiratory problems, and lung cancer. A typical diesel vehicle burns approximately one gallon of diesel fuel for each hour it idles.

Last year, we also ordered Exelon Generating Company to reduce the amount of visible emissions (or particulate pollutants) coming from its smoke stacks at the Exelon Mystic Power Plant in Everett, Massachusetts. These pollutants can trigger asthma and other respiratory illnesses. As a result, Exelon last summer installed new ignition equipment on three of the facility's older generators and switched to a lower sulfur, cleaner burning, fuel oil, thereby reducing visible emissions and helping to eliminate sulfur-based smoke plumes from the plant.

In settling allegations that it illegally released ozone-depleting substances into the air by improperly crushing discarded refrigerators and air conditioners, Waste Management of Massachusetts paid a $775,000 penalty and agreed to spend $1.4 million to retrofit 200 Boston school buses with particle traps and to purchase low-sulfur diesel fuel for the buses. This is one of the largest school bus retrofit efforts in the nation. Waste Management is also spending $1.2 million to create park land near Chelsea Creek in East Boston, Massachusetts. The park will provide the first public access point to the creek, as well as much needed green space for the urban neighborhoods of East Boston and Chelsea, Massachusetts.

And lastly, as part of a regional effort to curb diesel emissions in urban areas, we also initiated enforcement cases against two bus companies operating out of Logan Airport for excessive idling of their buses last summer. The bus companies are National Car Rental and Paul Revere Transportation. Massachusetts forbids the unnecessary idling of vehicles for more than five minutes and these are the first penalties sought by EPA for excessive idling in the state. Two other New England states, Connecticut and New Hampshire, also prohibit excessive vehicle idling.

Reducing Lead Paint Exposure

Because New England has some of the oldest housing stock in the country, lead poisoning remains a significant public health concern. Low-level lead poisoning is widespread among American children, affecting as many as three million children under the age of six, with lead paint being the primary cause. Children are especially susceptible to lead poisoning since they are more likely to ingest lead paint and are more sensitive to the effects of lead. Elevated lead levels can trigger learning disabilities, decreased growth, hyperactivity, impaired hearing and even brain damage.

In an effort to reduce lead exposure, the federal Residential Lead-Based Paint Hazard Reduction Act requires sellers and landlords selling or renting housing built before 1978 to:

- include lead notification language in sales and rental forms;
- disclose any known lead-based paint and lead-based hazards in the living unit and provide available reports to home buyers or renters; and
- allow a lead inspection or risk assessment by home buyers.

Over the past year, we organized and participated in numerous outreach projects to contractors, sellers, and lessors to raise awareness of lead paint disclosure laws. To complement our assistance efforts, we inspected 64 properties affecting over 20,000 housing units throughout New England and also took action against those failing to comply with lead paint laws.

The region's housing shortage has forced many low-income families in urban areas to remain in older housing with deteriorating lead paint or face homelessness.

Notifying prospective tenants or buyers that the property contains lead paint is one way to reduce the incidence of childhood lead poisoning. Accordingly, we sued two Manchester, New Hampshire realtors, Senecal Properties and Lacerte Realty, for allegedly failing to properly notify tenants and buyers of properties containing lead paint, exposing young children to lead hazards and preventing tenants and buyers from taking appropriate precautions. We also settled an enforcement case with the Franklin Pierce

Law Center in Concord, New Hampshire to resolve claims that it failed to notify students that lead was present in some of its residential housing units. The law school agreed to a penalty and to spend $103,300 to abate lead paint hazards in all applicable student housing.

Another example of our aggressive enforcement to protect public health and hold businesses accountable for their actions is our case against D&D Sandblasting of Somerset, Massachusetts. As the contractor renovating a building in Fall River, Massachusetts, this company paid a penalty for allegations of improperly handling lead paint and debris which resulted in a shipment of approximately 8.9 tons of lead-contaminated debris to a local landfill that was not licensed to accept hazardous waste. Because the waste was not properly handled, lead dust contaminated large parts of the building, which included a dance studio for children under the age of six that employed a pregnant dance director. We ordered the dance studio closed until the lead debris was cleaned up.

Reducing Environmental Impacts on Our Communities

Since the 1970s when many of the nation's environmental laws were passed, we have achieved remarkable improvements in the environmental quality of our water, air and land. Unfortunately, pollutants from a variety of sources continue to threaten our environment and impact our communities. They are entering the environment not only from industrial activities, but also from rain or melting snow. And, we are still faced with the consequences of poor waste disposal practices of yesterday.

Controlling Storm Water Runoff

Designated the "Year of Clean Water," 2002 marked the 30th anniversary of the passage of the Clean Water Act. While significant progress has been achieved in controlling and reducing pollutants entering our waterways, storm water runoff remains a leading cause of water quality problems nationwide. In New England, more than one-third of the region's streams and rivers are still unsafe for swimming, boating and other activities, especially after wet weather. In the summer of 2001, New England experienced more than 750 beach closure days, including 100 on Cape Cod.

Phase I of the Clean Water Act's Storm Water Rules requires permitting of industrial facilities and construction sites greater than five acres. Runoff from industrial facilities contains toxic constituents while runoff from construction sites transports sediment and a variety of pollutants into our waterways. It has been estimated that during the course of one year, erosion from a one-acre construction site may yield 20 to 150 tons of sediment if not properly managed. Because protecting our streams and rivers from such runoff is so important, we pursued enforcement cases against several construction-related companies last year for violating the Phase I Storm Water Rules.

For example, Boston Sand & Gravel paid a $897,983 penalty to settle allegations that it violated the storm water rules at sites in Charlestown, Everett, and Weymouth, Massachusetts. In addition to the penalty, the company agreed to spend $445,000 to undertake a wastewater recycling project at its Charlestown facility. The project will reduce corrosive discharges of the facility's wastewater to the Millers River and conserve potable water by recycling waste concrete slurry.

Storm water runoff is caused by rain and melting snow, which flows from land, pavement, construction sites, building rooftops and other surfaces. It accumulates sediment and pollutants such as oil and grease, toxic chemicals, pesticides, nutrients, metals, and bacteria as it travels across land. Heavy precipitation or snow melt can also cause sewer overflows which, in turn, may lead to the contamination of water sources with untreated human and industrial waste, toxic materials, and other debris. EPA controls storm water and sewer overflow discharges through its National Pollutant Discharge Elimination System (NPDES) permit program.

We also cited builders, construction firms and a land owner for allegedly failing to have storm water permits for several real estate development sites. We filed complaints seeking penalties against V&G Development, which is developing the Chestnut Hill Estates in Methuen, Massachusetts, as well as PREIT Services, Bestech Environmental Services, and Fairfield Mall Limited Partnership, which are redeveloping the Fairfield Mall in Chicopee, Massachusetts, for claims that they failed to follow storm water rules at their sites. We also reached a $75,000 settlement with Mesiti Development for allegedly violating some of these rules at a Salem, New Hampshire residential development site.

These enforcement actions are part of a multi-faceted effort by EPA to bring developers and builders into compliance with storm water runoff regulations. In addition to inspections, this effort includes extensive compliance assistance activities. In 2002, we conducted over 30 workshops for municipal and state agencies and the construction industry to help them better understand the new Phase II storm water requirements which take effect in March 2003. More than 1,200 individuals attended these training sessions. We also developed a number of outreach publications to assist with compliance. These publications are available on our web site.

Under Phase II of the Storm Water Rules, 475 New England communities with populations less than 100,000 are required to develop comprehensive storm water management programs. The rule also requires that municipal industrial facilities (such as wastewater treatment plants) and construction sites disturbing one or more acres of land apply for storm water permit coverage by March 10, 2003.

Reducing Municipal Sanitary Sewer Overflows

Properly designed, operated and maintained sanitary sewer systems are meant to collect and transport all in-flowing sewage to a publicly owned treatment works. However, unintentional discharges of raw sewage from municipal sanitary sewers occasionally occur because of operation and maintenance problems or limited system capacity. These types of discharges are called sanitary sewer overflows. Nationally, EPA estimates there are at least 40,000 sanitary sewer overflows each year. These overflows of raw, untreated sewage can cause water quality problems and significant health risks. They also can cause property damage if the sewage backs up into basements. Discharges of untreated sewage, even if unintentional, are illegal under the Clean Water Act, and when necessary, we have brought enforcement cases against municipalities that continually fail to address these overflows.

In 2002, we successfully reached agreements with Greenwich, Connecticut; Waterbury, Connecticut; and Winchendon, Massachusetts to pay a total of $680,000 in civil penalties for raw sewage overflows which resulted in millions of gallons of untreated sewage flowing into area waterways. More importantly, the communities also agreed to improve maintenance of their collection systems and to make much needed upgrades and repairs to their sewer systems. These upgrades and repairs, which will cost the three communities more than $24 million, will help reduce or eliminate sanitary sewer overflow incidents.

Improving Hazardous Waste and Toxic Substances Management

Over the past 30 years, we have come a long way in managing and properly disposing of the wide range of hazardous substances found in our homes, schools and workplaces. Because industrial and manufacturing processes continue to create many different types of wastes, the release of hazardous substances into our soil, ground water, surface water, and air remains a threat in our communities.

Over the past year, we pursued several enforcement cases against companies for improperly managing toxic substances and hazardous wastes. For example, the Rolf C. Hagen Corporation of Mansfield, Massachusetts agreed to pay a penalty of $204,600 for allegedly importing, distributing and selling unregistered and improperly labeled pesticides. Under the Federal Insecticide, Fungicide and Rodenticide Act, products or devices that prevent, repel, trap or destroy pests must be registered with EPA before they are sold or distributed. To ensure product safety, registration and labeling standards require information on any potential adverse effects that could harm human health or the environment.

Hexavalent chromium and trichloroethylene (TCE) are two highly toxic chemicals and potential carcinogens commonly used in industrial processes such as metal finishing and degreasing. In resolving a complaint alleging violations of hazardous waste laws and Clean Air Act monitoring and reporting requirements, Cambridge Plating, a Belmont, Massachusetts metal finishing company, agreed to spend $357,000 on environmental improvements that will reduce emissions of these two toxic substances as well as pay a penalty of $65,000.

When settlement negotiations fail, we are prepared to take an enforcement case to a hearing before an administrative law

judge. Last year, the Barden Corporation, a ball bearing manufacturer in Danbury, Connecticut, was ordered by a judge to pay the $281,000 penalty for multiple violations of the Clean Air Act, including emitting more than 10 tons of TCE above the allowable annual limit in 1998.

Katahdin Analytical Services, an analytical laboratory in Westbrook, Maine which generates hazardous wastes and disposes of laboratory samples from customers, agreed to pay a $12,500 penalty for alleged hazardous waste storage and handling violations. The company also agreed to conduct facility-wide audits for five consecutive years to assure worker safety and environmental protection.

Cleaning Up and Revitalizing Superfund Sites

Our Superfund Program continues to achieve remarkable success cleaning up the region's most contaminated sites. EPA has spent nearly $1.2 billion to date on the 110 New England sites on the National Priorities List. Cleanups are underway or have been completed at 75 percent of these sites. While we continue working to clean up Superfund Sites, we are also spending considerable effort pursuing claims against potentially responsible parties for cleaning up sites or reimbursing the government for cleanup costs. We have also made reuse and redevelopment a priority in all of our cleanups.

One of EPA's priorities is to have those responsible for contamination at a Superfund site perform the cleanup. If the parties are unwilling to cooperate, we can issue an order requiring them to carry out the cleanup. Or, we can perform the cleanup ourselves, in cooperation with the state, using funds from the Superfund Trust Fund or appropriated by Congress, and seek to recover the costs from the responsible parties.

Last year, we issued an order requiring the responsible parties at the Sutton Brook Disposal Area Superfund Site in Tewksbury, Massachusetts to remove a temporary stockpile of contaminated soil that had been created as a result of the excavation of drums, containers and contaminated soil on the site. This site, also known as Rocco's Landfill, accepted municipal, commercial and industrial wastes from 1957 to 1988. Our action was an important step in the overall cleanup process.

We also reached successful settlements which will guarantee the cleanup of two major Superfund sites. At the Rose Hill Regional Landfill Superfund Site, the agreement calls for the towns of South Kingstown and Narragansett, Rhode Island, the State of Rhode Island and EPA to share the estimated cleanup costs of $32.7 million. The site is a former municipal landfill and operated as a domestic and industrial waste disposal facility from 1967 to 1983. Runoff from the site led to contaminated soils and groundwater. Over 17,000 people obtain water from wells located within 3 miles of the site. At the Barkhamsted-New Hartford Superfund Site in Barkhamsted, Connecticut, cleaning up groundwater contamination will be conducted by the thirteen responsible parties. The groundwater underlying the site, a former landfill, is contaminated with volatile organic compounds. Many private wells and a municipal water supply well serving an estimated 4,800 people are located within 3 miles of the site.

Last year, we also recovered significant cleanup costs at the National Oil Services Superfund Site, where we settled with over 400 parties, recovering about 70 percent reimbursement of the $1.6 million cleanup costs. The site is a former waste oil storage, treatment, recycling and disposal facility located in West Haven, Connecticut.

Many of our other settlements protected the rights of smaller parties—either parties with limited abilities to pay, or parties that only contributed a very small amount of contamination (also called *de minimis* parties). At the West Site/Hows Corner Superfund Site in Plymouth, Maine, sixty parties resolved their liability for all past and future costs through ability-to-pay settlements with EPA. We also finalized de minimis settlements with small volume contributors at the Beede Waste Oil and Fletcher Paint Works Superfund Sites. These settlements netted $8.6 million dollars for cleanup costs at those two sites, while also releasing the small volume contributors from further liability and protecting them from litigation by other parties. Located in a residential area of Plaistow, New Hampshire, the Beede Waste Oil Superfund Site is heavily contaminated as a result of several waste oil-related operations from the 1920s until 1994. In the second of two *de minimis* settlements for this site, we issued approximately 1,000 settlement offers. With 415 parties accepting, it brings the total number of *de minimis* parties that have settled at the Beede Site to 911. At the Fletcher Paint Works Site in Milford, New Hampshire, Great American Financial Resources and AVX Corporation also agreed to settle their liability as small volume contributors. This settlement protects these parties from contribution claims brought by General Electric, which is cleaning up the site.

De minimis settlements are a way for small volume contributors at Superfund sites to settle directly with EPA and thereby reduce their economic burden.

In addition to environmental and public health protections, stringent regulatory compliance can produce a positive economic benefit. For example, we took a series of actions in 2002 that allowed the sale and safe reopening of the pulp and paper mills in Berlin and Gorham, New Hampshire to proceed. Past contamination at the mills as well as current air violations had become barriers in transferring ownership. As a result, EPA, the State of New Hampshire and Brascan/ Fraser Corporation entered into series of legal agreements that will bring the mills into compliance with the Clean Air Act and Clean Water Act as well as address PCB (polychlorinated biphenyl) contamination at the Berlin pulp mill. In May 2002, the Governor of New Hampshire announced the sale and reopening of the Brascan/Fraser Mills. These mills are vital to the economy of these two northen New Hampshire towns.

In April 2002, we issued a Prospective Purchaser Agreement between EPA and the Pittsfield Economic Development Authority. The agreement is closely tied to the judicial Consent Decree which requires the General Electric Company to clean up PCB contamination in Pittsfield, Massachusetts and the Housatonic River. GE, the City of Pittsfield, and the development authority agreed on a $45 million redevelopment package that includes the transfer of 52 acres of property from GE to the development authority. Under the agreement, the development authority also received a release from liability for existing contamination on the property, making it significantly more marketable and setting the stage for economic revitalization.

Addressing Widespread Non-Compliance

Since the 1990s, our compliance programs have evolved from a pure "command and control" approach to a more cooperative approach on the part of both government and industry. While we continue to maintain a strong enforcement role, we are also developing new ways to achieve environmental compliance. For example, we develop strategies that include coordinated enforcement and compliance assistance activities in sectors where we believe there is significant and wide-spread non-compliance with environmental laws.

Improving Public Sector Environmental Compliance
Public agencies continue to violate numerous environmental requirements. In 2002, enforcement actions were taken against 15 municipalities for alleged violations of oil spill prevention requirements. Many of these municipal facilities were located adjacent to water bodies or have storm water collection systems that would eventually discharge to a waterway. So, if an oil or gasoline spill were to occur, the likelihood of pollutants reaching nearby water is high.

Among the public agencies we took action against last year was the Maine Turnpike Authority, which agreed to pay a $100,000 penalty for allegedly violating federal and state rules governing hazardous waste and oil spill prevention plans. The authority will also spend $184,000 to purchase equipment for a new emergency hazardous materials spills response team in southern Maine. The Maine Emergency Management Agency will organize the team while the turnpike authority will purchase the needed equipment.

The Town of Natick, Massachusetts agreed to pay a $56,775 penalty and perform supplemental environmental projects worth more than $211,000 to settle claims of federal hazardous waste and clean water violations at the town's public works facility. Natick agreed to implement a town-wide pollution prevention plan and an environmentally

Under the Clean Water Act, all facilities storing large amounts of oil that could reach navigable waters are required to create and implement a Spill Prevention Control and Countermeasure Plan to minimize environmental risks from oils spills from onsite tanks. Spills can occur during filling, from tank failures, and from improper maintenance, vandalism or other accidents.

preferable purchasing plan to reduce the amount of chemicals the town purchases and the amount of hazardous wastes generated by the town. Natick will also conduct an environmental assessment of a contaminated area at the 22 acre Pegan Cove Park in order to expand the use of the park.

As a result of this action against Natick, we developed an environmental audit initiative for municipal public works departments with the New England Chapter of the American Public Works Association. The initiative encourages all public works departments in the 1500 New England municipalities to self-audit, disclose and correct violations of environmental statutes. At the end of last year, 335 facilities agreed to participate and 268 disclosures were received. Thus far, we have learned that through the audit initiative there was more environmental cleanup in just one year than traditional enforcement would have accomplished in several years.

Colleges and Universities Leading the Way

To protect the health of their communities and comply with the various environmental laws, colleges and universities grapple with a number of environmental issues both on and off their campuses. Higher education campuses are similar to small cities because they undertake a variety of activities that can generate large volumes of toxic wastes. These activities include operating research laboratories, medical facilities, auto repair facilities, power plants, wastewater treatment plants; disposing of hazardous and solid wastes; supplying drinking water; and maintaining campus grounds. Unfortunately, most colleges and universities have no central authority coordinating environmental practices. Often their internal environmental practices differ from department to department.

EPA's audit policy encourages regulated entities to identify environmental violations, disclose them to us and voluntarily correct them. If specific conditions are met, the policy allows penalty reductions of up to 100%.

In 1999, to help colleges and universities address their problems, we launched an integrated strategy that combines compliance assistance tailored specifically to the needs of these institutions with an aggressive enforcement presence (including unannounced inspections). In the same year, we also began a pilot project with three universities to improve both laboratory management practices and environmental performance. Since the initiative was launched, we have conducted numerous workshops reaching over 1,400 individuals.

This past year, we continued working with New England's 331 college and university facilities to improve environmental compliance through self-auditing and voluntarily disclosing and correcting violations. The goal is to have facilities be responsible for their own environmental performance. As of October 2002, we received an impressive 175 letters from colleges and universities noting their intent to self-disclose violations. In addition, through an EPA grant, we are working with the University of Massachusetts-Lowell to assist three colleges and universities implement guidelines for continuous improvement and environmentally sustainable practices.

In 2002, we continued our enforcement efforts by taking actions against Brown University, Central Connecticut State University and the University of Massachusetts-Amherst. For alleged violations of hazardous waste laws and oil spill prevention rules, Brown University in Providence, Rhode Island agreed to pay a penalty of $79,858 and to perform a supplemental environmental project valued at $285,000.

Under this project, Brown will conduct the following activities at its own school and at four Providence high schools: (1) convert the chemistry laboratories from traditional experimentation to "microscale" chemistry, where much smaller amounts of chemicals are used to train students; (2) implement purchasing and inventory tracking systems to have better control over the number of chemicals used and the hazardous wastes generated; and (3) establish a fund to perform a one-time "clean out" of chemicals and hazardous materials in the high schools to reduce environmental risks.

In a separate yet related project, we are working with a consortium of three universities to test an innovative approach to reducing regulatory inefficiencies while at the same time achieving better environmental performance in laboratories. Under the current regulatory structure, academic research institutions are required to comply with regulations from the Occupational Safety Health Administration (OSHA) as well as with EPA's hazardous waste laws. The project's goal is to eliminate duplicative and inefficient requirements.

Our partners in this project include Boston College, the University of Massachusetts-Boston, the University of Vermont, the Massachusetts Department of Environmental Protection and the Vermont Department of Environmental Conservation. The project will develop and test environmental management plans that will meet both OSHA's and EPA's requirements and effectively manage

laboratory wastes under one document that emphasizes increased training for laboratory staff, faculty and students; reduced waste generation; increased chemical redistribution and reuse; and pollution prevention.

After more than three years, we have learned that a flexible, systematic approach to laboratory management is working, resulting in improved environmental management and understanding of the requirements at all three schools. Training laboratory workers and pollution prevention activities have proven to be extremely rewarding as there are long-term behavioral and attitude changes of staff and students at these schools. As a result of this project and related efforts by other academic groups, EPA is considering new guidance or rule-making for waste management in academic laboratories.

Homeland Security and Emergency Preparedness

The attacks of September 11, 2001 have shown the potential vulnerabilities of certain facilities to possible terrorist attacks. In response, we are vigorously enforcing the laws and regulations that improve the safety of facilities that use, handle, produce or store hazardous chemicals. We are not only enforcing the laws, but also working with local and state emergency planning committees to assist facilities with improving their security and preparedness.

A provision in the Clean Air Act focuses on the prevention of chemical accidents through risk management planning. Because serious chemical accidents impact public health and the environment, industry has an obligation to prevent accidents, operate safely and manage hazardous chemicals in responsible way. It is also important for government and the public to partner with industry for accident prevention to be successful. Eliminating risks from chemical accidents is especially critical for facilities located in densely populated urban neighborhoods.

Ammonia is a chemical commonly used as refrigerant in air conditioning and cooling equipment at many facilities. Airborne ammonia is corrosive to the skin, eyes, and mucous membranes and may be fatal if inhaled. An accidental release of ammonia could threaten the surrounding area, resulting in evacuations or injuries. Last year, we cited several companies, including Dean Northeast (which markets dairy products as Garelick Farms) for allegedly failing to adequately plan for preventing and controlling accidental releases of ammonia. The New England Confectionary Company (NECCO) and Kayem Foods agreed to fines for inadequate risk management planning at their respective facilities located in Cambridge and Chelsea, Massachusetts. In addition, NECCO will design and install an ammonia diffusion system valued at $160,000 at its new location in Revere, Massachusetts.

Chlorine is commonly used as a disinfectant in drinking water and wastewater treatment plants. Toxic and highly corrosive, accidental releases of chlorine can cause serious health impacts. Last year, we sued Danbury, Connecticut and St. Albans, Vermont for allegedly failing to prepare and implement adequate plans to prevent the accidental release of chlorine. Danbury agreed to pay a penalty and spend $320,000 to convert its drinking water plant's chlorine disinfection system to a sodium hypochlorite disinfection system. This conversion will benefit the public health and the environment by eliminating the use of chlorine in the system. The suit involving St. Albans' wastewater treatment facility is still pending.

Risk management planning requires facilities to identify and assess their chemical hazards and carry out certain activities designed to reduce the likelihood and severity of accidental chemical releases. Information is made available to state and local governments and the public in order to work to reduce risks to the community from accidental releases. Such planning facilitates not only local emergency preparedness and response, but also pollution prevention and worker safety.

Promoting Continuous Environmental Improvement Through Environmental Management Systems

While firmly committed to strong enforcement and assistance to achieve improved compliance, we are also striving for new ways to encourage responsible environmental behavior. Among the tools we are using more widely in this regard are Environmental Management Systems (EMSs). Through this approach, facilities are encouraged to adopt sound management practices to address environmental compliance, as well as to address important environmental issues not fully covered by laws and regulations, such as resource depletion and greenhouse gas emissions. An EMS approach is not limited to the private sector, but will in fact be required of all federal facilities.

An Environmental Management System is a systematic approach to ensuring that environmental activities are well managed in any organization. It basically requires an organization to identify the environmental impacts of their operations, decide which ones are the most significant, and then set measurable reduction goals. EMSs vary from one organization to another, but there are common elements such as training, high level management involvement, measurement, and documentation of procedures.

Because an EMS focuses on management practices, the approach can be implemented at facilities of widely varying sizes, complexities, and missions, whether they be offices, laboratories, ships, facilities, programs, or agencies. An EMS can provide a predictable structure for managing, assessing, and continuously improving the effectiveness and efficiency of facility operations. An EMS approach includes a periodic review by top management and emphasizes continuous environmental improvement instead of crisis management.

By itself, an EMS does not guarantee compliance with the law. Regulators, communities, and environmental groups want to see credible evidence that an EMS is being used to ensure environmental compliance and advance environmental goals. EPA is gathering this evidence through its National Environmental Performance Track Program, a voluntary program designed to promote the use of EMSs and to motivate and reward top environmental performance. To participate, facilities must have an environmental management system in place, demonstrate consistently strong environmental performance, including a history of sustained compliance, and commit to making further environmental improvements.

For the federal sector, Executive Order 13148, "Greening the Government Through Leadership in Environmental Management," requires the development of EMSs at federal facilities by December 2005. In cooperation with EPA's Regions 2 and 3, we conducted the first of a series of national workshops for federal agencies in June 2002. More than 170 federal facility managers from Maine to Virginia attended. We also held numerous seminars to assist New England agencies meet their obligations under the Executive Order. Last, but not least, we are developing and implementing EMSs at our regional laboratory in Chelmsford and our main office in Boston.

We are also working to introduce the EMS approach to other sectors—colleges and universities, K-12 schools, hospitals, marinas, and metal finishers. In addition, we are increasingly using an EMS as part of the settlement agreement for enforcement cases. When a facility's compliance problems indicate fundamental failures in the facility's ability to manage its environmental programs, inclusion of an EMS as part of the consent order/ agreement can be an effective way to ensure that the facility develops the infrastructure necessary to ensure long-term compliance.

New England's 33 Performance Track facilities are already seeing the environmental and economic benefits of implementing an EMS. Over the past two years, the facilities have made commitments to 132 environmental improvements that go above and beyond what is required by the law. Among the results: 11 facilities have made operational changes that will result in a reduction of total solid waste generation by nearly 8.3 million pounds—a 9.9 percent reduction over previous levels; 12 other improvements will result in a reduction of total energy use by 5.6 million BTUs, the average energy use of 54,000 households.

Advocating for Superior Environmental Performance

While traditional regulatory approaches keep most forms of pollution in check, additional gains can be made by developing more dynamic ways of improving environmental protection. Often regulations fail to provide positive incentives to motivate companies to do more than is environmentally necessary, that is, to go beyond compliance. Additionally, regulations may not address an emerging environmental issue that requires new solutions. Below is a summary of several of our most innovative projects designed to encourage the regulated community to go beyond compliance.

Corporate Leadership in the Metal Finishing Industry
To move the metal finishing industry towards environmental compliance and beyond, the industry, in partnership with EPA, developed the Strategic Goals Program in 1997. Since then, we have implemented various outreach programs to assist metal finishers in reaching their goals. We have organized workshops, developed tools such as videos and compliance manuals, and established an internship program with the University of New Hampshire that deploys students to do on-site technical assistance. We have also coordinated inspection targeting of metal finishing facilities to try to level the playing field for those companies that are working hard to stay in compliance and meet their goals.

Results so far are exceptional. Four-dozen companies participating in the program have achieved an average 35 percent reduction in water use, a 50 percent reduction in sludge generated and a 58 percent reduction in metals emissions to water since the baseline year of 1992. Unfortunately, many metal finishers are not able to make more progress on their goals because of manufacturing requirements.

Large corporations subcontract most of their manufacturing to small suppliers, a trend that industry analysts predict will increase in the future. For example, 80 percent of a Pratt and Whitney airplane engine is made at facilities that are not owned by Pratt & Whitney. Driven by economics and quality issues, development of working partnerships with suppliers is a growing trend in the manufacturing industry. To take advantage of this trend and help metal finishers who are often third-, fourth- or fifth-tier suppliers to large manufacturers, we developed a Corporate Sponsor Program.

The Corporate Sponsor Program gave Raytheon Company of Massachusetts and Connecticut-based Pratt & Whitney a way to mentor their suppliers, thereby providing technical information and a powerful incentive to small suppliers. The ultimate goal of this program is to write environmental requirements into the contract requirements that companies like Raytheon and Pratt give to their suppliers.

Since the Program's inception in 2001, Raytheon has created an environmental checklist that it uses to perform audits at its metal finishing suppliers. Pratt & Whitney organized an EMS project for suppliers and has put EMS requirements into some of its long-term manufacturing contracts. For the upcoming years, we will expand this industry collaborative to new companies within the region.

Clean Marine Engine Initiative
New England has thousands of ponds and lakes as well as thousands of miles of rivers and coastal waters. These water bodies provide outdoor enthusiasts with vast opportunities to enjoy boating and other recreational activities. Until recently, conventional, two-stroke marine engines powered most recreational boats and personal water craft. These traditional marine engines waste significant amounts of gasoline and oil, and, as a result, discharge up to 30 percent of their fuel directly into the water and air as pollution.

With the cooperation of marine engine manufacturers, EPA issued regulations in 1996 to significantly reduce the amount of pollutants released from outboard and personal water craft marine engines. From 1998 to 2006, the corporate average exhaust emission standards for outboard and personal water craft marine engine manufacturers will become increasingly more stringent. Controlling these exhaust emissions will result in an unprecedented 75 percent reduction in hydrocarbon emissions from these engines by the year 2025. To reach the yearly emissions reductions required by the regulations, it is anticipated that marine engine manufacturers will build increasing numbers of lower emission engines each year.

In 2002, we teamed up with New England state environmental agencies, the Marine Retailers Association of America, the National Marine Manufacturers Association

Low-Pollution Marine Engines Help New England's Environment

- Burn 35 percent to 50 percent less gasoline
- Use up to 50 percent less oil
- Start easier and run quieter
- Reduce smoke and fumes
- Accelerate with more precise throttle response
- Reduce emissions into the air by 75 percent
- Reduce gasoline released into surface waters

and state marine trade associations to launch a New England-wide Clean Marine Engine Initiative to accelerate the sale of new, cleaner outboard and personal water craft engines. Modeled after a successful campaign in New Hampshire, we partnered with New York and the New England states to encourage consumers to purchase low-pollution marine engines which deliver improved performance, reduced fuel and oil usage and dramatically reduced emissions.

Developing New Technologies

Many of our most challenging environmental problems could be solved with innovative technologies. Unfortunately, environmental technology innovators are frequently frustrated by the process of finding the appropriate government programs and resources to assist them in the development of new technologies. EPA's Small Business Innovative Research Program funds small businesses to investigate the commercial feasibility of advanced technologies. Because New England is a leader in technology development, this program is especially important to us.

Last year, we secured $1.5 million from this program to directly target technology development that will address New England's priority environmental problems. For example, discharges from combined sewer overflows and storm water runoff are a major reason why many of the region's rivers and estuaries remain unsafe for swimming and fishing. Arsenic in drinking water is another priority area, especially in states such as New Hampshire where arsenic exists naturally in much of the state's groundwater. Last year, EPA established a new, more stringent standard for arsenic in drinking water that public water suppliers must comply with by 2006. Finally, innovative lead paint removal technologies are needed to reduce the incidence of childhood lead poisoning. We are confident that the 15 projects funded through this research program hold great promise for finding new, cost-efficient technologies to tackle our most serious environmental problems.

Conclusion

Protecting human health and the environment is the mission of EPA New England. The Office of Environmental Stewardship is responsible for improving the environmental performance of businesses, government and the public through compliance with environmental requirements, preventing pollution and promoting environmental stewardship. Over the past year, we have achieved notable success by using a variety of enforcement and assistance approaches that address today's environmental problems and promote environmentally sustainable performance. We hope this report illustrated out problem-solving philosophy. Once again, your feedback is important to us.

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Web Pages of Interest:

For more detailed information on the programs and activities of the Office of Environmental Stewardship, visit: www.epa.gov/ne/compliance

For information on the EPA New England Office visit: www.epa.gov/ne

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