Narragansett Bay Commission

FINAL PROJECT AGREEMENT SIGNED SEPTEMBER 25, 2000

Background

The Project Sponsor: Narragansett Bay Commission (NBC), a publicly owned treatment works (POTW), operates the wastewater collection and treatment system for the greater Providence, Rhode Island, area, including wastewater discharges from approximately 360,000 people and 8,000 businesses. NBC has two treatment plants, the Field's Point wastewater treatment plant and the Bucklin Point wastewater treatment plant. Since initiating its industrial pretreatment program, NBC has reduced its metal and cyanide loadings to its Field's Point treatment plant headworks by more than 94 percent. Through its high level of performance, NBC has received EPA's Pretreatment Excellence Award in 1990 and 1998. In 1994, NBC developed two regulatory/pollution prevention integration programs, NBC Metal Finishing 2000 and CLEAN P2 Regulatory Relief. The programs test new regulatory approaches to improve environmental compliance by the local industrial community.

The Experiment: NBC permits and regulates approximately 100 metal finishing companies. Through Project XL, NBC would like to improve environmental performance of a select number of metal finishing companies by redirecting pretreatment regulatory efforts away from 10 metal finishing companies that have demonstrated superior environmental performance records (Tier 1 facilities) and focus regulatory efforts on 10 companies with lower performance records (Tier 2 facilities). Under this program, Tier 2 facilities would receive technical assistance or pollution prevention audits to help them move toward compliance. The primary goal of this project is to demonstrate that through more efficient use of existing resources and staff time, NBC can achieve measurable improvements in environmental performance. The project's progress and success in meeting its goal will be measured by reductions in pollution and increased compliance at Tier 2 facilities.

The Flexibility: NBC requests modification of the pretreatment regulations for up to 10 metal finishing companies that have established a history of exemplary environmental performance and compliance as an incentive to maintain their performance. NBC also requests flexibility from the Rhode Island Department of Environmental Management (RI DEM) to reduce inspection frequencies and eliminate some monitoring requirements for Tier 1 facilities. This will enable NBC to refocus its resources toward increased pollution prevention audits, technical assistance, and compliance inspections on Tier 2 facilities.

Other Innovations: *(1) Providing Incentives for Exceeding Compliance.* The NBC pretreatment XL project will promote pollution prevention through several activities including identifying source reduction opportunities, process optimization, and input substitution. By reallocating resources from Tier 1 to Tier 2 facilities, NBC hopes to re-direct its resources to improve compliance as well as achieve measurable reductions in pollution that go beyond what is required by regulation. *(2) Transferability to Other POTWs.* This project contains several elements that will be transferable. If successful, the pollution prevention approaches and management practices that occur as a result of the refocusing of resources may be readily transferable to POTWs and industries in many other areas. *(3) Model for EPA Regulatory Reform.* EPA is in the process of streamlining the general pretreatment regulations (Federal Register Vol. 63, No. 140 July 22, 1999, pages 39564-39605). Information gathered as part of this XL project may be used to inform current streamlining efforts.

The Superior Environmental Performance: The primary goal of this XL project is to demonstrate that through more efficient use of existing resources, NBC can achieve measurable improvements in the environmental performance levels of Tier 2 companies while encouraging and assisting Tier 1 companies to maintain or possibly improve their current level of superior environmental performance. By focusing more resources on companies contributing a greater share of the pollutants, the NBC Pretreatment XL program seeks to further reduce metals loadings to the two NBC treatment facilities.

One of NBC's goals is that this XL project will result in several areas of pollution reduction. Over the six years of this project, NBC proposes that the Tier 2 facilities will reduce their process water usage by 25 percent, total metals (which include the regulated metal finishing pollutants along with arsenic and selenium) loadings in their effluent discharge by 25 percent, and their generation of F006, Resource Conservation and Recovery Act-regulated, waste by 25 percent. Progress towards these goals will be evaluated against one year of baseline information collected by NBC for the year preceding selection as a Tier 2 facility. NBC would then compile annual information and report progress toward the 25 percent reduction goals in each annual report. NBC also expects that Tier 2 facilities will improve their compliance rate by 75 percent.

Progress in Meeting Commitments
(As of October 2001)

- EPA has committed to promulgating a site-specific rule that would modify 40 CFR Part 403 pretreatment regulations and define the conditions of Tier 1 and Tier 2 involvement in the NBC XL project.
  - EPA promulgated a federal rule on October 3, 2001, amending the National Pretreatment Program regulations to allow POTWs that have completed the Project XL selection process, including FPA development, to modify their approved local pretreatment programs (65 FR 59738). The POTW will be allowed to modify its programs and implement the new program described in the FPA.
- RI DEM has committed to developing and promulgating a state site-specific rule that incorporates the terms of the federal rule. In addition, RI DEM has committed to:
  - Reissuing NBC's Rhode Island Pollutant Discharge Elimination System permit to incorporate the state rule as discussed above; and
  - Reviewing NBC pretreatment program revisions in a timely manner and approve where appropriate so NBC may undertake the activities described in this FPA.
- NBC is awaiting RI DEM regulatory approval to implement the proposed plan. Once given, NBC intends to:
  - Reallocate any resources saved from less oversight of Tier 1 companies to increasing oversight of the selected Tier 2 companies and focusing attention on other areas of environmental concern;
  - Increase sample screening events for each Tier 2 company from two per year to four per year;
  - Perform an annual pollution prevention audit at each of the Tier 1 and Tier 2 companies;
  - Work with the Tier 2 companies so they may achieve a 25 percent reduction in water usage, F006 waste generation, and total metal concentrations;
  - Work with the Tier 2 companies so they may achieve a 75 percent increase in compliance;
  - Supply summary reports on project progress;
  - Revise NBC's pretreatment program, if necessary, relative to the Tier 1 facilities; and
  - Assist each Tier 1 company with the development and implementation of a multimedia self-audit, environmental compliance plan and audit procedure.

Benefits for the Environment

- The NBC XL project will result in more companies utilizing pollution prevention in place of end-of-pipe treatment; production techniques that use less water; lower Toxic Release Inventory emissions; less hazardous waste generation by participating companies; fewer overall industrial user violations; more companies

participating in NBC's pollution prevention technical assistance efforts and programs; and higher-quality wastewater discharges.

Benefits for Stakeholders

- NBC will reduce the self-monitoring requirements for Tier 1 companies, which means that less time and money will be spent on monitoring by these companies.

- Cost savings employed by the elimination or reduction of the frequency for the need to monitor for pollutants not present in a waste stream can be used to increase the frequency of tests made on problematic constituents, employee training, and/or pollution prevention initiatives.

- Comments from all other organizations and individuals are welcomed throughout the stakeholder process and active stakeholders will receive semiannual updates on progress of the XL project from NBC. Updates will also be available on EPA's Web site.

Benefits for the Project Sponsor

- As part of this project, NBC will reduce its regulatory oversight (i.e., compliance inspections) for the up to 10 Tier 1 metal finishing companies.

- Time and effort saved by NBC regulatory personnel conducting fewer inspections of companies that meet appropriate Project XL criteria will allow for more focused attention on compliance inspections, monitoring and regulating more problematic (Tier 2) companies.

Information Resources: The information sources used to develop this progress report include: (1) the FPA for Narragansett Bay Commission, signed September 25, 2000; (2) the EPA Office of Wastewater Management National Pollutant Discharge Elimination System Web page (*http://cfpub1.epa.gov/npdes/*); and (3) the *2000 Project XL Comprehensive Report, Volume 2: Directory of Project Experiments and Results*, November 2000.

National Aeronautics and Space Administration White Sands Test Facility

FINAL PROJECT AGREEMENT SIGNED SEPTEMBER 22, 2000

Background

The Project Sponsor: The National Aeronautics and Space Administration (NASA) White Sands Test Facility (WSTF) is located approximately 18 miles northeast of Las Cruces, New Mexico and operates as a field test installation for the NASA Lyndon B. Johnson Space Center in Houston, Texas. The facility also provides test service and support for the Department of Defense, Department of Energy, private industry, and foreign government agencies. The primary WSTF mission is to develop, qualify, and test the limits of spacecraft propulsion systems and subsystems. The installation also operates several laboratory facilities that conduct compatibility and material test protocols.

The Experiment: NASA WSTF proposes to consolidate, streamline, and simplify the collection, management, reporting, and archival of environmental compliance data required by EPA and several different bureaus in New Mexico's Environment Department (NMED). This project provides a unique opportunity for EPA and NMED to construct, implement, test, and operate a bureau-wide reporting system that will provide regulatory reports and supplemental information on a Web-based information management and regulatory reporting system. This XL project can be characterized by six primary elements: regulatory relief and flexibility; CD-ROM submittal and Web page construction; e-mail submittal notifications; public access section; testing, technical training, and permit modification phase-in; and graphics interface and archival abilities.

NASA estimates that cost savings will be immediately achieved after implementation of this system through reduction of paper, postage, and personnel requirements. Cost savings associated with these benefits will be redirected to site-specific projects during the implementation of the plume-front remediation system and its associated extensive well drilling effort. The primary benefit of redirecting additional funding for the plume-front capture and source area remediation is additional resources to ensure timely completion of the project. Additionally, personnel resources can also be redirected to active waste minimization programs that will promote site-wide affirmative procurement, recycling, and proactive environmental management system implementation. Specific cost savings are displayed in Table 13.

The Flexibility: The proposed Web-based system will not eliminate any regulatory reporting requirements, but only modify the current format, delivery method, and archival procedures. In this project, NASA WSTF requests regulatory flexibility from applicable existing EPA and NMED reporting regulations that specify submission of a paper report or written signature. Specifically, NASA is seeking regulatory flexibility in order to electronically report the following:

- Allow the electronic submission of the annual Post-Closure Care written reporting requirements issued by the NMED Solid Waste Bureau as specified in Permit No. 8800019434-2.
- Allow the electronic submission of permit modification requests as specified by 40 CFR §270.42. This regulatory relief will include the ability to electronically transfer the signatory to permit applications and report requirements of §270.11.
- Allow the electronic submission of quarterly and semiannual reports as specified by NMED Groundwater Bureau Discharge Plans DP-392, DP-697, DP-584, and DP-1170.
- Allow the electronic submission of regulatory reports as specified by all sections of Air Quality Control Permit No. 329-M-1.
- Allow the electronic transfer of groundwater monitoring data and status reports from the 700 Area Landfill as required by the Closure and Post-Closure Care Plan issued by the NMED Solid Waste Bureau.

Table 13: Projected Costs and Benefits for NASA under Project XL

Item	Quantity	Cost Saving	Time
Personnel	4,000 Hours*	$140,000**	Annually
White Paper	N/A	$1,000	Annually
Copy Center	1,000 Hours***	$35,000	Annually
Postage	N/A	$500	Annually
Request for Supplemental Information and Notice of Deficiencies	To Be Determined	Approximately $10,000	Annually
Total Annual Cost Savings		**$186,500**	
Five-Year Estimated Cost Savings		**$932,500**	

*Approximately two full-time employees' labor per year.
**Based on loaded average labor cost of approximately $35/hour.
***Approximately one half-time employee per year.

- Allow the electronic transfer of progress reports, data, and supplemental information regarding the plume-front remediation system to the Groundwater Bureau and Hazardous and Radioactive Materials Bureau.

- Minimize the hard copy archival requirements of the §3008(h) Consent Order, the Post-Closure Care Permit, and the Resource Conservation and Recovery Act Hazardous Waste Operating Permit by allowing recordable CD-ROM storage of archive data.

- Allow the electronic submission of the §3008(h) regulatory requirements for written monthly status reports currently submitted to the Secretary in triplicate.

Other Innovations: *Implementing a Web-based Information Management and Regulatory Reporting System.* This Web-based information management and regulatory reporting system will save resources, including document preparation time, white paper usage, and triplicate reproduction requirements. A Web-based information management system will have several benefits over the existing reporting system, which is largely paper-based. Web-based information management will provide more real-time, user-friendly data. This will enhance communications with other agencies by providing immediate access to detailed environmental compliance information, including graphical illustrations of current conditions, access to the groundwater monitoring database system, and an electronic archive of historical documentation. The information contained in the NASA Web-based system would be sufficient to satisfy current regulatory requirements; only the format, delivery method, and data archival procedures would be modified.

The Superior Environmental Performance: To achieve superior environmental performance, this project seeks to do the following:

- Provide real-time desktop access to environmental compliance report deliverables and associated data;

- Consolidate multi-bureau reporting requirements into one system;

- Provide public access to encourage participation in federal facility compliance activities;

- Increase intrabureau personnel communication and encourage comprehensive review of data by allowing desktop access to data;

- Provide graphical presentations to increase visualization of WSTF conditions and data interpretations and enhance environmental management;
- Archive data that can be easily accessed for determinations of past results and comparisons to current conditions;
- Eliminate hard copy reports in triplicate (some documents require five copies); and
- Ensure the project is simple and easily transferable to other federal facilities and private sector entities throughout the United States wishing to pursue a similar type of system.

Progress in Meeting Commitments
(As of August 2001)

- EPA committed to initiate a rule-making effort to provide appropriate legal mechanisms to initiate the project and allow NMED and NASA to implement the project.
  - The Final Project Rule (Phase I) is awaiting EPA Headquarters approval.
  - Although the project rule is pending, NASA WSTF is currently submitting the monthly groundwater activity report to the NMED Hazardous Waste Bureau (HWB) on CD-ROM. The personnel at HWB have stated that the electronic format of the monthly report is superior to the previous hard copy submittals and that it provides monthly data in an organized, simplified, and easily reviewed format.
- NASA committed to ensuring that on-site training regarding electronic deliverables is provided to NMED personnel by trained information technology specialist WSTF personnel.
  - NASA has provided NMED HWB staff with training on CD-ROM reporting format and usage instructions. Additional training is pending approval of rule making.

Benefits for the Environment

- Cost savings achieved as a result of this project will permit funding to be redirected to site-specific projects, such as the implementation of the plume-front remediation system.
- With increased visualization of WSTF conditions and data interpretations made possible from data portrayed graphically, environmental management of the testing facility and the plume-front remediation will be enhanced.

Benefits for Stakeholders

- The online reporting system will provide EPA, NMED, and the public with improved access to up-to-date regulatory information, scientific data, and analytical tools.
- Improved access to regulatory information, scientific data, and analytical tools will allow for more accurate environmental information trading between NMED bureaus.

Benefits for the Project Sponsors

- Cost savings through the reduction of personnel requirements, white paper usage, copy center fees, and postage will be redirected to support site-specific projects (i.e., plume-front remediation system).
- By allowing electronic submission, this project will simplify the transfer of progress reports, data, and supplemental information regarding plume-front remediation system.

Information Resources: The information sources used to develop this progress report include: (1) the Final Rule adopted by EPA on September 22, 2000, and (2) the *Project XL 2000 Comprehensive Report, Volume 1: Directory of Regulatory, Policy; and Technology Innovations, and Volume 2: Directory of Project Experiments and Results,* November 2000.

New England Universities' Laboratories

FINAL PROJECT AGREEMENT SIGNED SEPTEMBER 28, 1999

Background

The Project Sponsor: Boston College, the University of Massachusetts-Boston (UMass-Boston), and the University of Vermont (UVM) make up the New England Universities' Laboratories XL consortium. The management and disposal of chemical waste from laboratories is a significant issue for the universities; laboratory waste management accounts for the most substantial expense for their environmental, health, and safety programs (see Figures 42 and 43). Boston College, with more than 13,000 students, has approximately 130 research and teaching laboratories and is classified as a small quantity generator under the Resource Conservation and Recovery Act (RCRA). UMass-Boston, with over 12,000 students, and UVM, with 10,000 students, are considered by EPA to be large quantity generators (LQGs). EPA considers UVM, which manages nearly 600 labs, a LQG because it generates more than 1,000 kilograms (2,200 pounds) of RCRA hazardous waste in a single month (UVM also has a permitted storage facility). Under a different part of the regulation, UMass-Boston, with over 100 labs, is classified as an LQG because it surpasses the 1 kilogram (2.2 pound) per month threshold for generation of acutely hazardous waste.

Figure 42
Laboratory waste awaiting collection.

Figure 43
Chemical storage in a university laboratory.

The Experiment: The Universities' Laboratories project intends to test the integration of RCRA hazardous waste regulations with Occupational Safety and Health Act (OSHA) regulations by requiring that the universities develop a plan similar to the OSHA-required Chemical Hygiene Plan (CHP). As a result of the harmonization of the OSHA CHP and the RCRA-oriented Laboratory Environmental Management Plan (EMP), the new system will include best management practices to actively encourage chemical reuse and recycling, enhance conformance with internal policies and procedures, increase efficiency, and better educate laboratory professionals and researchers. This performance-based system is developed around a Laboratory Environmental Management Standard, which defines the performance-based criteria for the effective management of laboratory wastes. To achieve the objectives outlined in the Laboratory Environmental Management Standard, the universities are testing a two-part regulatory model that includes (1) Minimum Performance Criteria for the management of laboratory wastes and (2) the development of a Laboratory EMP, which is a document that describes how each university will conform to the Environmental Management Standard and the Minimum Performance Criteria. The new system is expected to provide a better management approach for research laboratories and to result in increased pollution prevention while still ensuring protection of human health and the environment.

The Flexibility: EPA published a new site-specific rule that creates a pilot performance-based system for managing laboratory waste at these three universities. This new Laboratory Environmental

Management Standard defines criteria for the effective management of laboratory waste and incorporates requirements detailing the organizational responsibilities and the training requirements of each participating university. EPA and the environmental agencies for Massachusetts and Vermont are providing the universities with a temporary conditional deferral from two specific RCRA regulations dealing with Hazardous Waste Determinations and Satellite Accumulation Provisions. Under the XL rule, participating universities formally defer the hazardous waste determination from the laboratory to a central on-site location. This should allow the universities' environmental health and safety professionals to more effectively manage the laboratory waste at the institutional level and thus increase reuse and recycling opportunities. Under the XL rule, the permissible time for waste pickups when laboratory waste held in the laboratories reaches 55 gallons is extended from just 3 to 30 days. This flexibility allows for a more coordinated and efficient pickup and delivery system, which frees up staff time and prevents many of the compliance problems associated with unscheduled, time-critical pickups.

The Superior Environmental Performance: The environmental benefits of this XL project are broadly defined in four categories: (1) risk reduction through the use of a "hazardous chemicals of concern" (HCOC) inventory and periodic laboratory inspections; (2) pollution prevention, including laboratory waste reduction, reuse, and redistribution; (3) enhanced environmental awareness of laboratory workers as measured by an annual survey; and (4) improved conformance with university waste management policies and procedures. By offering regulatory flexibility to the participating universities in conjunction with the EMPs, EPA, the Massachusetts Department of Environmental Protection (MADEP), and the Vermont Department of Environmental Conservation (VTDEC) are evaluating the effectiveness of offering flexibility in waste determination and accumulation time in order to encourage the more efficient management of hazardous waste at the university level as well as recycling, reuse, and pollution prevention efforts at universities. The information that will be gained on the project's environmental benefits may be used by EPA to develop a framework to address the potential transferability of this type of regulatory flexibility to university laboratories at large.

Progress in Meeting Commitments
(As of August 2001)

- Each university committed to complete a baseline report of current laboratory waste collection and disposal practices, the amount of waste generated and disposed of by each university, a HCOC inventory, and a survey of laboratory workers' environmental knowledge.
  - The universities completed the baseline assessment on June 28, 2000.
  - UVM completed its HCOC survey on March 31, 2001. UMass Boston is developing a tracking system for a campus-wide inventory/HCOC, to be completed by January 2002. Boston College has determined that using the full chemical inventory does not meet the needs for the HCOC survey and has been in the process of completing its HCOC list and will incorporate HCOC surveys into refresher training during September and October 2001. The initial risk evaluation survey of the three universities was completed spring 2000.
  - All three participants have completed two rounds of surveys of laboratory workers.
- EPA committed to promulgating a site-specific rule providing the legal mechanism for piloting the new environmental management system in the FPA.
  - The final rule was published in the Federal Register on September 28, 1999. The rule, which applies only to the three participating universities, expires on September 28, 2003.
- The State of Vermont committed to promulgating a state-specific rule through revisions to the Vermont Hazardous Waste Management Regulations covering the participation of UVM.

Table 14: Environmental Goals and Indicators

#	Performance Type	Purpose	Environmental Performance Indicators	Goal
1	Pollution Prevention and Risk Reduction	Annual surveys of HCOC	HCOC on shelf that exceed institution defined "shelf-life"	All HCOC on shelf are within defined "shelf-life"
2	Pollution Prevention	Verify annual surveys of HCOC	Surveys completed	100% completion of surveys each year
3	Pollution Prevention	Conduct pollution prevention opportunity assessments	Assessments completed	One opportunity per laboratory per year
4	Pollution Prevention	Measure hazardous materials reuse and redistribution	Amount reused or redistributed within the institution (normalized and compared with and without RCRA in the lab) and cost savings	20% increase in reuse/redistribution from baseline over life of project (with attendant reduction in waste disposal)
5	Pollution Prevention	Measure laboratory waste generation rates	Total laboratory wastes per institution (normalized and compared with and without RCRA in the lab) and cost savings	10% reduction of hazardous waste from baseline over life of project
6	Environmental Awareness and Risk Reduction	Assess environmental awareness of laboratory workers	Survey scores	Scores demonstrate improvement over life of project (note: the same people will not be necessarily be tested)
7	Environmental Awareness	Provide environmental awareness training to a more diverse group	Students in teaching labs and laboratory workers receiving training	Increase number or percentage of students and lab workers receiving training
8	Compliance	Evaluate environmental management program effectiveness	Objectives and targets	Achievement of objectives and targets
9	Compliance	Audit environmental management plan conformance	Report of auditor	Report improvement

  - Revisions to the Vermont Hazardous Waste Management Regulation became effective on March 28, 2000. Until the rule expires, September 20, 2003, UVM is not subject to the requirements of Sections 7-202, 7-301, 7-303, 7-305(b), and 7-310 of the Regulations.

- The State of Massachusetts committed to promulgating a state-specific rule that incorporates the terms of the Federal Rule within 18 months from the date that the Federal Rule is finalized.

  - MADEP finalized a state-specific rule in May 2001, allowing the universities to proceed with the project with the increased regulatory flexibility under 310 CMR 30.355, 30.501, 30.601, and 30.801.

- Each university, working in collaboration with the agencies, committed to develop a Laboratory EMP within six months of the effective date of the FPA. This plan includes policies, procedures, and practices consistent with the Minimum Performance Criteria and the Laboratory Environmental Management System Regulations at 40 CFR part 262, Subpart J. EPA committed to review and comment on the EMPs within 30 days of the receipt and VTDEC committed to review and approve or disapprove the EMP for UVM.

  - The agencies reviewed and commented on the draft EMPs in March and April of 2000, and final comments for Boston College and UMass-Boston were provided in

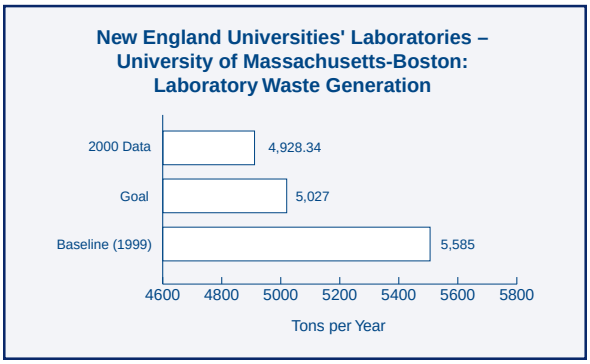

Figure 44
UMass-Boston laboratory waste generation.

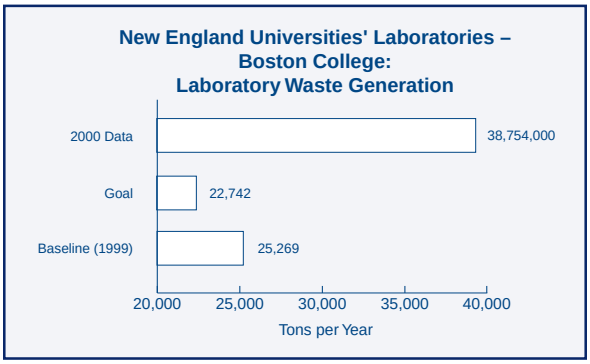

Figure 45
Boston College laboratory waste generation.

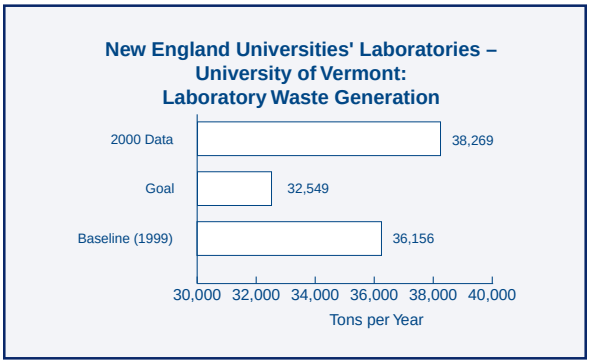

Figure 46
University of Vermont laboratory waste generation.

Table 15: Reduction of Annual Generation of Laboratory Wastes

	Boston College	UMass–Boston	UVM
Baseline (1999)	25,269 pounds	5,585 pounds	36,156 pounds
2000 Data (Percent change)	38,754 pounds (+57%)	4,928.34 pounds (-11.76%)	38,269 pounds (+4%)
Goal (Percent change)	22,742 pounds (-10%)	5,027 pounds (-10%)	32,549 pounds (-10%)

May. Boston College implemented its EMP as of September 1, 2000. UMass-Boston implemented its EMP on October 6, 2000. UVM's EMP was approved by VTDEC in December 2000 and was implemented as of January 2001.

- Each university committed to provide to its laboratory workers initial training and information on the EMP and to continue training throughout the life of this laboratory XL project.
  - Training at Boston College and UMass-Boston began in fall 2000. UVM initiated training in March 2001. Training is an ongoing process.
- Each university will be responsible for collecting data and monitoring its environmental performance using the Environmental Performance Indicators (EPIs) created for this XL project, which will be reviewed by EPA and each university's individual stakeholder groups (see Table 14). Each university will also take appropriate steps to evaluate compliance and address any nonconformance within its Laboratory EMP within 12 months of the effective date of this FPA.
  - Monitoring began in fall 2000. A First Year Status Update was submitted December 28, 2000. The complete First Year Progress Report was submitted June 28, 2001. The reports are available at *http://www.c2e2.org*.
- The Laboratory XL project commits the universities to achieve better results, with the goals of 10 percent reduction in waste from the baseline (see Table 15).
  - In 2000, UMass-Boston decreased their annual generation of waste by nearly 12 percent, surpassing the 10 percent reduction goal. (See Figure 44).
  - Waste generation at Boston College increased by 57 percent in 2000. (See Figure 45). It is estimated that this increase is due to an increase in waste generation by the Chemistry Department. On average, the Chemistry Department generates 96 percent of all laboratory waste at the college. There are a few factors that could account for increases in waste generation by the Chemistry Department. For example, in 2000 several laboratories in the Chemistry Department were moved (thereby generating additional waste from laboratory cleanouts); two laboratories started doing more wet chemistry; and the number of laboratory workers (graduate students, post-doctoral fellows, and undergraduate students) increased.
  - Laboratory waste at UVM increased by 4 percent in 2000, primarily due to laboratory cleaning and disposal of old chemicals. (See Figure 46).
  - The total quantity of laboratory waste generated at each university reflects the varying types of research conducted at the different institutions, the different types and sizes of laboratory rooms, and the different approaches to waste management.
  - It is important to note that the defined pollution prevention goals in the FPA were intended to be reasonable targets. Because of the great variability in research activity from year to year, and the realities of the research culture and grant cycles, it is difficult to commit to aggressive, quantifiable reductions in laboratory wastes. The project seeks to demonstrate superior environmental performance through a clear pattern of pollution prevention, compliance and enhanced environmental awareness.
- Another goal in this XL project is to achieve 20 percent increase in reuse of redistribution of chemicals from measured baseline. Currently, less than 1 percent of all laboratory waste produced in university labs is estimated to be reused.
  - All three universities have the infrastructure in place to begin collecting and redistributing laboratory waste for reuse.

Although the three universities have promoted reuse training and started collecting waste for potential reuse, institutional redistribution has not yet begun.

Benefits for the Environment

- Increased awareness by laboratory staff and students of the importance of handling hazardous chemicals, reducing chemicals, and properly disposing of chemicals may result in more efficient use, and reuse, of laboratory chemicals. The project seeks to enhance both the safety and environmental aspects of chemical management at university laboratories. Through better chemical management coupled with pollution prevention, environmental impacts are expected to be reduced.

- Through inventory and self-inspection activities, laboratories are gaining a better understanding of the types of highly hazardous chemicals that are being used and disposed. As a result of this increased awareness within the lab, the institutions can, over time, accomplish their goal of reducing HCOC use and increasing chemical reuse with the associated environmental, safety, and health benefits of reduced risk of fewer hazardous chemicals and greater control on those hazardous chemicals that remain.

- The universities will reduce the overall amount of hazardous waste generated and increase the use of laboratory waste over the life of the project.

Benefits for Stakeholders

- Implementation of the EMPs in each of the laboratories on campus will increase laboratory workers' familiarity with and knowledge of proper laboratory waste disposal methods and increase awareness of possibilities for chemical reuse and recycling. Laboratory workers in university settings often graduate to become the laboratory workers in industrial settings. The benefits of this project include the additional training and hazard awareness of the next generation of researchers, chemical handlers, and problem solvers.

Benefits for the Project Sponsors

- Deferral of hazardous waste determination from the laboratory to a central on-site location will allow for more effective management of laboratory waste at the institutional level and thus increase reuse and recycling opportunities.

- Increase of permissible time for waste pickups from 3 to 30 days will allow for a more coordinated and efficient pickup and delivery system, which frees up staff time to concentrate on training and pollution prevention opportunities.

- The development of infrastructure and training designed to increase waste minimization and an organized and coordinated campus-wide chemical reuse system will result in decreased environmental impact of operations.

Information Resources: The information in this summary comes from the following sources: (1) the FPA for the New England Universities' Laboratories Project, September 1999; (2) Project XL Site Specific Rulemaking for University Laboratories, Final Rule, published in the Federal Register September 28, 1999; (3) Amendments to Vermont's Hazardous Waste Management Regulations, March 2000; (4) Boston College's Draft EMP, April 2000; (5) New England Laboratories Focus Groups conducted in 1999 and presented in the *Project XL Stakeholder Involvement Evaluation* (October 2000); (6) New England Laboratories Project XL Baseline Assessment, June 28, 2000; (7) New England University Laboratories Project XL First Year Progress Report, June 28, 2001; and (8) the *2000 Project XL Comprehensive Report, Volume 2: Directory of Project Experiments and Results*, November 2000.

New Jersey Department of Environmental Protection Gold Track Program

FINAL PROJECT AGREEMENT SIGNED JANUARY 19, 2001

Background

The Project Sponsor: In November 1996, the New Jersey Department of Environmental Protection (NJDEP) embarked on the development of a two-tiered environmental performance system, the Silver and Gold Track Program for Environmental Performance, which rewards participating facilities for committing to high standards of environmental achievement. The Silver Track portion of the program was implemented in September of 1999 and includes baseline incentives such as expedited permitting, consolidated reporting, and facility recognition. As New Jersey continues to face numerous environmental management challenges related to its industrial history, the nature of its economy, high population density, and intensive land development patterns, the implementation of the Silver and Gold Track Program is viewed as an innovative strategy to promote high standards of environmental protection throughout the state.

The Experiment: NJDEP is working on a statewide XL approach to its experimentation with the Silver and Gold Track Program for Environmental Performance. The Silver Track II tier provides moderate levels of operational incentives that do not require the granting of federal regulatory flexibility. In contrast, the Gold Track tier will seek to test the concept of providing some federal regulatory flexibility based on a higher level of environmental commitment made by the participating facility. Under this project, NJDEP would be responsible for oversight of participating facilities and would be empowered to administer, via the XL mechanism and to the greatest extent possible, all of the flexibility described in the Gold Track FPA and media-specific addenda.

The Flexibility: The Gold Track proposal will use the XL mechanism to enable NJDEP to negotiate federal regulatory flexibility as an incentive under Gold Track. The FPA includes an outline of the process and criteria for admission into and administration of Gold Track. Specific regulatory flexibility is presented and described in media-specific addenda to the FPA, which also describe qualifications for that flexibility and any rule making necessary to make the project legally enforceable. There are currently three media-specific addenda to the FPA, all of which were signed on January 19, 2001: an air-specific addendum, a Resource Conservation and Recovery Act-specific addendum, and a water-specific addendum. NJDEP is currently undergoing rule making to codify the regulatory flexibilities offered under the Gold Track tier. This tier will be implemented in early 2002 as a pilot limited to no more than nine facilities. EPA is also doing a rule making, not yet proposed, to implement some aspects of the FPA.

The Superior Environmental Performance: The following represent the range of "beyond compliance" environmental benefits that could be expected from Gold Track participants:

- Reduced carbon dioxide (CO_2) and other greenhouse gas (GHG) emissions by 3.5 percent over 1990 levels by 2005;
- Increased use of environmental management systems;
- Increased levels of recycling and reuse of hazardous waste;
- Reduced emissions of signature pollutants in addition to CO_2 (nitrogen oxides and volatile organic compounds), and certain hazardous air pollutants such as mercury; and
- Greater use of comprehensive facility monitoring and consolidated targeted environmental tracking and reporting.

Progress in Meeting Commitments

The FPA was signed in early 2001. The commitments outlined in the FPA are summarized below:

- EPA and NJDEP are committed to a concurrent, cooperative process to modify federal regulations and implement new state regulations to codify the regulatory flexibilities offered under the Gold Track Program.

- EPA is committed to doing a rule making, not yet proposed, to implement some aspects of the FPA.

- NJDEP has committed to develop and promulgate a state-specific rule that incorporates the terms of the federal XL rule. Once that is finalized, an application will be developed for companies interested in participating.

- Facilities that are in compliance with all environmental obligations, have a superior compliance history, confirm participation in programs that promote responsible environmental practices, and have a good environmental record will be able to apply to the Gold Track Program. Facilities that apply must have established and implemented an environmental management system and community outreach program prior to acceptance.

- Companies participating in the Gold Track Program will have a superior compliance history, and work toward superior environmental performance in a number of areas, including planning, pollution prevention and control, and resource use minimization. Participating facilities will negotiate covenants with NJDEP following their acceptance. A covenant will be used as an instrument to memorialize both the environmental commitments made by each Gold Track participant and the flexibilities offered by NJDEP. Accountability for enforceable commitments will be ensured through the Gold Track rule makings, site-specific compliance plans, and facility permits.

- The Department envisions that the following reporting provisions will be required of all Gold Track participants: an annual emission statement, an annual report on covenant commitments, self-reporting on problems with meeting commitments, "plain language" community outreach reports, GHG emission reduction annual report, and a five-year emission trends/covenant reassessment report.

- EPA and NJDEP will hold periodic performance review conferences to assess the state's progress in implementing the Gold Track Program. This periodic review may include an annual stakeholder meeting with participating facilities.

Benefits for the Environment

- Gold Track companies will demonstrate innovative approaches to environmental improvements across media. Environmental benefits will include implementation of an environmental management plan, reduction of emissions, discharge of cleaner water, resource use minimization, and production of less waste.

Benefits for Stakeholders

- Local residents around facilities participating in Gold Track can benefit from the company's participation by experiencing lower air emissions, cleaner water discharge, and less runoff during storms, among other environmental/quality of life improvements.

- Industries participating in the Gold Track Program can expect a return on the investment in environmental performance. Reduced disposal fees, lower permit costs, lower electricity and water bills, and reductions in paperwork and reporting are all possible.

Benefits for the Project Sponsor

- The Gold Track Program gives NJDEP a balanced incentive package to encourage facilities across the state to strive for greater environmental performance.

Information Resources: The information in this summary comes from the following sources: (1) the FPA for the New Jersey Department of Environmental Protection Gold Track Program, signed January 19, 2001; and (2) the *2000 Project XL Comprehensive Report, Volume 2: Directory of Project Experiments and Results*, November 2000.

New York State Department of Environmental Conservation

FINAL PROJECT AGREEMENT SIGNED JULY 12, 1999

Background

The Project Sponsor: The New York State Department of Environmental Conservation (DEC) was created on July 1, 1970, to bring together in a single agency all state programs directed toward protecting and enhancing the environment. The New York State DEC is responsible for administration and enforcement of the New York State Environmental Conservation Law. The New York State DEC has three main functions: natural resource management, environmental quality protection, and the promotion of human health, safety, and recreation.

The Experiment: The New York State DEC project would allow public utilities located in New York State to consolidate hazardous wastes generated at remote locations (e.g., manholes). The project will allow the utilities to consolidate the waste at a central collection facility for up to 90 days before transport and disposal, rather than having to transport by piecemeal such wastes directly to permitted hazardous waste treatment/disposal facilities.

The Flexibility: Resource Conservation and Recovery Act regulations generally require utility companies that generate hazardous wastes at remote locations to transport such wastes directly to treatment, storage, and disposal facilities. Under this project and its site-specific rule, the participating utilities will instead be able to transport the waste to off-site central collection facilities, where they may consolidate waste within 90 days. In addition, participating utilities will be allowed to submit a single biennial report for the central collection facility, rather than for each remote location from which hazardous waste is generated.

The Superior Environmental Performance: The project requires each participating utility to reinvest one-third of its direct cost savings into one or more new environmentally beneficial projects; reduces the risk of hazardous waste releases at remote locations while avoiding traffic disruptions; allows the consolidation of similar wastes at central collection facilities, which will reduce the number of vehicle trips to often distant treatment, storage, and disposal facilities; and simplifies existing paperwork and reporting requirements.

Progress in Meeting Commitments

(As of August 2001)

- EPA published a Final rule that will allow participating New York State utilities to consolidate hazardous waste generated at remote locations. The rule became effective January 10, 2000.
- On February 23, 2000, New York State DEC issued an enforcement directive that allows the state to proceed with implementing the XL project until it publishes its own state rule.
- On October 7, 1999, the Atlantic States Legal Foundation and other parties filed a Petition for Review of EPA's Final Project XL Rule for New York State Public Utilities in the U.S. Court of Appeals for the District of Columbia Circuit. EPA is continuing to discuss settlement options with the petitioners.

Benefits for the Environment

- This project will increase public safety by facilitating and requiring the expeditious removal of hazardous wastes from remote locations.

Benefits for Stakeholders

- Public utilities should realize considerable direct-cost savings through more efficient transportation use from centrally consolidating hazardous wastes and thereby reduce the number of lengthy trips made by waste transporting vehicles.

- The project also will eliminate the need to report remote locations under separate identification numbers and will allow the participating utilities to biennially report waste generated at separate remote locations.

- Overall, the results of this project will minimize unnecessary paperwork and more efficiently use time and labor resources.

Benefits for the Project Sponsor

- This project will bring about a significant reduction in paperwork and savings in time and labor, both for public utilities and environmental regulatory agencies, which can then redirect such resources to other environmental needs.

Information Resources: The information sources used to develop this progress report include: (1) the December 1999 *Project XL Progress Report—New York State Department of Environmental Conservation* (EPA-R-00-0017); (2) the Final rule adopted by EPA on July 12, 1999; and (3) the *2000 Project XL Comprehensive Report, Volume 2: Directory of Project Experiments and Results*, November 2000.