NEW ENGLAND UNIVERSITIES PROJECT XL
FINAL PROJECT AGREEMENT (FPA)

July 22, 1999

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APPENDICES

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I. INTRODUCTION

A. Project Signatories

The project signatories to this Final Project Agreement (FPA) are the U.S. Environmental Protection Agency (EPA), the Massachusetts Department of Environmental Protection (MADEP), the Vermont Department of Environmental Conservation (VTDEC), Boston College (BC), University of Massachusetts - Boston (UMass - Boston) and the University of Vermont (UVM) collectively referred to hereinafter as the Project Signatories. The terms "Universities" and "XL Participants" refer to the academic institutions mentioned above.

B. Purpose of the XL Program

This FPA states the intention of the Project Signatories to carry out a pilot project as part of EPA's "Project XL" program which tests innovative approaches to environmental protection. Project XL is an EPA initiative to test the extent to which regulatory flexibility, and other innovative environmental approaches, can be implemented to achieve both superior environmental performance and reduced economic and administrative burdens. (See 60 FR 27282).

C. Purpose of this FPA

This FPA is a joint statement of the Project Signatories' plans and intentions with respect to the New England Laboratories XL Project ("Laboratory XL Project"). This FPA outlines the details of how the project will be implemented and measured and proposes the Laboratory Environmental Management Standard upon which the regulatory flexibility will be based. This FPA accompanies a site-specific federal rule which is being published in a Federal Register notice and which fully outlines the specific legal mechanism for piloting the new environmental management system outlined in this FPA. Under the proposed new system, each of the Universities would develop and implement a Laboratory

Environmental Management Plan which would describe how the University will conform with all elements of the site-specific rule, including the Minimum Performance Criteria.

The Laboratory XL Project proponents initially proposed this jointly drafted FPA. They include the Universities noted in paragraph I.A., above, with ML Strategies, Inc. as their consultant and facilitator for the project. The Laboratory XL Project is being reviewed and commented on by MADEP and VTDEC. EPA is both a reviewer of the project and author of the federal regulatory changes that are required to implement the project. As the project proponents, the Universities and their consultant will provide project information and respond to requests for additional information and analysis.

This FPA sets forth the plans of the various signatories and represents the firm commitment of each signatory to support the XL process, the site-specific rulemaking and the development and implementation of the Environmental Management Plans necessary to fully carry out this Laboratory XL Project. The FPA is not, however, intended to create legal rights or obligations and is not a contract, a final agency action or a regulatory action such as a permit or rule. This FPA does not give anyone a right to sue the Project Signatories for any alleged failure to implement its terms, either to compel implementation or to recover damages.

As described below in Section II.E., EPA has proposed a site-specific rule, and EPA and the proponents will work with the MADEP and VTDEC to execute the necessary legal mechanisms to implement the Laboratory XL Project at the state level. Both MADEP and VTDEP will execute these legal mechanisms within sixty (60) days of the date of this FPA. The Federal regulation and state legal mechanisms will create legal rights and obligations. Any rules promulgated or issued to implement the Laboratory XL Project would be enforceable as provided therein and to the same extent as under applicable law.

The FPA does not waive, change or substitute the public participation requirements applicable to rules and permits.

This FPA and materials relating to this project are available on the Project XL Web Site at http://esf.uvm.edu/labxl and at the EPA's New England Laboratories' Project XL Home Page at http://www.epa.gov/projectxl/.

II. DESCRIPTION OF THE PROJECT

A. Operations and Activities of XL Participants

Each of the XL Participants operate research and teaching laboratories at their respective campuses. A summary of the XL Participants and their laboratory activities are summarized in Table 1 below.

Table 1. XL Participant Information

University	Location	Student Body	Approx. # of Laboratories
Boston College	Chestnut Hill, MA	14,000	120
University of Massachusetts - Boston	Boston, MA	13,000	150
University of Vermont	Burlington, VT	10,000	400

Boston College is classified as a Small Quantity Generator (SQG). The University of Massachusetts (Boston) and the University of Vermont manage their hazardous waste as Large Quantity Generators (LQG). UMass-Boston is an LQG solely as a generator of acutely hazardous wastes in excess of the 1 killogram per month threshold. Additionally, UVM operates a Part B permitted facility for the storage of hazardous wastes.

B. Problem Description

The Universities participating in this Laboratory XL Project are proposing to test a new environmental management regulatory model which they have championed on behalf of the Laboratory Consortium for Environmental Excellence (LCEE), a Boston-based group of laboratory organizations and academic institutions organized to address environmental management issues in laboratories. To understand the nature of this proposal, it is useful to consider its regulatory context. The management of chemicals in laboratories is primarily regulated by two federal statutes: The Occupational Safety and Health Act (OSHA) and the Resource Conservation and Recovery Act (RCRA).

While the Occupational Safety Health Administration recognized laboratories as unique settings and developed a performance-based standard to allow laboratories to more efficiently and effectively meet health and safety requirements, the requirements of RCRA are less readily adapted to such a setting. This is in large part because the RCRA program was not designed for a laboratory environment, but rather for those organizations where it has been and is quite successful--manufacturing and industrial operations.

The requirement for a hazardous waste determination and the management and handling provisions of RCRA are effective in a manufacturing environment where large quantities of a small number of hazardous wastes are consistently produced. In contrast, university laboratories typically generate relatively small quantities of many different hazardous wastes on a discontinuous basis. Furthermore, there are specific handling and management requirements for "hazardous wastes" under RCRA which may not apply to the larger universe of hazardous chemicals used in the laboratories which are subject to OSHA. Thus, university laboratories are essentially required to implement and track two parallel and not always consistent chemical management systems within the laboratory setting; one under RCRA which includes externally imposed requirements governing the management and handling of "hazardous waste," and one under OSHA which is a performance-based, internally-developed management system governing the management and handling of "hazardous chemicals." Such distinctions between, for example, sulfuric acid and waste

sulfuric acid are generally "artificial" to laboratory workers who are trained in recognizing and understanding chemical hazards and managing such chemicals in a manner that minimizes these hazards.

The implementation of such a dual system is further complicated by the structure of university laboratories as compared to industrial settings. With large numbers of laboratories within one university, each producing small amounts of hazardous wastes on a discontinuous basis, the overall management of hazardous chemicals and hazardous waste becomes far more difficult. Additional complications arise from the fact that the university laboratory setting is decentralized, diverse and subject to the regular turnover of students and researchers. These factors are the result of the institutions' education and research mission.

The challenges associated with effectively managing laboratory wastes under the RCRA system have been the subject of nationwide discussions within the university and research community throughout the past decade. Numerous organizations including the Campus Safety, Health and Environment Management Association, the National Research Council, and the American Chemical Society have sought a more efficient way to properly manage and handle hazardous chemicals in the laboratory setting and comply with both the requirements of OSHA and RCRA.

In New England, the LCEE was formed to explore more effective alternatives to the current parallel regulatory scheme. The LCEE includes multiple colleges and universities in the New England area, of which three are participating in this project. Following extensive consultations with laboratory professionals across the country, as well as discussions within the LCEE's own stakeholder group, the LCEE reached a consensus regarding the need to test a management system which would harmonize the RCRA and OSHA regulatory systems.

The result is the integrated, performance-based management system described herein which is both consistent with the objectives of RCRA and compatible with the objectives of OSHA's laboratory standard. In addition, implementation of the proposed Laboratory Environmental Management Standard will (1) actively encourage chemical reuse and recycling, (2) ultimately save costs and increase efficiency, and (3) better educate laboratory professionals and researchers.[1]

Thus, the central purpose of this Laboratory XL Project is to test the effectiveness of an integrated, performance-based, auditable laboratory environmental management system.

C. Problem Description: Reasons for Request for Regulatory Flexibility

The Universities have identified two principal regulatory problem areas, described below:

1. Hazardous Waste Determination [40 CFR 262.11]

The Universities have found, and their stakeholder group has confirmed, that hazardous waste determination may be made prematurely in the laboratories and may be a barrier to the reuse, recycling and redistribution of laboratory waste throughout the institution. This is attributable to the finding that once researchers and graduate students no longer have use for an individual laboratory waste, they are seldom aware of the reuse and recycling opportunities available in other laboratories. Thus, they are prone to call even reusable materials "hazardous waste." The result is that a certain quantity of reusable material is unnecessarily

[1]Such performance-based systems applicable to hazardous materials in laboratories have been developed and successfully implemented by the National Institutes of Health for biohazards, the Nuclear Regulatory Commission for nuclear hazards and OSHA for workplace hazards. For example, under OSHA's performance-based Laboratory Standard, management of hazardous materials in the laboratory is principally regulated by means of a written Chemical Hygiene Plan as required under 29 CFR 1910.1450, which is developed by each organization in accordance with the criteria set forth in the standard.

disposed of every year. In fact, under the current OSHA/RCRA scheme, a 1996 survey revealed that less than 1% of laboratory waste is currently reused by university laboratories.

Therefore, identifying a specific point for the formal determination as to the potential reuse or recycling opportunities for laboratories at the institutional level and at a central location, i.e. by a trained environmental professional who has primary responsibility for all laboratories, as envisioned in this proposal, is likely to increase the reuse and recycling of laboratory waste.

2. Satellite Accumulation [40 CFR 262.34(c)]

The Universities have found, and their stakeholder group has confirmed, that the 3-day limit on the satellite accumulation of hazardous waste is often too short and simply unworkable in a University laboratory setting. This results in the environmental, health and safety professionals end up spending a great deal of time picking up and transporting full containers of laboratory waste on a constant, but somewhat unpredictable, basis.

The extension of 3 to 30 days will allow for environmental, health and safety professionals to collect and remove laboratory waste during planned, systematic and scheduled intervals as opposed to the current reactive and episodic pick-ups which, in a setting of over a hundred laboratories becomes needlessly time-consuming and inefficient for laboratory and EH&S personnel and constrains EH&S personnel in a reactive mode of operation. Extending the period during which waste can be temporarily held in a laboratory allows for a more coordinated and efficient system which would free staff time to develop infrastructure for a university-wide chemical reuse system and training geared to waste minimization.

D. <u>Project Overview</u>

Integrated, Performance-Based Environmental Management System: **The principal objective of this Laboratory XL Project is to pilot a flexible, performance-based system for managing laboratory waste. This system is codified under a site specific rule proposed by EPA at 40 CFR part 262 Subpart J. This new subpart would contain a Laboratory Environmental Management Standard which defines criteria for the effective management of laboratory wastes. To achieve the objectives of the Environmental Management Standard, the Universities have developed a two-part regulatory model which includes (1) Minimum Performance Criteria for the management of laboratory wastes and (2) the development of a Laboratory Environmental Management Plan which is a document that describes how each University will conform to the Laboratory Environmental Management Standard and the Minimum Performance Criteria . This system is explained below:**

Laboratory Environmental Management Standard (EMS): **The Laboratory EMS is the complete set of requirements (attached as Appendix 1) for an effective system for the management and handling of laboratory waste. "Laboratory waste" is defined as a hazardous chemical that results from laboratory scale activities and includes the following: excess or unused hazardous chemicals that may or may not be reused outside their laboratory of origin; hazardous chemicals determined to be RCRA hazardous waste as defined in 40 CFR Part 261; and hazardous chemicals that will be determined not to be RCRA hazardous waste pursuant to the proposed section of 40 CFR at 262.106. The Laboratory EMS sets forth specific standards which are to be met by each University, including requirements for the development of an Environmental Management Plan requiring the implementation of laboratory waste and pollution prevention polices and procedures to ensure the safe handling and management of all laboratory wastes.**

Laboratory Environmental Management Plan (EMP): **The Laboratory EMS requires that each University develop and implement a Laboratory EMP. The EMP, modeled on OSHA's**

Chemical Hygiene Plan, is a comprehensive plan developed by each University that documents the procedures and practices that are to be implemented to achieve conformance with the requirements of the Laboratory EMS and the Minimum Performance Criteria. It is through the Laboratory EMP that the Universities will have an opportunity to design a performance-based system which complements the OSHA requirements and which encourages waste minimization and the active redistribution and reuse of laboratory waste.

Minimum Performance Criteria: **In order to ensure the proper handling and management of laboratory waste, the minimum performance criteria defined in the Laboratory EMS and addressed in the Laboratory EMP must be met by each laboratory. These criteria address the specific requirements of RCRA that are being replaced. The criteria (which are attached along with a full description of the Laboratory EMS in Appendix 1) include provisions which address RCRA-type requirements, including labeling and container management. The elements of the Minimum Performance Criteria are set forth below:**

(a) Each University must label all laboratory waste with the chemical name and general hazard class. If the container is too small to hold a label, the label must be placed on a secondary container.

(b) Each University may temporarily hold up to 55 gallons of laboratory waste or one quart of acutely hazardous laboratory waste, or weight equivalent, in each laboratory, but upon reaching these thresholds, each University must mark that laboratory waste with the date when this threshold requirement was met (by dating the container(s) or secondary container(s)).

(c) Each university must remove the dated laboratory waste from the laboratory for direct delivery to the hazardous waste accumulation area within 30 days of reaching the threshold amount identified in paragraph (b).

(d) In no event shall the excess laboratory waste that a laboratory temporarily holds before dated laboratory waste is removed exceed an additional 55 gallons of laboratory waste (or one additional quart of acutely hazardous laboratory waste). No more than 110 gallons of laboratory waste total (or no more than two quarts of acutely hazardous laboratory waste total) may be temporarily held in a laboratory at any one time. Excess laboratory waste must be dated and removed in accordance with the requirements of paragraphs (b) and (c).

(e) Containers of laboratory wastes must be:

(1) closed at all times except when wastes are being added to (including during in-line waste collection) or removed from the container.

(2) maintained in good condition and temporarily held in the laboratory in a manner to avoid leaks;

(3) compatible with their contents to avoid reactions between the waste and its container; and must be made of, or lined with, materials which are compatible with the laboratory wastes to be temporarily held in the laboratory so that the container is not impaired; and

(4) inspected regularly (at least annually) to ensure that they meet requirements for container management.

(f) The management of laboratory waste must not result in the release of hazardous constituents into the land, air and water where such release is prohibited under federal or state law.

(g) Emergency Response Requirements

(1) Each University must post notification procedures, location of emergency response equipment to be used by laboratory workers and evacuation procedures;

(2) Emergency response equipment and procedures for emergency response must be appropriate to the hazards in the laboratory such that hazards to human health and the environment will be minimized in the event of an emergency;

(3) In the event of a fire, explosion or other release of laboratory waste which could threaten human health or the environment outside the laboratory, the laboratory worker must follow the notification procedures under paragraph (f)(1).

(h) Each University must investigate, document, and take actions to correct and prevent future incidents of hazardous chemical spills, exposures and other incidents that trigger a reportable emergency or that require reporting under paragraph (g).

(i) Each University may only transfer laboratory wastes to an on-site designated hazardous waste accumulation area. Notwithstanding 40 CFR 263.10(a), the University must comply with requirements for transporters set forth in 40 CFR 263.30 and 263.31 in the event of a discharge of laboratory waste en route from a laboratory to an on-site hazardous waste accumulation area.

(j) Each University must provide laboratory workers with information and training so that they can implement and comply with these Minimum Performance Criteria.

The model described above, with the EMP which is closely aligned with the OSHA Chemical Hygiene Plan (CHP), is based on compliance with these Minimum Performance Criteria. Based on the success of the CHP model, the Universities have developed a stringent, yet adaptable system which will result in better management of laboratory waste and which contains more comprehensive requirements than what RCRA would otherwise require in the laboratories. The new system, based on the Laboratory EMS, allows each University to tailor the Laboratory EMP, and thus its internal polices and procedures, to it own individual institutional needs.

E. <u>Regulatory Relief Requested</u>

On _____, l999 a proposed site-specific federal rule which set forth the regulatory changes identified below was published in the Federal Register.

Integrated, Performance-Based Environment Management System:

At the heart of the proposed new environmental management system are two regulatory requirements from which the Universities are seeking flexibility. These two areas involve (1) hazardous waste determination and (2) satellite accumulation.

1. Hazardous Waste Determination [40 CFR 262.11]

As stated above, the Universities have designed an integrated environmental management system which attempts to harmonize OSHA and RCRA regulations governing hazardous chemicals and hazardous waste.

Thus, the Universities have proposed and the signatories have agreed to a " temporary conditional deferral" of specific RCRA requirements in the laboratory setting. The Universities would not have to make a §262.11 hazardous waste determination until laboratory waste is received at an on-site hazardous waste accumulation area. The deferral of this requirement is "temporary" because this Laboratory XL Project will only be in place from four years after the effective date of the FPA. The term "conditional" refers to the fact that the deferral will only be effective as long as the Universities comply with the Laboratory EMS, including the the Minimum Performance Criteria (as described above) and the requirements for the Laboratory EMP.

This " temporary conditional deferral" covers "laboratory waste" which includes three subcategories of material which result from laboratory scale activities; (a) excess or unused hazardous chemicals that may or may not be reused outside the laboratory of origin, (b)

hazardous chemicals determined to be RCRA hazardous waste as defined in 40 CFR 261, and (c) hazardous chemicals that will be determined not to be RCRA hazardous waste pursuant to the proposed regulations.

In addition to the Laboratory EMS, OSHA, applicable fire codes and all other federal, state and local laws and regulations would remain in full force and effect in the laboratories. [2]

2. Satellite Accumulation [40 CFR 262.34(c)][2]

The satellite accumulation requirements at 40 CFR 262.34(c) would also be subject to the temporary conditional deferral. Instead, each of the Universities' laboratories agrees to be subject to the Minimum Performance Criteria set forth in section II.D.3. of this FPA, which have been crafted to ensure protection of human health and the environment and which include the following requirements:

> **(b) Each University may temporarily hold up to 55 gallons of laboratory waste or one quart of acutely hazardous laboratory waste, or weight equivalent, in each laboratory, but upon reaching these thresholds, each University must mark the laboratory waste with the date when this threshold requirement was met (by dating the container(s) or secondary container(s)).**
> **(c) Each university must remove all of the dated laboratory waste from the laboratory for direct delivery to the hazardous waste accumulation area within 30 days of reaching the threshold amount identified in paragraph (b).**

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[2] Large quantity generator (less than ninety day) accumulation areas would still be fully covered by the current state and federal RCRA regulations. This XL project would not allow any increased air emissions that would otherwise be controlled under current RCRA requirements such as the Subpart CC hazardous waste organic air emissions standards that apply to large quantity generators who accumulate hazardous waste on-site pursuant to 40 CFR §262.34(a).

(d) In no event shall the excess laboratory waste that a laboratory holds before dated laboratory waste is removed exceed an additional 55 gallons of laboratory waste (or one additional quart of acutely hazardous laboratory waste). No more than 110 gallons of laboratory waste total (or no more than two quarts of acutely hazardous laboratory waste total) may be held in a laboratory at any one time. Excess laboratory waste must be dated and removed in accordance with the requirements of paragraphs (b) and (c).

This standard is potentially more stringent than the current RCRA model which allows for one 55 gallon drum of waste per point of generation and there may, under the current rules, be more than one point of generation in a laboratory. The criteria allows more flexibility than current requirements by allowing extra time for the generated waste to be removed. In order to assure that large quantities of waste are not held in the laboratories during the extra time, a limit of 55 gallons on the excess amount that can be held, has been proposed.

State regulatory requirements parallel the federal requirements, and for Massachusetts and Vermont, which are authorized to implement the RCRA program, state regulatory relief will be addressed. Specific state regulatory cites are included in Appendix 2.

F. Project Implementation

Integrated, Performance -Based Environmental Management System: **This primary element of the Laboratory XL Project will be implemented by BC, UMass (Boston) and UVM in a phased manner according to the following schedule:**

Step 1: **Development of Baseline Assessment: In order to ensure effective monitoring and evaluation of this project, each University will conduct a baseline assessment of current environmental performance, based on representative data, within the first six (6) months of the effective date of the Final Rule with a report within nine (9) months. Baseline environmental**

performance will include: identification of hazardous chemicals of concern, measurement of laboratory waste reuse and redistribution and hazardous waste generation data from laboratories.

Step 2: **<u>Development of Laboratory EMP:</u> Each University, working in collaboration with the agencies, will develop a Laboratory EMP within six (6) months of the effective date of the Final Project Agreement. This Plan will include policies, procedures and practices consistent with the Minimum Performance Criteria and the Laboratory EMS (Appendix 1) proposed at 40 CFR part 262, subpart J.**

Step 3: **<u>Review by Project Signatories and Stakeholders:</u> Upon completion, the written Laboratory EMP's will be provided to the EPA, and the applicable state agency, MADEP and VTDEC, for review and comment in order to ensure that the requirements of the Laboratory EMS have been met. The EPA and VTDEC will review each submitted EMP as applicable and the agencies will provide comments within thirty days. VTDEC will approve or disapprove of the UVM EMP within 30 days of receipt. MA-DEP may review and comment on the EMP. If a reviewing agency finds the EMP does not contain the required elements of the Environmental Management Standard, the Agency shall inform the University within the 30 day timeframe and shall summarize its concerns in writing to the University. If UVM subsequently submits a revised EMP, it shall be approved or disapproved by VTDEC within 30 days of receipt. A copy of each University's Laboratory EMP will be available to individual stakeholder groups, and the University will consider the comments and input of such reviewers in the revision of its EMP.**

Step 4: **Training and Information:** **Each University will provide to its Laboratory workers initial training and information on the EMP and will continue such training throughout the life of this Laboratory XL Project.**

Step 5: **Project Implementation:** **Each University will provide written notification by certified mail (return receipt requested) to the EPA and the relevant state agency at the time it is prepared to implement its approved EMP. Up until such written notification, RCRA regulations (or the equivalent state regulations) will apply in full. After receiving the return receipt, the site-specific rule created for this project will apply.**

Step 6: **Monitoring, Reporting and Evaluation: Each University will be responsible for collecting data and monitoring its environmental performance using the Environmental Performance Indicators (EPI's) selected for this XL project, which will be reviewed by EPA and each University's individual stakeholder groups. 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 the FPA. Thereafter, environmental performance data will be generated and evaluated in accordance with Section III. G. of this FPA.**

The University laboratories which would be affected by this project are used for research and teaching purposes. The breakdown of the individual Universities' laboratories and the hazardous waste accumulation areas (managed in accordance with 40 CFR 262.34) for each University are shown in Table 2 below:

Table 2. XL Project Participation and Scope of Project Implementation

Institution	Departments Participating	Location of Current Hazardous Waste Accumulation Area[1]
Boston College Chestnut Hill, MA	Chemistry, Biology, Geology, Physics and Psychology	Merkert Chemistry Building 2609 Beacon St., Boston MA Higgins Building 140 Commonwealth Ave. Chestnut Hill , MA
University of Massachusetts Boston Boston, MA	Chemistry, Biology, Psychology, Anthropology, Geology and Earth Sciences, and Environmental, Coastal and Ocean Sciences	Science Building (Bldg. #080); McCormack Building (Bldg. # 020); and Wheatley Building (Bldg. # 010) 100 Morrissey Blvd., Boston MA
University of Vermont Burlington, VT	Colleges of: Agriculture and Life Sciences; Arts and Sciences; Medicine; and Engineering and Mathematics; and Schools of: Nursing; Allied Heath Sciences; and Natural Resources.	Given Bunker 89 Beaumont Ave., Burlington VT

[1] Note: These accumulation areas would still be fully covered by the current federal and state RCRA regulations. This XL project, for example, would not allow any increased air emissions that would otherwise have been controlled under the current RCRA regulations such as the Subpart CC hazardous waste organic air emission standards that apply to large quantity generators who accumulate hazardous waste on-site.

III. PROJECT XL ACCEPTANCE CRITERIA

A. Environmental Results

The Laboratory XL Project will achieve superior environmental performance, beyond that which is achieved by the current RCRA regulatory system, in three key areas, which are described more fully in the following pages:

- ***Setting of Environmental Objectives and Targets and Pollution Prevention:*** **The systematic approach to environmental management will set the stage for better tracking, control, goal setting and pollution prevention.**
- ***Streamlining the Regulatory Process:*** **By coordinating RCRA and OSHA regulatory**

compliance, the project will streamline the overall regulatory process for University laboratories.

- ***Environmental Awareness*. The implementation and continuous improvement of the Laboratory EMS will enhance environmental awareness among laboratory workers.**

***1. Setting of Environmental Objectives and Targets and Pollution Prevention*:**

(a) General Scheme: The Laboratory Environmental Management Standard is a significant improvement in that it makes explicit to the research community that there is (i) an institutional commitment in the form of a policy to prevent pollution, (ii) a procedure for conducting an annual survey of hazardous chemicals of concern and (iii) a better system to reduce the potential for hazardous chemicals to accumulate and become wastes. (See Appendix 1 for the complete Laboratory Environmental Management Standard and Minimum Performance Criteria.) By way of example, each XL Participant's Laboratory Environmental Management Plan must include or reference:

- **a pollution prevention plan**
- **defined procedures for conducting an annual survey of laboratories that potentially store hazardous chemicals of concern ("HCOC")**
- **defined procedures for conducting laboratory decommissionings (e.g., cleanouts)**
- **defined procedures for the timely removal of laboratory wastes from the laboratory.**

(b) Increased Reuse of Laboratory Waste and Laboratory Waste Reduction: The current regulatory framework does little to encourage researchers to identify hazardous chemicals on the shelf as hazardous waste. Nor does it encourage researchers to identify institutional opportunities for reuse of such chemicals. One targeted area for the demonstration of superior environmental performance will be enhanced management and reuse of laboratory hazardous chemicals. For example, chemicals that are no longer of sufficient purity for research use may be reused or recycled into teaching laboratories. Additionally, waste reduction will occur as a result of better systems to exchange and

reuse hazardous chemicals throughout each university. According to a 1996 survey of approximately 100 academic institutions by the Campus, Safety, Health and Environmental Management Association, nearly 95% of respondents reported that they redistributed or recycled less than 1% of the hazardous chemical waste otherwise destined for disposal. This Laboratory XL Project commits the Universities to achieve better results, with the goals of 10% reduction in waste (from the baseline) and 20% increase in reuse or redistribution of chemicals (see Section IV: Performance Goals and Indicators) from measured baseline.

(c) Annual Survey of Hazardous Chemicals of Concern: The EMP includes a requirement that each University define a list of "hazardous chemicals of concern" ("HCOC") and annually conduct a risk evaluation survey of these chemicals in the laboratory. This list will be generated by EHS professionals at each University based on regulatory concerns, risk concerns and potential chemical reactions. The criteria at each University includes:

- **Chemicals given an expiration date by the manufacturer due to safety considerations (e.g., peroxide forming chemicals, etc.)**
- **Chemicals which meet the RCRA definitions of reactive or corrosive (flammables are covered by fire department restrictions; in general, toxics are hazardous during their use, not during storage) and have been determined by professional judgment to present a risk to non-lab workers or the environment**
- **Poison Inhalation Hazard designation by DOT (covers serious toxics)**
- **Other chemicals as determined by professional judgment to present a risk to non-lab workers or the environment**
- **Chemicals may be removed from the HCOC list if there are insufficient quantities to pose a risk.**

The HCOC list will be developed on a university-by-university basis, because the types of hazardous chemicals at a particular university will vary with the type of research work

performed there. This list will be reviewed on an annual basis and updated to assure that it covers an appropriate breadth of hazardous materials. This documented evaluation will enhance both waste and risk minimization efforts by identifying and evaluating chemicals of concern and moving them out of the laboratories, and it will help laboratory personnel and inspectors avoid semantic and enforcement battles over whether a hazardous material on the shelf is a RCRA waste. By placing the emphasis on the safe and careful handling of all chemicals, whether raw chemicals or waste chemicals, the time and effort of laboratory, environmental, health, and safety personnel and RCRA inspectors will be focused on the most important objectives of RCRA and OSHA, which are protection of human health and the environment.

The annual survey directly addresses the problems associated with the accumulation of old hazardous chemicals on the shelf. Federal EPA and state inspectors have repeatedly stressed that this problem is a priority concern . This University Laboratory XL Project goes beyond the "waste" management regulations prescribed in RCRA by addressing this particular "upstream" issue at its source. By providing regular and consistent data on chemicals and chemical storage, such surveys will support university-wide chemical redistribution and/or the timely disposal of hazardous chemicals that are approaching or have exceeded their shelf life. The survey will also document that HCOC's that remain on the shelf have been assessed for product integrity.

(d) Ongoing Evaluations and Audits: Additionally, evaluations and audits will be performed to help assure conformance with the University's EMP. Together with the enhanced environmental awareness training, internal audits/corrective actions will provide a way to continually improve the Laboratory EMS and help achieve improved environmental protection.

(e) Compliance with Other Laws and Regulations: XL Participants will continue to comply with all other Federal, state and local environmental laws and regulations not specifically "deferred" pursuant to EPA's site specific rule for this project and the legal mechanism instituted by Vermont and Massachusetts. This project will not result in media transfer of chemicals (e.g., will not result in former RCRA wastes being inappropriately disposed to the air or water).

(f) Corrective Action for Non-Conformance: Each University's EMP will contain corrective action procedures in the event that non-conformances are observed.

2. *Streamlined Regulatory Requirements:* As demonstrated by the effort to develop the Integrated Contingency Plan, Federal agencies have placed high value on coordination between regulatory programs. Laboratories in most states are already regulated by the requirements of OSHA's 29 CFR 1910.1450 (Occupational Exposure to Hazardous Chemicals in Laboratories) which requires the development of a Chemical Hygiene Plan (CHP) to ensure the health and safety of laboratory workers handling hazardous chemicals. In this project, the requirement to define and implement laboratory waste management policies and procedures will effectively manage laboratory wastes at every stage of their handling and disposition, including full compliance with current RCRA requirements once laboratory waste is received at the on-site hazardous waste accumulation area. The Minimum Performance Criteria and the procedures for complying with the minimum performance criteria which will be included in each University's Laboratory EMP ensure that enforceable safeguards will be in place. Moreover, the effect of a hazardous chemical survey and other procedures defined in the Laboratory EMP will be to minimize hazardous waste by shifting the focus to upstream sources of waste. The result will be performance that will exceed that prompted by the current RCRA program requirements as the focus of the university environmental

departments can broaden from the current narrow focus on the issues associated with waste pick-up and handling to include pollution prevention and the attendant issues of chemical substitution and reuse.

3. *Environmental Awareness:* Training, defined policies and procedures, enhanced audit programs and pollution prevention strategies are key management elements leading to superior environmental performance. Under the current system, these elements often receive less attention than they should because EH&S staff are focused on less pro-active issues such as managing laboratories as satellite accumulation areas. By allowing the institutional EH&S staff to schedule routine pick-ups of laboratory wastes at more suitable intervals (e.g., 2-3 weeks rather than 3-days under the satellite accumulation rule, but limiting the satellite accumulation to a maximum quantity of 55 gallons per laboratory, plus an "excess" of 55 gallons), the XL Participants will be able to more pro-actively focus limited resources on training and audit/corrective action programs and the establishment and administration of waste-exchange and hazardous chemical redistribution programs.

Under this project, laboratory workers will receive enhanced hazardous chemical training with respect to laboratory waste, pollution prevention and the environmental management practices at the university. The training requirements are outlined in the Environmental Management Standard (Appendix 1, Section 4). The training will also result in benefits for students as they graduate and pursue their careers equipped with an increased environmental awareness and respect for the environmental aspects of their jobs.

B. Cost Savings and Paperwork Reduction

Laboratory waste management currently accounts for the most substantial expense for environmental, health and safety programs at the XL Participants. This University Laboratory XL Project will allow academic institutions to more effectively promote and

implement waste minimization programs in laboratories. This will result in reduced waste disposal costs and reduced chemical purchasing costs without diminishing the level of environmental protection associated with the proper handling and/or disposal of hazardous laboratory wastes. The opportunity to develop a systematic, planned procedure for the pickup, consolidation and disposal of laboratory wastes will also enable participating institutions to more effectively utilize their EH&S staff for proactive activities. However, since RCRA requirements will remain in full effect at the institutional level, the XL Participants do not expect to significantly reduce the paperwork associated with compliance.

C. Stakeholder Involvement and Support

From the beginning of the Laboratory XL process, the Signatories have placed a high priority on having diverse stakeholders review and support this project. There has been both national and local stakeholder involvement in the development of the Laboratory Environmental Management Standard and substantive elements of this Final Project Agreement. This activity is described below and additional information, such as a listing of national stakeholders and letters of support are included in the docket supporting this rulemaking.

1. *National Stakeholders*: The initial stakeholder group was a national assembly of experts in laboratory chemical and environmental safety. The purpose of this group was twofold: (a) to assure that the University Laboratory XL Proposal reflected state of the art thinking with regard to controlling the potential impacts of laboratory chemicals; and (b) to ensure that the Laboratory Environmental Management Standard developed by the XL Participants could reasonably apply to a broad spectrum of small, medium and large institutions.

This national group participated in the development of the University Laboratory XL Proposal in a number of ways.

- **The Laboratory Consortium for Environmental Excellence (LCEE) sponsored national stakeholders' meetings which were conducted in November 1997 in Boston, MA and March 1998 in Naples, Florida. These meetings included a broad cross-section of participants, including representatives of different-sized colleges and universities, representatives of non-governmental organizations (NGOs), industry representatives, and representatives of various branches of the EPA. These meetings were instrumental in the formation and revision of the XL Proposal as presented to the EPA in February 1998 and then updated in April 1998.**
- **People unable to attend the national stakeholders' meetings were able to review the various drafts of the Laboratory XL Proposal at the Laboratory XL Home Page on the World Wide Web and comment electronically through the Laboratory XL e-mail listserve. Additionally, copies of the XL Proposal were mailed to individuals or organizations upon request. Over 100 people reviewed the proposals in this way.**
- **Several professional groups reviewed and commented on the Laboratory XL Proposal, including: (i) the Laboratory Waste Management Task Force of the American Chemical Society; and (ii) the Government Relations Committee of the Campus Safety, Health and Environmental Management Division of the National Safety Council.**
- **Many national and regional environmental or not-for-profit organizations were informed of this Laboratory XL Project and asked to participate. Those NGOs that have participated in the Laboratory XL Proposal include: the Tellus Institute, a not-for-profit organization with expertise in pollution prevention, sustainability and environmental performance measurement; Second Nature, an NGO promoting environmental literacy in secondary education; and Ecologia, an organization whose Board Member, Ed Schoener, has been a key NGO representative in the United States' participation in the development of ISO 14031, the Environmental Performance Evaluation standard. David Lenett, a representative of the Environmental Defense Fund has been a commenter on this project as well.**

2. *Local Stakeholders.* The XL Participants also identified groups of local stakeholders as part of the Laboratory XL process. In a decentralized, publicly accessible organization such as an academic institution, a local stakeholder process constitutes a formidable task. Efforts to involve local stakeholders at each institution have included the following.

- **University Faculty and Staff have been involved in the development of the Laboratory Proposal.**
- **The Laboratory XL Proposal has been reviewed at each XL Participant by the Safety Committee (or equivalent), relevant academic or administrative bodies, Chemistry Departments, legal counsel and relevant student environmental organizations. For**

example, at UVM, the Environmental Council, which is comprised of faculty, administrators, researchers, alumni and students, has reviewed the XL Proposal.

- **University students have been informed of, or had access to, the Laboratory XL process through the campus newspaper, campus Web Site and the Laboratory XL Home Page. Students, and other interested parties, have been invited to comment on the Laboratory XL Proposal or participate in the Laboratory XL process.**
- **Each XL Participant has identified community environmental stakeholders, including neighborhood organizations, standing committees (e.g., solid waste) for the county or city, or other local environmental organizations. Each XL Participant has publicized and hosted local meetings or spoken at local neighborhood association meetings.**
- **Regulators with jurisdiction over laboratories have been involved in reviewing the Laboratory XL Proposal. Agencies involved include the Vermont Department of Environmental Conservation, the Massachusetts Department of Environmental Protection, Burlington, (VT) Local Emergency Planning Committee, Boston, (MA) Local Emergency Planning Committee, Massachusetts Water Resources Authority, Burlington (VT) Board of Health, and Boston, (MA) Fire Departments.**

3. *Stakeholder Process Going Forward*. In addition to the stakeholder involvement steps described above, each University has taken and will continue to take the following steps:

- **Finalize the list of potential local stakeholders and solicit their participation in the Laboratory XL Project going forward;**
- **Solicit further participation through local newspapers and other appropriate communication vehicles**
- **Continue to inform stakeholders of the Laboratory XL process through the campus newspaper, campus Web Site and the Laboratory XL Home Page.**
- **Make the EMP and environmental performance reports publicly accessible and available per Section III.G and maintain records of stakeholder involvement over the duration of the project.**

In addition to these local initiatives, XL Participants made presentations and gave workshops at the Campus Safety, Health and Environmental Management Association meeting in New Orleans in July, 1998, sponsored a panel of presentations at the American

Chemical Society meeting in Boston in August, 1998, gave a presentation at the EPA-New England sponsored workshop on compliance at universities March 24, 1999, and will speak to national forums and workshops in order to reach national stakeholders on a continuing basis.

D. Innovative/Multi-Media Pollution Prevention

The Laboratory XL Project is innovative from regulatory, management and educational perspectives. In order to measure the success of multi-media pollution prevention resulting from the Laboratory XL Project, the Signatories will first evaluate the benefits of a performance-based process standard in comparison to current regulatory requirements. Second, Signatories will evaluate the effective integration of OSHA-based health and safety requirements for hazardous chemicals with EPA's environmental requirements for the same hazardous chemicals. Third, Signatories will evaluate the assumption that a more effective environmental management system for laboratories will result in reductions in environmental impacts and more environmentally informed laboratory workers.

This latter element is especially significant because the XL Participants, through the Laboratory Consortium for Environmental Excellence (LCEE), is committed to fully sharing this project's products – relevant guidance, information and technical expertise – with interested parties, including small colleges and secondary schools that may not have the funds or expertise to develop the infrastructure to manage their hazardous waste programs as envisioned in this proposal.

The Laboratory XL Project will promote pollution prevention in a number of very concrete ways as described in Section III.A. The Laboratory Environmental Management Standard, included as Appendix 1, emphasizes pollution prevention as a core laboratory competency which will, in policy and practice, be incorporated into each University's Laboratory EMP.

E. Transferability

The Laboratory Environmental Management Standard is designed to offer a national model for research and teaching laboratories. The long-term vision is that, by streamlining and coordinating the OSHA and RCRA regulatory programs, an integrated and transferable Laboratory Environmental Management Standard will allow scientists and researchers who move from one institution to another, or temporarily perform research on a sabbatical at a different institution, to be subject to and familiar with a consistent model. In this regard, the new system is similar to the health and safety regulatory model with which they are familiar - the OSHA Chemical Hygiene Plan. This should help ameliorate many of the current sources of regulatory confusion and result in enhanced performance.

The search for an alternative regulatory system for managing hazardous wastes in laboratories is currently a source of discussion in California, North Carolina and other regions of the country. The State of Minnesota has expressed interest in testing this Laboratory Environmental Management Standard and other research organizations have expressed interest in becoming "second tier adopters" and signing onto this FPA (See Section VI.D.) The LCEE has received letters of support from such national groups as Campus Safety, Health and Environmental Management Association (CSHEMA), American Chemical Society (ACS), and the National Research Council. The XL Participants and the LCEE will use all reasonable means (e.g., publications, performance reports, Web Page updates, conferences) to keep a national audience informed of the lessons learned from this Laboratory XL Project.

F. Feasibility

Each XL Participant has the financial capability, personnel and senior management commitment necessary to implement the elements of this Laboratory XL Project.

The Agencies, by signing this FPA, agree to support the project, subject to any review procedures necessary to implement the legal mechanism for this project.

G. Monitoring, Reporting and Evaluation Methods

EPA expects that Project XL participants will make project information available to Stakeholders in a form that is easy to understand. Project information will include pollution prevention, environmental awareness and compliance performance data. As described in Section IV of this FPA, each XL Participant will be responsible for collecting data and monitoring environmental performance, using selected Environmental Performance Indicators (EPIs) as agreed to by the Project Signatories and relevant stakeholders. Baseline performance, based on representative sampling and data will be assessed during the first six (6) months of implementation, after the final rule goes into effect, and will be reported on in a formal report within nine (9) months of the effective date. Thereafter, environmental performance will be evaluated against previous environmental performance data in the annual reports. A summary of monitoring, reporting and evaluation methods is described in the Laboratory XL Project Public Performance Reports included as Table 3.

Each University's Environmental Management Plan must describe the procedures the University will use to identify EMP nonconformance and assign responsibility, timelines and corrective actions to prevent their reoccurrence. Procedures for regularly inspecting a laboratory to assess conformance with the requirements of the plan must also be included. The results of these monitoring activities will be part of the annual review that each University is required to perform under the Laboratory Environmental Management Standard. In addition, the results of these activities, and a review and explanation of the laboratory inspection schedule(s), will be part of the annual report submitted to EPA, MADEP and VTDEC and available to stakeholders. EPA Region I and possibly the states

will also be inspecting the laboratories to assess conformance with the requirements proposed in the new Subpart J to 40 CFR part 262.

Table 3. Laboratory XL Project Public Performance Reports

Report	Content	Due Date	Availability
Baseline Report	**Provides representative baseline data with respect to Environmental Performance Indicators (EPIs)**	**Nine months after the effective date of the final rule**	**Disseminated to identified stakeholders, posted on Web Page, available upon request**
First Year Report	**Summary of environmental performance (pollution prevention, environmental awareness and compliance) and progress against baseline performance data**	**15th month after effective date of final rule.**	**Disseminated to identified stakeholders, posted on Web Page, available upon request**
Second Year	**Response to Agency review/inspection of environmental performance**	**Expected to occur between 15th and 30th month after effective date of final rule.**	**Disseminated to identified stakeholders, posted on Web Page, available upon request.**
Second Year Report	**Evaluation of environmental performance to date, including conformance review and corrective action(s) if any, and summary of lessons learned**	**30th month after effective date of final rule.**	**Disseminated to identified stakeholders, posted on Web Page, available upon request, open meeting hosted at each XL Project site.**
Third Year	**Response to Agency review/inspection of environmental performance**	**Expected to occur between 30th and 42th month after effective date**	**Disseminated to identified stakeholders, posted on Web Page, available upon request.**
Final Report	**Summary of environmental performance and progress against past performance data**	**42nd month after effective date of final rule.**	**Disseminated to identified stakeholders, posted on Web Page, available upon request, open meeting hosted at each XL Project site.**

H. Avoidance of Shifting Risk Burden

The implementation of a comprehensive, integrated Laboratory EMP, consistent with the Laboratory Environmental Management Standard, will minimize waste and reduce risk of spills, releases, accidents and injuries. No shifting of the risk burden will occur.

IV. PERFORMANCE GOALS AND INDICATORS

As part of this FPA, the XL Participants agree to measure their environmental performance with the specified goals of this Laboratory XL Project. Environmental goals and indicators are outlined in Table 4. "EPI" stands for Environmental Performance Indicator which is a specific criterion that provides information about the XL Participant's environmental performance. In Table 4 EPIs are classified by "Type" as either pollution prevention, compliance (streamlined regulatory requirements) or environmental awareness to be consistent with the description of "Environmental Results" set forth in Section III.A. "Purpose" and "Goals" should be self-explanatory.

As discussed in Section III.G "Monitoring, Reporting and Evaluation Methods," a baseline assessment will be conducted at each XL Participant site. The baseline assessment will include:

1. **a survey of hazardous chemicals of concern and quantity stored on the shelf in those laboratories covered by this Laboratory XL Project;**
2. **a measurement of laboratory wastes generated during a defined time period (e.g. over a six month period);**
3. **an environmental awareness survey of laboratory workers;**
4. **an evaluation of the amount of all laboratory wastes currently reused or redistributed (Note: each XL Participant currently estimates this rate as consistent with CSHEMA data - less than 1%); and**

5. a measurement of costs of compliance that includes available information on waste disposal costs.

Table. 4 Environmental Goals and Indicators.

Performance Type	Purpose	EPI	Goal
1. Pollution Prevention and Risk Reduction	**Annual surveys of Hazardous Chemicals of Concern (HCOC)**	**HCOC on shelf that exceed institution defined "shelf life"**	**All HCOC on shelf are within their defined "shelf life"**
2. Pollution Prevention	**Verify annual surveys of Hazardous Chemicals of Concern**	**Surveys completed**	**100% completion of surveys each year**
3. Pollution Prevention	**Conduct pollution prevention opportunity assessments**	**Assessments completed**	**One opportunity assessment 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**	**Twenty (20) percent 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**	**Ten (10) percent reduction of hazardous waste from baseline over life of project (resulting in reduced disposal)**
6. Environmental Awareness and Risk Reduction	**Assess hazardous materials and environmental awareness of laboratory workers**	**Survey scores**	**Scores demonstrate improvement over life of project (Note: the same people will not necessarily be tested)**
7. Environmental Awareness	**Provide environmental awareness training to 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*****	**Reported improvement**

*** An opportunity assessment conducted for one laboratory wastestream may be broadly applied to other laboratories.**

**** EPA and the States are expected to evaluate program conformance as well as the XL Participants.**

***** This internal EMS audit will assess laboratory conformance to the XL Participant's Environmental Management Plan in accordance with audit or inspection protocols developed by the institution. It is expected that the EMS audits will be conducted by second or third party auditors.**

It is important to note that the defined P2 goals in Table 5 are conservative. 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. It is the expectation of the Signatories that a clear pattern of pollution prevention, compliance and enhanced environmental awareness will, in total, demonstrate the superior environmental performance of this Laboratory XL Project.

V. ENFORCEABILITY

The XL Participants understand that all XL Projects must include legally enforceable mechanisms in order to ensure accountability. In this project, the Laboratory EMS, which includes the EMP and the Minimum Performance Criteria (detailed in Appendix 1) has become part of a site-specific federal rule which EPA will have the ability to enforce. Each University understands that its EMP must be drafted to satisfy the requirements of the site specific rule. The XL Participants further understand that EPA has the authority to inspect laboratories in accordance with the Agency's standard inspection procedures and legal rights. The XL Participants further understand that a violation of a condition of the Laboratory XL Project or a clear pattern of non-conformance on the part of a University with the institution-specific Laboratory EMP may result in termination of the Laboratory XL Project at that University and the re-institution of the RCRA regulations from which flexibility has been granted. The specific enforcement response on the part of EPA will vary depending upon the performance of a given University. Each University will be evaluated based on the following four criteria:

1. **Does the University have an Environmental Management Plan ("EMP") as required by the Laboratory Environmental Management Standard?**
2. **Does the University's EMP include the required policy and procedural elements specified in the Laboratory Environmental Management Standard, e.g., does the EMP satisfy the requirements of the site specific rule?**
3. **Is the University meeting the Minimum Performance Criteria as set forth in the Laboratory Environmental Management Standard in Appendix 1 of this Agreement and the federal rule?**
4. **To what degree does a university's environmental management practices in the laboratory actually conform to the EMP?**

A University may receive a written Notice of Non-Conformance or other notice from EPA or may receive notice of Project XL termination if EPA or MADEP or VTDEC observes a violation or pattern of non-conformance as described above.

Both MADEP and the VTDEC reserve their rights of inspection and enforcement with respect to the Universities in accordance with applicable laws.

Nothing in this agreement is intended to limit the Project Sponsor's rights to administrative or judicial appeal or review of the legal mechanisms used to implement the project, or modification or termination of those mechanisms in accordance with the normal procedures for such review.

5. ADMINISTRATION OF THE FPA

A. Withdrawal from the FPA

Because this FPA is not legally enforceable, no Project Signatory may be legally compelled to continue with the Laboratory XL Project. However, it is the desire of the Project Signatories for the FPA to remain in effect and be implemented as fully as possible, and it is not their intent to terminate or withdraw from the FPA unless there is a compelling reason to do so.

The Project Signatories agree that appropriate grounds to seek withdrawal from the FPA could include (but are not limited to):

- **Substantial failure by another Signatory to implement the terms of the FPA;**
- **Discovery of failure by another Signatory to disclose relevant facts during development of the project that would have substantially changed the outcome of the FPA;**
- **Discovery of new information indicating that implementation of the project will present an imminent and substantial endangerment to public health or welfare, or the environment;**
- **Substantial changes to the Laboratory Environmental Management Standard as a result of comments submitted during the public comment periods or rule-making; and/or**
- **Non-conformance with the site specific rule.**

Withdrawal from the FPA by any Signatory does not affect the legal status of a site-specific rule issued by MADEP or VTDEC. Withdrawal from the FPA by a single XL Participant does not affect the legal status of the other XL Participants.

B. Modification of the FPA

At any time, a Project Signatory may modify the FPA with the concurrence of all of the other Project Signatories. Any substantive modifications will be subject to notice and comment in the Federal Register. XL Participants will also provide notice to stakeholders to solicit, and incorporate to the extent feasible, their input on any proposed modifications prior to publication or notice of availability in the Federal Register. The proponents will respond to all comments that they receive regarding any modifications.

C. Duration of the Agreement

This FPA will be in effect for a period of four (4) years from the date that the final rulemaking becomes effective, unless it is terminated earlier or extended by agreement of all Project Signatories (if the FPA is extended, the comments and input of stakeholders will be sought and a Federal Register Notice will be published). Any Project Signatory may terminate its participation in this Project at any time in accordance with the procedures set forth in Section VI (H) of this FPA.

D. Additional Project Signatories

Following the first progress report by the Universities (15 months after effective date of final rule) and an EPA evaluation of the project that indicates that it is being implemented successfully, additional academic laboratories that are members of the Laboratory Consortium for Environmental Excellence may apply to participate in this Project. As with the original laboratory participants, the new proposals must meet the Project XL criteria.

The addition of new project elements and new signatories would require the consent of the existing Project Signatories. Moreover, such additions would be considered a modification under this FPA and would require a stakeholder involvement process leading to amendments to both the FPA and the final rule (40 CFR 262 Subpart J) which accompanies this project. As always, XL participants must have a good compliance record as outlined in the Compliance Screening Guidance for XL projects.

E. Public Participation

The Project Signatories will provide opportunities for public participation pursuant to the rulemaking and the terms of this FPA in accordance with Section III. C of this FPA.

F. Means of Giving Notice

All communications among the Project Signatories concerning the activities performed pursuant to the terms and conditions of this FPA shall be directed to the individuals listed below by controlled or certified mail.

G. Dispute Resolution

Any dispute which arises under or with respect to this FPA will in the first instance be subject to informal negotiations between the parties to the dispute. The period of informal negotiations will not exceed twenty (20) days from the time the dispute arises, unless that period is extended by a written agreement of the parties to the dispute. The dispute will be considered to have arisen when one party sends to the other parties a written Notice of Dispute.

In the event that the parties cannot resolve a dispute by informal negotiations, the parties may invoke non-binding mediation by setting forth the nature of the dispute with a proposal for resolution in a letter submitted to the Regional Administrator for EPA Region I. Prior to the issuance of an opinion, the Regional Administrator may request an additional, informal mediation meeting. If so requested, the Regional Administrator will attempt to resolve the dispute by issuing a written opinion.

Any such opinion, verbal or written, issued by the Regional Administrator will be non-binding.

Nothing in this section will be construed to alter the provisions of Section VI.H. regarding Project Termination.

H. Termination

Any Project Signatory wishing to terminate its involvement in this FPA will provide a written Notice of Termination to all non-terminating Project Signatories. As stipulated in Section V of this FPA, EPA, MADEP or VTDEC may cause termination of this FPA with an

XL Participant in the event of a violation of an essential condition of the Laboratory XL Project or a clear pattern of non-conformance on the part of a University with either the Minimum Performance Criteria or its institution-specific Laboratory EMP. In such an instance, EPA, MADEP or VTDEC may request that the non-conforming XL Participant submit both a written Notice of Termination to all non-terminating Project Signatories and a plan for complying with applicable federal RCRA and state regulations within the time period that the termination becomes effective as specified below.

In the event of a notice of termination, EPA, MADEP or VTDEC will provide the University with 15 days written notice of its intent to terminate. During this period, which will commence upon receipt of the notice, the University will have the opportunity to come back into compliance with the Minimum Performance Criteria and its Environmental Management Plan or to provide a written explanation as to why it was not in compliance and/or how it intends to demonstrate compliance. If, upon review of the University's written explanation, EPA, MADEP or VTDEC then re- issues a written notice terminating the University from this XL Project, the provisions of the following paragraph will immediately apply.

Termination under this section will take effect ninety (90) days following submittal of a final Notice of Termination to all non-terminating Project Signatories. Any XL participant to which termination applies will use the (90) ninety day period to re-institute a RCRA system in its laboratories. During this (90) ninety day period, the terms of the final rule associated with this Laboratory XL Project will remain in full force and effect. The Parties anticipate that a disputed matter that leads to a Notice of Termination will have been reviewed through the Dispute Resolution procedure in Section VI. G., above, prior to the Notice of Termination being issued. Any party that receives a Notice of Termination may submit a Notice of

Dispute to the Party that issued the Notice of Termination and, in that way, invoke the Dispute Resolution provisions of section VI.G. provided that matters already reviewed through Dispute Resolution will not be subject to further review and, provided further that the Notice of Dispute must be issued within ten (10) days after the Notice of Termination was received.

I. Effect of Termination

Upon a termination becoming effective as provided in Section I. H, this FPA will no longer be in effect for the Project Signatory or Signatories to which the termination applies, and the RCRA regulations in effect prior to the rulemaking will become effective as to such Project Signatory or Signatories.

J. Periodic Review

The Parties will confer, on a periodic basis, to assess progress in implementing the Laboratory XL Project. Unless it is agreed otherwise, a review by the Project Signatories will take place at least annually. Not later than thirty (30) days following a Periodic Performance Review Conference, XL Participants will post a summary of the minutes of that conference to the Laboratory XL Web Page and will provide identified and local stakeholders with a copy of the summary minutes. Any additional comments of stakeholders will be reported to the Agencies.

The Agencies will review and evaluate the reports submitted by the Project Signatories and the results of their independent inspections and audits, and determine whether the regulatory model for laboratories piloted in this Laboratory XL Project should be proposed as a national model.

K. Effective Date

This FPA is effective on the date it is dated and signed by EPA's Regional Administrator for Region I.

1. John P. DeVillars, Regional Administrator
EPA Region I
One Congress Street
Boston, MA 02109

2. James C. Colman, Assistant Commissioner
Department of Environmental Protection
One Winter Street
Boston, MA 02108

3. Canute Dalmasse, Commissioner
Department of Environmental Conservation
West Office Building
Waterbury, VT 05671-0404

4. Peter McKenzie, Financial Vice President & Treasurer
Boston College
140 Commonwealth Ave.
Chestnut Hill, MA 02167

5. Sherry H. Penney, Chancellor
University of Massachusetts - Boston
100 Morrissey Boulevard
Boston, MA 02125-3393

6. Geoffrey Gamble, Provost
University of Vermont
655 D Spear Street, P.O. Box 50570
Burlington, VT 05405

SIGNATURES OF THE PROJECT SIGNATORIES

1. John P. DeVillars
Regional Administrator
U.S. Environmental Protection Agency
Signature _____
Date _____

2. James C. Colman
Assistant Commissioner
Massachusetts Department of Environmental Protection
Signature_____
Date _____

3. Canute Dalmasse, Commissioner
Vermont Department of Environmental Conservation
Montpelier, VT
Signature _____
Date _____

4. Peter McKenzie, Financial Vice President & Treasurer
Boston College
Signature _____
Date _____

5. Sherry H. Penney, Chancellor
University of Massachusetts - Boston
Signature_____
Date _____

6. Geoffrey Gamble, Provost
University of Vermont
Signature _____
Date _____

APPENDIX 1
University Laboratories XL Project - Laboratory Environmental Management Standard

I. The Laboratory Environmental Management Standard

This Standard provides a framework for a new management system for wastes that are generated in University laboratories. This framework is called an Environmental Management Standard. The standard includes some specific definitions that apply to the laboratories. It outlines the responsibilities of the management staff of each participating university. The standard identifies the requirements for developing and implementing an environmental management plan that will embody the legal requirements of the site specific rule that will be promulgated for this project. It contains very specific requirements for how to handle laboratory waste. Finally, it identifies requirements for training people who will work in the laboratories. The Federal Rule for this project also identifies waste determination requirements, and termination and expiration provisions.

II. Definitions

Acutely Hazardous Laboratory Waste **means a laboratory waste, defined in the Environmental Management Plan as posing significant potential hazards to human health or the environment and which must include RCRA "P" wastes, and may include particularly hazardous substances as designated in a University's Chemical Hygiene Plan under OSHA, or Extremely Hazardous Substances under the Emergency Planning and Community Right to Know Act.**

Chemical Hygiene Plan **(CHP) means a written program developed and implemented by the employer which sets forth procedures, equipment, personal protective equipment and work practices that are capable of protecting employees from the health hazards presented by hazardous chemicals used in the particular workplace and meets the requirements as defined in 29 CFR 1910.1450.**

Emergency **means any occurrence such as, but not limited to, equipment failure, rupture of containers or failure of control equipment which results in the potential uncontrolled release of a hazardous chemical into the environment and which requires agency or fire department notification and/or reporting.**

Environmental Management Plan **(EMP) means a written program developed and implemented by the university which sets forth standards and procedures, responsibilities, pollution control equipment, performance criteria, resources and work practices that both protect human health and the environment from the hazards presented by laboratory wastes**

within a laboratory and between a laboratory and the hazardous waste accumulation area, and satisfies the plan requirements defined elsewhere in this section. Certain requirements of this plan are satisfied through the use of the Chemical Hygiene Plan, or equivalent, and other relevant plans including a waste minimization plan. The elements of the Environmental Management Plan must be easily accessible, but may be integrated into existing plans, incorporated as an attachment, or developed as a separate document.

Environmental Objective **means an overall environmental goal of the organization which is verifiable.**

Environmental Performance **means results of the data collected pursuant to implementation of the Environmental Management Plan as measured against policy, objectives and targets.**

Environmental Performance Indicator **means a specific criterion that provides information about the organization's environmental performance.**

Environmental Target **means an environmental performance requirement of the organization which is quantifiable, where practicable, verifiable and designed to be achieved within a specified time frame.**

Final Project Agreement (FPA) **means the final agreement between the Universities, the EPA, the state of Vermont Department of Environmental Conservation and the Commonwealth of Massachusetts Department of Environmental Protection which embodies the operation and terms of the University Laboratory XL project.**

Hazardous Chemical **means any chemical which is a physical hazard or a health hazard. A physical hazard means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive. A health hazard means a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system and agents which damage the lungs, skin, eyes or mucous membranes.**

Hazardous Chemical of Concern **means a chemical that the organization has identified as having the potential to be of significant risk to human health or the environment if not stored in accordance with procedures or practices defined by the organization.**

Hazardous Waste Accumulation Area **means the on-site area at a University where the University will make a solid and hazardous waste determination with respect to laboratory wastes.**

In-Line Waste Collection **means a system for the automatic collection of laboratory waste which is directly connected to or part of a laboratory scale activity and which is constructed or operated in a manner which prevents the release of any laboratory waste therein into the environment during collection.**

Laboratory **means, for the purpose of this project, an area within a facility where the "laboratory use of hazardous chemicals" occurs. It is a workplace where relatively small quantities of hazardous chemicals are used on a non-production basis. The physical extent of individual laboratories within an organization will be defined by the Environmental Management Plan. A laboratory may include more than a single room if the rooms are in the same building and under the common supervision of a laboratory supervisor.**

Laboratory Clean-Out **means an evaluation of the chemical inventory of a laboratory as a result of laboratory renovation, relocation or a change in laboratory supervision that may result in the transfer of laboratory wastes to the hazardous waste accumulation area.**

Laboratory Environmental Management Standard **means this appendix which includes the requirements for preparation of Environmental Management Plans and the inclusion of Minimum Performance Criteria within each EMP.**

Laboratory Scale **means work with substances in which containers used for reactions, transfers and other handling of substances are designed to be safely and easily manipulated by one person. "Laboratory Scale" excludes those workplaces whose function is to produce commercial quantities of chemicals.**

Laboratory Waste **means a hazardous chemical that results from laboratory scale activities and includes the following: excess or unused hazardous chemicals that may or may not be reused outside their laboratory of origin; hazardous chemicals determined to be RCRA hazardous waste as defined in 40 CFR Part 261; and hazardous chemicals that will be determined not to be RCRA hazardous waste pursuant to 40 CFR 262.106.**

Laboratory Worker **means a person who is assigned to handle hazardous chemicals in the laboratory and may include researchers, students or technicians.**

Legal and Other Requirements **means requirements imposed by, or as a result of, governmental permits, governmental laws and regulations, judicial and administrative enforcement orders, non-governmental legally enforceable contracts, research grants and agreements, certification specifications, formal voluntary commitments and organizational policies and standards.**

Non-compliance **means, for the purposes of this standard, activity, conduct or work practices that do not conform to the requirements of the Environmental Management Plan and applicable RCRA requirements.**

Senior Management **means senior personnel with overall responsibility, authority and accountability for managing laboratory activities within the organization.**

Universities **means the following academic institutions: University of Vermont, Boston College, and the University of Massachusetts Boston, which are participants in this Laboratory XL project and which are subject to the requirements set forth in this Subpart I.**

III. Scope of the Laboratory Environmental Management Standard
The Laboratory Environmental Management Standard will not affect or supersede any other legal requirements (other than 40 CFR 262.11 and 262.34), including, but not limited to, OSHA, Fire Codes, wastewater permit limitations, emergency response notification provisions, or other legal requirements applicable to University laboratories.

IV. Minimum Performance Criteria
The Minimum Performance Criteria that each University must meet in Managing its Laboratory Waste are:
(a) Each University must label all laboratory waste with the chemical name and general hazard class. If the container is too small to hold a label, the label must be placed on a secondary container.
(b) Each University may temporarily hold up to 55 gallons of laboratory waste or one quart of acutely hazardous laboratory waste, or weight equivalent, in each laboratory, but upon reaching these thresholds, each University must mark that laboratory waste with the date when this threshold requirement was met (by dating the container(s) or secondary container(s)).
(c) Each university must remove all of the dated laboratory waste from the laboratory for direct delivery to the hazardous waste accumulation area within 30 days of reaching the threshold amount identified in paragraph (b).
(d) In no event shall the excess laboratory waste that a laboratory temporarily holds before dated laboratory waste is removed exceed an additional 55 gallons of laboratory waste (or one additional quart of acutely hazardous laboratory waste). No more than 110 gallons of laboratory waste total (or no more than two quarts of acutely hazardous laboratory waste

total) may be temporarily held in a laboratory at any one time. Excess laboratory waste must be dated and removed in accordance with the requirements of paragraphs (b) and (c).

(e) Containers of laboratory wastes must be:

(1) closed at all times except when wastes are being added to (including during in-line waste collection) or removed from the container;

(2) maintained in good condition and stored in the laboratory in a manner to avoid leaks;

(3) compatible with their contents to avoid reactions between the waste and its container; and must be made of, or lined with, materials which are compatible with the laboratory wastes to be temporarily held in the laboratory so that the container is not impaired; and

(4) inspected regularly (at least annually) to ensure that they meet requirements for container management.

(f) The management of laboratory waste must not result in the release of hazardous constituents into the land, air and water where such release is prohibited under federal law.

(g) The requirements for emergency response are:

(1) Each University must post notification procedures, location of emergency response equipment to be used by laboratory workers and evacuation procedures;

(2) Emergency response equipment and procedures for emergency response must be appropriate to the hazards in the laboratory such that hazards to human health and the environment will be minimized in the event of an emergency;

(3) In the event of a fire, explosion or other release of laboratory waste which could threaten human health or the environment, the laboratory worker must follow the notification procedures under paragraph (g)(1) above.

(h) Each University must investigate, document, and take actions to correct and prevent future incidents of hazardous chemical spills, exposures and other incidents that trigger a reportable emergency or that require reporting under paragraph (g) above.

(i) Each University may only transfer laboratory wastes from a laboratory directly to an on-site designated hazardous waste accumulation area. Notwithstanding 40 CFR 263.10(a), the University must comply with requirements for transporters set forth in 40 CFR 263.30 and 263.31 in the event of a discharge of laboratory waste en route from a laboratory to an on-site hazardous waste accumulation area.

(j) Each University must provide laboratory workers with information and training so that they can implement and comply with these Minimum Performance Criteria.

V. The Laboratory Environmental Management Plan

(a) Each University must include specific measures it will take to protect human health and the environment from hazards associated with the management of laboratory wastes and from the reuse, recycling or disposal of such materials outside the laboratory.

(b) Each University must write, implement and comply with an Environmental Management Plan that includes the following:

(i) The specific procedures to assure compliance with each of the Minimum Performance Criteria set forth in Section IV above.

(ii) An environmental policy, or environmental, health and safety policy, signed by the University's senior management, which must include commitments to regulatory compliance, waste minimization, risk reduction and continual improvement of the environmental management system.

(iii) A description of roles and responsibilities for the implementation and maintenance of the Laboratory Environmental Management Plan.

(iv) A system for identifying and tracking legal and other requirements applicable to laboratory waste, including the procedures for providing updates to laboratory supervisors.

(v) Criteria for the identification of physical and chemical hazards and the control measures to reduce the potential for releases of laboratory wastes to the environment, including engineering controls, the use of personal protective equipment and hygiene practices, containment strategies and other control measures.

(vi) A pollution prevention plan, including, but not limited to, roles and responsibilities, training, pollution prevention activities, and performance review.

(vii) A system for conducting and updating annual surveys of hazardous chemicals of concern and procedures for identifying acutely hazardous laboratory waste.

(viii) The procedures for conducting laboratory clean-outs with regard to the safe management and disposal of laboratory wastes.

(ix) The criteria that laboratory workers must comply with for managing, containing and labeling laboratory wastes, including: an evaluation of the need for and the use of any special containers or labeling circumstances, and the use of laboratory wastes secondary containers including packaging, bottles, or test tube racks.

(x) The procedures relevant to the safe and timely removal of laboratory wastes from the laboratory.

(xi) The emergency preparedness and response procedures to be implemented for laboratory waste.

(xii) Provisions for information dissemination and training, provided for in subsection (d) of this section.

(xiii) The procedures for the development and approval of changes to the Environmental Management Plan.

(xiv) The procedures and work practices for safely transferring or moving laboratory wastes from a laboratory to a hazardous waste accumulation area.

(xv) The procedures for regularly inspecting a laboratory to assess conformance with the requirements of the Environmental Management Plan.

(xvi) The procedures for the identification of environmental management plan non-compliance, and the assignment of responsibility, timelines and corrective actions to prevent their reoccurrence.

(xvii) The recordkeeping requirements to document conformance with this Plan.

(c) Organizational Responsibilities for Each University

Each University must:

(1) Develop and oversee implementation of its Laboratory Environmental Management Plan.

(2) Identify the following:

(i) annual environmental objectives and targets;

(ii) those laboratories covered by the requirements of the Laboratory Environmental Management Plan.

(3) Assign roles and responsibilities for the effective implementation of the Environmental Management Plan.

(4) Determine whether laboratory wastes received at a hazardous waste accumulation area are solid wastes under RCRA and, if so, whether they are hazardous.

(5) Develop, implement, and maintain:

(i) policies, procedures and practices governing its compliance with the Environmental Management Plan and applicable federal and state hazardous waste regulations.

(ii) procedures to monitor and measure relevant conformance and environmental performance data for the purpose of supporting continual improvement of the Environmental Management Plan.

(iii) policies and procedures for managing environmental documents and records applicable to this Environmental Management Standard.

(6) Ensure that:

(i) its Environmental Management Plan is available to laboratory workers, vendors, employee representatives, visitors, on-site contractors, and upon request, to governmental representatives.

(ii) personnel designated by each University to handle laboratory wastes and RCRA hazardous waste receive appropriate training.

(iii) the Environmental Management Plan is reviewed at least annually by senior management to ensure its continuing suitability, adequacy and effectiveness. The reviews may include, but not be limited to, a consideration of monitoring and measuring information, Laboratory Environmental Management Standard performance data, assessment and audit results and other relevant information and data.

(d) Information and Training Requirements

(1) Each University must provide laboratory workers with information and training so that they understand and can implement the elements of each University's Environmental Management Plan that are relevant to the laboratory workers' responsibilities.

(2) Each University must provide the information and training to each laboratory worker when he/she is first assigned to a work area where laboratory wastes may be generated. Each University must retrain a laboratory worker when a laboratory waste poses a new or unique hazard for which the worker has not received prior training and as frequently as needed to maintain knowledge of the procedures of the Environmental Management Plan.

(3) Each University must provide an outline of training and specify who is to receive training in its Environmental Management Plan.

(4) Each University must ensure that laboratory workers are informed of:

(i) The contents of this Subpart and the Laboratory Environmental Management Plan(s) for the laboratory(ies) in which they will be performing work;

(ii) The location and availability of the Environmental Management Plan;

(iii) Emergency response measures applicable to laboratories;

(iv) Signs and indicators of a hazardous substance release;

(v) The location and availability of known reference materials relevant to implementation of the Environmental Management Plan; and

(vi) Environmental training requirements applicable to laboratory workers.

(5) Each University must train Laboratory workers in:

(i) Methods and observations that may be used to detect the presence or release of a hazardous substance;

(ii) The chemical and physical hazards associated with laboratory wastes in their work area;

(iii) The relevant measures a laboratory worker can take to protect human health and the environment; and

(iv) Details of the Environmental Management Plan sufficient to ensure they manage laboratory waste in accordance with the requirements of this Subpart.

(6) Requirements pertaining to Laboratory visitors

(i) Laboratory visitors, such as on-site contractors or environmental vendors, that require information and training under this standard must be identified in the Environmental Management Plan.

(ii) Laboratory visitors identified in the Environmental Management Plan must be informed of the existence and location of the Environmental Management Plan.

(iii) Laboratory visitors identified in the Environmental Management Plan must be informed of relevant policies, procedures or work practices to ensure compliance with the requirements of the Environmental Management Plan.

(7) Each University must define methods of providing objective evidence and records of training and information dissemination in its Environmental Management Plan.

VI. Hazardous Waste Determination

Each University must evaluate all laboratory wastes to determine whether they are solid wastes under RCRA and, if so, determine pursuant to 40 CFR 262.11(a) through (d) whether they are hazardous wastes as soon as the laboratory wastes reach the University's Hazardous Waste Accumulation area(s). At this point each University must determine whether the laboratory waste must be managed as RCRA solid or hazardous waste or whether it may be reused or managed in accordance with other applicable regulations. Laboratory waste that is determined to be hazardous waste is no longer subject to the provisions of the Laboratory Environmental Management Standard and must be managed in accordance with all applicable RCRA requirements.

APPENDIX 2

The following specific regulatory relief for laboratories is sought as a result of the temporary conditional deferral of waste determination as described in the text of the FPA.

The following fundamental regulatory relief is proposed:

Regulatory Relief Requested	Federal Citation	State Citation	Operative Effect of Relief Requested
Add the following new paragraph (j) to § 262.10 : **"(j)Universities that are participating in the Laboratory XL project are the University of Massachusetts Boston in Boston, Massachusetts, Boston College in Boston, Massachusetts, and the University of Vermont in Burlington, Vermont ("Universities"). The Universities generate laboratory wastes (as defined in 40 CFR 262.102) some of which will be hazardous wastes. As long as the Universities comply with all the requirements of 40 CFR part 262, subpart J, the Universities' laboratories which are participating in the University Laboratories XL Project are not subject to the provisions of 40 CFR 262.11, ~~or~~ 262.34(c), 40 CFR Part 264, 40 CFR part 265 or the permit requirements of 40 CFR part 270 with respect to said laboratory wastes.**	**40 CFR § 262.10 "Purpose, Applicability and Scope"**	**VT "Purpose, Scope and Applicability" in 7-301. (A comparable addition to the general language in 7-301 would be required in the form of a rulemaking or consent order or agreement)** **MA "Purpose, Scope and Applicability" in 30.301 (The state will address the applicability of 30.301 through an appropriate legal mechanism)**	**Allows the Universities to manage hazardous waste under the well defined scheme outlined in Subpart J as an alternative to managing the wastes under satellite storage requirements of 262.34(c).** **Management of laboratory wastes would be effectively managed and adequately regulated in accordance with the institutional EMP and be subject to specific minimum performance standards for the handling and management of laboratory wastes.**

Regulatory Relief Requested	Federal Citation	State Citation	Operative Effect of Relief Requested
Hazardous Waste Determination	**262.11 Hazardous Waste Determination**	**VT "Hazardous Waste Determination" listed in 7-202, 7-303 and 7-305(b)** **MA "When a Waste Becomes a Hazardous Waste" 30.302**	**Explicitly identifies the point where Universities will be responsible for making hazardous waste determination. Once laboratory wastes are received at the hazardous waste accumulation area University staff would determine, in accordance with §262.11, whether any solid waste is hazardous waste. This approach would be conditioned on the laboratory waste being managed in conformance with the EMP and minimum performance criteria up until the point it is received at the hazardous waste accumulation area.**
Satellite Accumulation	**262.34(c)(1)**	**VT 7-310** **MA30.340(4)(c)(1-2) and SQG at 30.351(4)**	**Same or lower quantity thresholds maintained. Laboratory wastes are adequately regulated managed in accordance with the enforceable minimum performance criteria in this XL Project.**

Regulatory Requirement	Federal Citation	State Citation	Operative Effect of Relief Requested
Satellite Accumulation	**262.34(c)(2)**	**VT 7-310(a)(7)** **MA 30.340(4)(c)(2) and SQG at 30.351(4)(d)**	**Minimum performance criteria that laboratories have 30 days, once threshold is reached, to remove laboratory wastes to hazardous waste accumulation areas.**
Satellite Accumulation		**VT 7-310(c)** **MA 30.340(4)(c) and SQG at 30.351(4)(c)**	**Each institution's EMP defines the procedure(s) for management of containers of laboratory waste, but there is a 55 gallon limit *per laboratory* and a *110 gallon limitation on the total amount of waste.***
Closed container	**265.173(a) as referenced by 262.34(c)(1)(i)**	**VT 7-310(a)(4)** **MA30.685(1) referenced from 30.340**	**Containers must be closed except when adding and removing waste and minimum performance criteria additionally define in-line waste collection containers for laboratory scale experimentation as adding waste.**

APPENDIX 3

PROJECT XL STAKEHOLDER LIST

ML Strategies and the XL Participants have been in direct contact with the following external stakeholders. All received a copy of the proposal and many commented. Additional stakeholders have reviewed materials on the Project XL Web Site.

Last Name	First Name	Affliliation
Ashbrook	Peter	Univ. of Illinois - Urbana-Champaign
Allen	Greg	US EPA -Region 3
Barkely	Emmett	Howard Hughes Medical Institute
Barney	Craig	Stanford University
Bergstrom	Steve	Department of Environmental Protection
Bodhi	Epi	Amherst Public Health Department
Boegel	Joan	Genzyme
Brannegan	Daniel	Pfizer, Inc.
Brehio	Steve	Northeastern University
Burns	Paul	Massachusetts Public Interest Research Group
Calder	Steve	US EPA - Region 1
Carey	Margaret	American Chemical Society
Castro	Michael	Newton Fire Department
Costello	Richard	University of Texas - Houston HSC
Coviello	Dave	Advanced Environmental Technical Services
Coxe	Trudy	Executive Office of Environmental Affairs
Danheiser	Rick	Massachusetts Institute of Technology
DeLaHunt	John	Colorado College
Dewey	Mary	University of Vermont
DiBerardinis	Lou	Environmental Medical Service
Ferazani	Lawrence	Cambridge Fire Department
Finn	Khris	Charles River Watershed Association
Fowler	Angela	Public Works Department
Foy	Doug	Conservation Law Foundation
Gemmellaro	Tony	Alpha Beta Technology, Inc.

Gibbs, CIH	**Lawrence**	**Stanford University**
Griffin	**H. Joseph**	**Harvard University**
Grupenhoff, Ph.D.	**John T.**	**National Assoc. of Physicians for the Environment**
Hagan	**Phillip E.**	**Georgetown University**
Hall	**Gail**	**Trinity College**
Hawkens, Esq.	**George S.**	**Stoney Brook - Millstone Watershed Association**
Hearn	**Michael**	**Wellesley College**
Howard	**Suzanne**	**Boston College**
Howland	**Dave**	**DEP**
Huang	**Robert**	**University of Massachusetts Boston**
Hull	**M.C.**	**San Diego State University**
Kelly	**Anne**	**US EPA - Region 1**
Kidd	**Keith**	**Tufts University**
Knox	**Ellen**	**Amherst Solid Waste Committee**
Kunz	**Jeffrey J.**	**Second Nature**
Labato	**Frank**	**University of Connecticut**
LaCroix	**Joseph**	**Newton Fire Department**
Leiby	**Anne**	**US EPA**
Lennett	**David**	**Environmental Defense Fund**
Lupin	**Scott**	**University of Maryland**
Marshall	**Peter**	**VT Dept of Environmental Conservation, Hazardous Waste Program**
Matilla	**Rick**	**Genzyme**
Maxfield	**Rob**	**US EPA**
McCassie	**Joel**	**US Army Soldier Systems Command**
McDougall	**Martha**	**UCSD and CSHEMA**
McGiff	**Thomas**	**Cornell University**
Miller	**James**	**Department of Environmental Protection**
Norman	**Randy**	**Massachusetts BioServices, Inc.**
Paddock	**Lee**	**Attorney Generals Office - Minnesota**
Parker	**Lieutenant R**	**Boston Fire Department**
Pencarbo	**Oscar**	**DEP**
Pine, Ph.D.	**Stanley**	**California State Univ. - LA**
Porteous	**Don**	**US EPA**
Price	**John M.**	**Northeastern University**

Prizner	**Frank**	**PRIZIM, Inc.**
Reagan	**Sean L.**	**Harvard University**
Reinhardt	**Peter**	**Univ of Wisconsin**
Richardson	**J. Michael**	**Pfizer, Inc**
Rondeau	**Karen**	**Massachusetts Water Resource Authority**
Safter	**Warren**	**Univ of Georgia, Savannah River Ecology Lab**
Savage, Ph.D.	**Deborah**	**Tellus Institute**
Scavitto	**Tom**	**Boston Fire Department**
Schoener	**Edward**	**Ecologia**
Simoes	**Steve**	**Vermont Dept. of Environmental Conservation**
Skinner	**Anne**	**Williams College**
Snyder	**Gina**	**US EPA - Region 1**
Stine	**Deb**	**National Academy of Science**
Taylor	**Barbara**	**B.F. Taylor Associates, Inc.**
Thomann	**Wayne**	**Duke University**
Thompson, Ph.D., CIH	**Fay M.**	**Univ of Minnesota**
Tobin	**Rebecca**	**Boston College**
Tuttle	**Charlie**	**Executive Office of Environmental Affairs**
Van Schalkwyk	**Bill**	**Massachusetts Institute of Technology**
Vocke	**Robert**	**Los Alamos National Laboratory**
Walker	**Sherri**	**US EPA - Office of Reinvention`**
Wallace	**Leonard**	**US EPA - Region 1**
Walsh	**Walter**	**US EPA - Office of Reinvention**
Wawzniecki	**Stefan**	**University of Connecticut**
Webster	**David**	**US EPA - Region 1**
Wong	**Tamoe**	**National Academy of Sciences**
Woodbury	**Steven**	**U.S. Department of Energy**
Wyveen	**Jeff**	**Baxter Healthcare**
Zarate	**Lynne**	**Georgetown University**