February 27, 2013

Chancellor Edward MacKay
University System of New Hampshire
Dunlap Center
25 Concord Road
Lee, NH 03824

RE: USNH Environmental Health and Safety Annual Report

Dear Chancellor MacKay,

I am pleased to forward you the USNH Environmental Health and Safety Report for 2012. The Board of Trustees (BOT) Operation and Maintenance of Property Policy (VI.F.3.3.3) calls on the Presidents, in collaboration with the Chancellor, to establish procedures to ensure the prudent management of environmental health and safety in compliance with applicable state and federal laws. Those procedures shall include coordination with a Council on Environmental Health and Safety with representation from each component institution. These procedures shall also include, where appropriate, a mechanism for measuring compliance through appropriate means including periodic environmental audits. The Chancellor shall coordinate presentation to the Audit Committee of an annual report describing the state of the University System's environmental health and safety efforts at each institution, including the findings of any environmental audit conducted during the reporting period.

The USNH Council on Environmental Health and Safety has representation from each component institution. Membership includes Peter Conklin, Granite State College, Sylvie Rice, Keene State College, Bradford Manning, University of New Hampshire, Tia Miller and Justine Hebert, University System of New Hampshire (USNH) and Victoria Escalera, USNH Internal Audit (ex officio). There is a vacancy for the Council seat that represents Plymouth State University. The Council prepared this Annual Report following the elements and objectives stated in the USY Administrative Board Operation and Maintenance of Property Policy (VI.F.3.3.3).
The Annual Report contains a summary of compliance status for each component institution, individual campus environmental health and safety reports and a comparison of campus specific compliance progress spreadsheets for 2011 and 2012.

Please do not hesitate to contact me if you require any additional information.

Sincerely,

Bradford Manning, Chair
USNH Council on Environmental Health and Safety

Cc: Peter Conklin, GSC
    Sylvie Rice, KSC
    Tia Miller, USNH
    Justine Hebert, USNH
    Victoria Escalera, USNH
Executive Summary

This report details USNH Environmental Health and Safety (EH&S) program activities for 2012 and presents operational data that represents environmental management efforts conducted by USNH EH&S Offices and other University collaborators.

Activities are described by the disciplinary groups responsible for the respective EH&S functions at each institution and reflect individual management system plans (goals and objectives) of the campuses. All EH&S activities that monitor and otherwise influence operations that present potential environmental impacts are described together. Although described in more detail elsewhere in the report, certain accomplishments credited to this year must be highlighted in order to understand the very scope and long-term value of the Environmental Health and Safety program at each campus. Each of the accomplishments listed below is the culmination of persistent efforts of professional USNH EH&S staff and all involve extensive collaborations with other USNH departments and support programs.

Granite State College

Environmental Health and Safety planning at Granite State College in 2012 was focused on routine workplace health and safety issues including: ergonometric evaluations, personal safety/security audits, safe staffing protocols, and code of conduct response. Our only significant EHS response was relocating staff from the Dolloff Building in Concord, NH to avoid an indoor air quality issue associated with renovations.

Keene State College

Significant health & safety related projects accomplished during the past year at Keene State College (KSC) include:

- KSC added a part-time Chemical Hygiene Officer (CHO) to assist the Environmental Health and Safety (EHS) Manager. Dr. Susan Piscopo, an adjunct professor in Biology, has been acting as the CHO since May 2012. During this time, she has identified and taken steps to rectify deficiencies with our CEMS inventory and hazardous waste compliance. She has also been working closely with staff and faculty to help them use CEMS more effectively and efficiently to manage their chemical inventories.
- KSC’s fall protection procedures were updated in 2012.
- The Health and Safety Committee supplied funds to purchase new chorale risers for the Music Department, and eight new Automatic External Defibrillators (AEDs) for the Campus.
- KSC successfully implemented its life safety emergency preparedness and evacuation plan for Commencement in May 2012. Many participants observed that the May 2012 Commencement was more orderly and calmer than in previous years, perhaps due to the presence of the crowd managers.
- An ad hoc subcommittee of the Health and Safety Committee that was initially convened in 2011 to look at the issue of student safety at 24-hour access areas reported their findings back to the Cabinet and at the Academic Affairs Retreat in the summer of 2012. The EHS manager has also been meeting regularly with the Provost to explore ways to enhance the academic safety culture at KSC. In addition, a senior capstone Safety Studies project in the fall of 2012 focused on developing a comprehensive set of safety procedures for the new TDS building. KSC’s Workwise NH will be conducting an in-depth evaluation of our medium and high-risk spaces (e.g., Wood Shop, SPDI Lab, Sculpture Studio, Theatre Set Shop, Science Laboratories, etc.) in the spring of 2013.

Plymouth State University

Throughout 2012 and despite a sixteen month management vacancy within the department, the Environmental Health & Safety (EH&S) office at Plymouth State University (PSU) has continued to work
closely with numerous departments across campus to both ensure and maintain the health and safety of the campus. In November 2011, the EH&S/Emergency Manager left Plymouth State University Physical Plant after nearly seven years of service. Since that time, the department has operated under the guidance of the Director of Physical Plant and with coordinated efforts from the PSU Physical Plant management team and contracted environmental and safety consultants. As part of efforts to secure another full time EH&S Manager and better align the program with evolving campus needs, a recent review and restructuring of the position has been completed. As a result of the aforementioned review and restructuring, the campus has realigned its emergency management/preparedness/response program so that it now includes an Emergency Management position within the University Police Department. Emergency Management will no longer reside directly under the EH&S office. Plans at this time include the EH&S Manager to remain directly within the Physical Plant Department and along with full department support, the office will continue to provide assistance as campus emergency response needs arise. It is with hope that the EH&S position will be filled in the near future. Emergency management needs for 2012 were drastically reduced in comparison to the devastation experienced by the campus in 2011 with Tropical Storm Irene.

University of New Hampshire

2012 major accomplishments include:

- **Parsons Hall Legacy Chemical Removal and Radiological Decommissioning Project**
  In 2009 an extensive renovation of Parsons Hall, which primarily houses the UNH Chemistry Department and a few related programs, commenced after the May graduation ceremonies. The north, west, south and southwest wings that house instructional and research laboratories were planned for full interior demolition and renovation. The inventory of hazardous materials in these laboratories numbered approximately 20,100 containers. Many of these containers would be consigned for disposal as faculty and staff began the process of decommissioning their laboratory space. Planning for the scope and cost of this major chemical reduction initiative began in 2008, approximately one year before the initiation of construction activities. The offices of the Senior Vice Provost for Research, the Vice President of Finance and Administration and the Dean of the College of Engineering and Physical Sciences agreed to equally share the cost to dispose of these legacy chemicals. Project. 16,685 chemical containers were removed from the Parsons Hall hazardous material inventory.

- **Hazardous Building Materials**
  In 2011 OEHS initiated a program to identify and manage hazardous building materials, more specifically asbestos and lead based paint associated with campus buildings. During 2012 OEHS coordinated the assessment of eight campus buildings. They include Spaulding Hall, Nesmith Hall, Memorial Union Building, Randall Hall, Hitchcock Hall, Devine Hall, Alexander Hall, and McLaughlin Hall. The overall goal of the project continues to be to create a comprehensive inventory and centralized database of those hazardous building materials and provide the information to those operating groups that could potentially be impacted. Since the mid 1980’s UNH has performed hundreds of survey efforts and subsequent abatement projects, which have been coordinated by multiple operating groups, leaving gaps in data that could potentially increase the risks associated with potential exposures. During 2012 OEHS submitted to the Enterprise Facilities Assets Management Steering Group a request to incorporate the survey data into the FAMIS electronic management system. This will allow those operating groups, such as Facilities Operations, Facilities Contract Management, and Facilities Construction Team to have access to the inventory data and allow them to plan work accordingly. OEHS with the assistance of Facilities Information Technology have developed an electronic reporting format which will provide a brief warning statement on those work orders developed for areas where asbestos and/or lead based paint is present. In addition it will allow management personnel access to the completed survey reports and asbestos inventory spreadsheets for each building. OEHS is anticipating completing this task in early 2012 and will continue to populate FAMIS with hazardous building material data as buildings are surveyed and data comes available.
• **Campus-wide Biohazardous Waste Program.**
A written biohazardous waste program was implemented to streamline the biohazardous waste processes for the Durham and Manchester campuses and the Jackson Estuarine Laboratory. The plan outlines handling procedures for solid and liquid biohazardous waste, as well as sharps waste. Autoclave validation procedures, testing procedures and record keeping are outlined in the plan. Two Durham campus buildings positively impacted by the biohazardous waste plan are Rudman Hall and Kendall Hall. The plan has been well received by occupants of these buildings and procedures have been praised for being straightforward and easy to follow.

• **UNH CEMS Flammable Liquid Inventory Report.**
OEHS responded to concerns from the State Fire Marshal regarding storage volume of flammable liquids in newly renovated laboratories in Parsons Hall. OEHS provided a summary of information about UNH CEMS and management of flammable liquids in laboratories to the State Fire Marshal. OEHS worked with UNH Research Computing, Parsons Construction Team, Durham Fire Department, and UNH Facilities Design and Construction to create a custom report in UNH CEMS to address the Fire Marshal’s concerns. The custom report in UNH CEMS generates a warning when flammable storage capacity in a lab unit approaches or exceeds regulatory storage limits. The report generates automatic emails that provide advance warning to researchers that they are approaching their storage limit. When storage limits are exceeded, researchers, OEHS, and Durham Fire are automatically notified.

• **Flammable Liquid Storage Refrigerators.**
OEHS addressed a long-standing issue of limited access in Parsons Hall to flammable liquid storage refrigerators and freezers. OEHS collaborated with researchers to identify their storage needs and purchase new refrigerators and freezers required for storage of flammable materials. This action was planned to coincide with laboratory relocation efforts associated with the Parsons Hall renovation project.

**University System of New Hampshire Central Offices**

The USNH Safety Committee provides support for the Dunlap and Myers Centers in Lee, New Hampshire. Meetings occur quarterly and include representation from operating staff, professional and technical employees and administrators. Minutes of the Dunlap/Myers Joint Loss Management Committee are taken, reviewed and maintained.
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<th>Program Elements</th>
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**LEGEND**
- Program in place
- Program undergoing review, improvement, or under development
- Program not in place
- Not Applicable
### Program Elements

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<td>Integrated Contingency/Spill Prevention Control &amp; Countermeasure Plan</td>
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<td>Diving Safety Manual</td>
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### 3.3.3.2 Hazardous Materials & Environmental Management

#### 3.3.3.2.1 Hazardous Waste Management

|             | Hazardous Waste Management Program |
|             | EPA Identification Number |
|             | Faculty/Staff/Student Training |
|             | Contingency Plans for Central Accumulation Area |
|             | Satellite Accumulation Area Inspections |

#### 3.3.3.2.2 Hazardous Materials Inventory and Reporting

|             | Chemical Environmental Mgmt System/Inventory System |
|             | DEA Controlled Substances Inventory |
|             | DHS Chemicals of Interest Inventory |
|             | Community Right To Know/SARA Title III |
|             | Material Safety Data Sheets |
|             | Chemical Safety/Hygiene Plan |
|             | Chemical Laboratory Inspections |
|             | Chemical Safety Committee |
|             | Title 5 Air Permit |
|             | Stormwater Management Plan |
|             | Refrigerant Management Plan |
|             | Water Quality Permits |
USNH Environmental Health and Safety Annual Report - 2012
University System of New Hampshire Central Offices

1. MISSION STATEMENT

The University System of New Hampshire's Central Offices are committed to providing and maintaining a safe environment for its employees and visitors. USNH focuses on fire and life safety, hazardous material management, accident prevention, industrial hygiene, and safety and health training. The University System of New Hampshire Central Offices complies with all required Federal, State and Local statutes and with USNH Policy.

2. AUTHORITY

USNH Board of Trustee Policy (BOT VI.F.2) requires the Chancellor to establish sensible property and environmental management practices delegated to the chief executive officers of USNH. Measures include prudent management of environmental health and safety in order to be in compliance with state and federal laws. Component institutions have representatives serving on the USNH Council on Environmental Health and Safety. The USNH Council prepares annual reports, measures compliance through internal audit reviews, and supports organizational efforts to administrators providing technical consultation and program support.

3. CAMPUS PROGRAM ELEMENTS

The USNH Safety Committee provides support for the Dunlap and Myers Centers in Lee, New Hampshire. Meetings occur quarterly and include representation from operating staff, professional and technical employees and administrators. Minutes of the Dunlap/Myers Joint Loss Management Committee are taken, reviewed and maintained.
4. **INJURY AND ILLNESS PREVENTION**

A. **Industrial Hygiene**

USNH contracts with MEMIC Indemnity Company safety management specialists and outside consultants contracted through USNH Purchasing to perform air quality monitoring and evaluation on an as-needed basis. Other types of industrial hygiene are not generally applicable to the USNH Central Offices.

B. **General Safety**

Injury control is the primary issue for the University System Central Offices. Accident investigation is performed when an illness/injury report is filed with the office of Human Resources. Recommendations are made, if necessary, to prevent recurrence. Safety management specialists from MEMIC are also available to assist with accident investigations and risk management oversight.

C. **Radiation Safety**

This program is not applicable at the University System Central Offices.

D. **Fire Protection**

The USNH Facility Supervisor performs annual site and safety inspections of the Dunlap and Myers Centers buildings. Part of the inspection addresses fire and evacuation routes and planning procedures. Evacuation drills are held annually. The fire drills are conducted under the role of the Lee Fire Department. The Lee Fire Department conducts building inspections working with the USNH Facility Supervisor.

E. **Occupational Health and Medicine**

This program is not applicable at the University System Central Offices.

F. **Disaster Preparedness**

USNH has emergency evacuation procedures which address evacuation in case of disasters. USNH Central Offices participate in the UNH Alert system administered by the UNH Police Department. This system allows UNH to contact USNH staff during an emergency by sending text messages to staff emails, cell phones, pagers and blackberries/smart phones.
G. **Biological Safety**

This program is not applicable at the University System Central Offices.

H. **Diving Safety**

This program is not applicable at the University System Central Offices.

5. **HAZARDOUS MATERIALS & ENVIRONMENTAL MANAGEMENT**

A. **Hazardous Waste Management**

The USNH Central Offices deals with a small amount of hazardous waste. Identifiable waste streams include fluorescent light bulbs, copier machine and laser printer toner and outdated computer monitors. The Facility Supervisor is responsible for the disposal of all of the above mentioned items. He has contracted with an environmental firm for the proper disposal of all hazardous waste items.

B. **Hazardous Materials Inventory and Reporting**

There are janitorial cleaning supplies located on site in both buildings. MSDS information is posted on site and janitorial employees are trained on the proper use of cleaning supplies.

6. **MECHANISMS FOR COMPLIANCE**

The USNH Facility Supervisor ensures the compliance with safety policies by performing site evaluations and contracting with environmental specialists to assist with internal audits. Annual evaluations of buildings are conducted utilizing appropriate outside professional expertise as needed. Items reviewed include: facility safety issues and procedures, fire drills, (including the conducting of drills), the posting of emergency exit signs and diagrams in both buildings, inspecting fire extinguishers, and the removal of hazardous materials as outlined in 5A. The Facility Supervisor provides the Dunlap/Myers Joint Loss Management Committee regular updates on the results of the evaluations and audits and on efforts to mitigate any items of concern noted in the reports.
## Program Elements

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<tr>
<td>• Fire Evacuation Drills</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LEGEND**

- Program in place
- Program under development
- Program not in place
- Not Applicable
### Program Elements 2011-2012

#### 3.3.3.1.2.5 Occupational Health and Medicine
- Respirator Medical Questionnaire
- Hepatitis B Vaccination
- Animal Handlers Occupational Health

#### 3.3.3.1.2.6 Disaster Preparedness
- Emergency Operations Plan
- Emergency/Fire Evacuation Plan
- Aboveground Storage Tank Program
- Underground Storage Tank Program
- Integrated Contingency/Spill Prevention Control & Countermeasure Plan

#### 3.3.3.1.2.7 Biological Safety
- Institutional Biosafety Committee
- FDA Food Biosecurity Application
- Biosafety Manual
- Recombinant DNA Registration
- Biosafety Laboratory Surveys
- Inventory of Infectious Material

#### 3.3.3.1.2.8 Diving Safety
- Diving Safety Control Board
- Diving Safety Officer
- Diving Safety Manual

#### 3.3.3.2 Hazardous Materials & Environmental Management

##### 3.3.3.2.2.1 Hazardous Waste Management
- Hazardous Waste Management Program
- EPA Identification Number
- Faculty/Staff/Student Training
- Contingency Plans for Central Accumulation Area
- Satellite Accumulation Area Inspections

##### 3.3.3.2.2.2 Hazardous Materials Inventory and Reporting
- DEA Controlled Substance Inventory
- DHS Chemicals of Interest Inventory
- Chemical Environmental Mgmt System/Inventory System
- Community Right To Know/SARA Title III
- Material Safety Data Sheets
- Chemical Safety/Hygiene Plan
- Chemical Laboratory Inspections
- Chemical Safety Committee
- Title 5 Air Permit
- Stormwater Management Plan
- Refrigerant Management Plan
- Water Quality Permits
Environmental Health and Safety planning at Granite State College in 2012 was focused on routine workplace health and safety issues including: ergonomic evaluations, personal safety/security audits, safe staffing protocols, and code of conduct response. Our only significant EHS response was relocating staff from the Dollof Building in Concord, NH to avoid an indoor air quality issue associated with renovations.

1. Mission Statement

Granite State College (GSC) is committed to providing and maintaining a healthy and safe environment for students, employees, and visitors by ensuring compliance with legislative requirements as decreed by federal, state and local statutes, USY Policy VI.6 and GSC policy.

2. Authority

The Board of Trustees Operation and Maintenance of Property Policy (BOT VI.F.3.3.3) calls on the Chancellor to establish procedures to ensure the prudent management of environmental health and safety in compliance with applicable state and federal laws. These procedures include formation of a Council on Environmental Health and Safety with representation from each component institution and further a delegation of authority to the component institutions. In addition, the policy calls for preparation of an annual report describing the status of the University System’s environmental health and safety efforts, as well as providing a mechanism for measuring compliance through periodic audits.

The USY Administrative Board Policy on Operation and Maintenance of Property/Policy on Environmental Health and Safety (USYVI.F.3), approved by the President of each component institution, delegates to the President of Granite State College the
responsibility for implementing USNH Policy on Environmental Health and Safety for the college. In turn, the President of GSC has delegated this responsibility to the Director of Facilities, Safety, and Sustainability (hereafter GSC Safety Liaison) who will work towards the development and implementation of safety protocols around the College’s ten centers/locations:

- **Littleton Center** – 39 Main Street, Littleton, NH
- **Conway Center** – 53 Technology Lane, Suite 150, Conway, NH
- **Concord Center** – 8 Old Suncook Road, Concord, NH
- **Claremont Center** – 27 Pleasant St., Claremont, NH
- **Lebanon Center** – 24 Airport Road, West Lebanon, NH
- **Manchester Center** – 195 McGregor Street, Manchester, NH
- **Nashua Center** – 505 Amherst Street, Nashua NH
- **Rochester Center** – 35E Industrial Way, Rochester, NH
- **Portsmouth Center** – 51 International Drive, Portsmouth, NH
- **Dollof Center*** - 117 Pleasant Street, Concord, NH  
  *Education & Training Partnership Program

3. **Campus Program Elements and Objectives**

GSC has adopted a Health and Safety Mission Statement that works to assure safe and healthful environments for all segments of the GSC population through programs of information and education, review and monitoring, and technical consultation as needed. GSC has implemented programs to ensure compliance with applicable state and federal health, safety and environmental regulations, as well as GSC policies on environmental health and safety.

**Injury and Illness Prevention**

a. **Industrial Hygiene**
   
   GSC has access to safety management specialists at MEMIC and outside consultants contracted by USNH to perform air quality monitoring and/or evaluation on an as needed basis. Other types of industrial hygiene are not generally applicable to GSC.

b. **General Safety**
The primary GSC safety issue is injury control. Ergonomic evaluations are performed as requested. Accident investigation is performed when an illness/injury report is filed with human resources, and recommendations are made, if necessary, to prevent recurrence.

c. Radiation Safety
   Not applicable

d. Fire Protection
   The GSC Safety Liaison performs annual site safety inspections of all of the College’s facilities. Part of this inspection addresses fire evacuation routes and planning. Each location will have evacuation drills annually.

d. Occupational Health and Medicine
   Not applicable

e. Disaster Preparedness
   Emergency evacuation procedures address evacuation in case of other disaster. The Comprehensive Safety Plan addresses in detail disaster preparedness.

f. Biological Safety
   Not applicable

g. Diving Safety
   Not applicable

Hazardous Material & Environmental Management

a. Hazardous Waste Management
   GSC deals with very little hazardous waste. The only identifiable hazardous waste would be the disposal of fluorescent light bulbs, copier machine toner, and outdated computer monitors. GSC IT staff work with outside vendors to ensure the proper disposal of computer monitors. Each location has protocol in place for proper disposal of fluorescent light bulbs and copier toner.

b. Hazardous Materials Inventory and Reporting
   The GSC locations that store janitorial cleaning supplies on site have MSDS information on site, updated by the janitorial companies.

4. Mechanisms to Measure Compliance
   GSC measures compliance with safety policy by performing internal audits in the form of safety site evaluations of each center. These evaluations will be
scheduled on an annual basis using a checklist of potential safety hazards that was created by the GSC Safety Liaison and approved by the UNH Director of Environmental Health and Safety working on behalf of USNH Council of Environmental Health & Safety. This checklist will include the monitoring of facility safety issues, as well as verifying safety procedures are in place for fire drills, emergency evacuation plans, hazardous materials disposal, and air quality.

The GSC Safety Liaison is the safety contact person responsible for safety oversight in all GSC locations. Responsibilities include maintaining and stocking first aid kits, posting emergency exit diagrams, conducting fire drills, and overseeing the inspection of fire extinguishers.
### 3.3.3.1.1 Injury and Illness Prevention

#### 3.3.3.1.2.1 Industrial Hygiene
- Asbestos Abatement
- Lead Abatement
- Hearing Conservation
- Indoor Air Quality
- Personnel Exposure Monitoring for Toxic Materials
- Respiratory Protection
- Hazard Communication
- Heat Stress
- Illumination

#### 3.3.3.1.2.2 General Safety
- Confined Space
- Fall Protection
- Ergonomic Evaluation
- Lock-Out/Tag-Out
- Laser Safety
- Accident Investigation
- Dig Safe Program
- Bloodborne Pathogens
- Workplace Safety Inspections

#### 3.3.3.1.2.3 Radiation Safety
- Radioactive Material License
- Radiation Safety Committee
- Radioactive Material Inventory
- Radiation Safety Manual
- User/Awareness Training
- Radiation Safety Laboratory Inspections
- Dosimetry

#### 3.3.3.1.2.4 Fire Protection
- Fire and Life Safety Building Inspections
- Fire Evacuation Drills

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**LEGEND**
- Program in place
- Program undergoing review, improvement, or under development
- Program not in place
- Not Applicable
### Program Elements

#### 3.3.3.1.2.5 Occupational Health and Medicine
- Respirator Medical Questionnaire
- Hepatitis B Vaccination
- Animal Handlers Occupational Health

#### 3.3.3.1.2.6 Disaster Preparedness
- Campus Emergency Operations Plan
- Emergency/Fire Evacuation Plan
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- Chemical Environmental Mgmt System/Inventory System
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- DHS Chemicals of Interest Inventory
- Community Right To Know/SARA Title III
- Material Safety Data Sheets
- Chemical Safety/Hygiene Plan
- Chemical Laboratory Inspections
- Chemical Safety Committee
- Title 5 Air Permit
- Stormwater Management Plan
- Refrigerant Management Plan
- Water Quality Permits
USNH Environmental Health and Safety Annual Report
Keene State College
Calendar Year 2012

1 Highlights

Significant health & safety related projects accomplished during the past year at Keene State College (KSC) include:

• KSC added a part-time Chemical Hygiene Officer (CHO) to assist the Environmental Health and Safety (EHS) Manager. Dr. Susan Piscopo, an adjunct professor in Biology, has been acting as the CHO since May 2012. During this time, she has identified and taken steps to rectify deficiencies with our CEMS inventory and hazardous waste compliance. She has also been working closely with staff and faculty to help them use CEMS more effectively and efficiently to manage their chemical inventories.

• KSC’s fall protection procedures were updated in 2012.

• The Health and Safety Committee supplied funds to purchase new chorale risers for the Music Department, and eight new Automatic External Defibrillators (AEDs) for the Campus.

• KSC successfully implemented its life safety emergency preparedness and evacuation plan for Commencement in May 2012. Many participants observed that the May 2012 Commencement was more orderly and calmer than in previous years, perhaps due to the presence of the crowd managers.

• An ad hoc subcommittee of the Health and Safety Committee that was initially convened in 2011 to look at the issue of student safety at 24 hour access areas reported their findings back to the Cabinet and at the Academic Affairs Retreat in the summer of 2012. The EHS manager has also been meeting regularly with the Provost to explore ways to enhance the academic safety culture at KSC. In addition, a senior capstone Safety Studies project in the fall of 2012 focused on developing a comprehensive set of safety procedures for the new TDS building. KSC’s Workwise NH will be conducting an in-depth evaluation of our medium and high-risk spaces (e.g., Wood Shop, SPDI Lab, Sculpture Studio, Theatre Set Shop, Science Laboratories, etc.) in the spring of 2013.

2 Mission Statement

Keene State College is committed to providing a safe and healthy environment for its students, employees, and campus visitors. Such an environment is essential for the College to meet its mission of instruction, research, and public service. Keene State meets this obligation by complying with the University System of New Hampshire (USNH) Policy on Environmental Health and Safety, as well as state and federal environmental, health and safety (EHS) regulations.

The President of KSC is responsible for the implementation of the Environmental Health and Safety Policy. The Office of Environmental Health & Safety (EHS) develops the appropriate KSC EHS programs and procedures to ensure compliance. Administration, faculty, and supervisory staff are responsible for the health and safety of those engaged in activities under their direction or supervision. All members of the campus community are responsible for following KSC environmental, health and safety procedures.
KSC’s EHS office supports the College’s mission by providing leadership, resources, and services to ensure a safe and healthy working environment for all members of the College community and to manage the impact of College operations on the surrounding community. Areas of responsibility include hazardous materials management, occupational health, general safety, illness and injury prevention, industrial hygiene, environmental management, and other technical areas, as outlined in the USNH Policy on Environmental Health & Safety.

KSC, as required by USY VI.6, along with the University of New Hampshire (UNH), Plymouth State University (PSU), and Granite State College (GSC), is required to submit an annual report to the Chancellor outlining the status of compliance for environmental health and safety programs. The EHS Manager for KSC is the College’s representative on the USNH Council on Environmental Health and Safety.

3 Campus Program Elements
At KSC, the EHS office is staffed by one full-time employee (the EHS Manager) who is assisted by one part-time chemical hygiene office (new as of June 2012) and one part-time student worker. KSC also has an active Health and Safety Committee that meets monthly to provide guidance and direction to the EHS Manager, especially with regard to promoting health and safety in the workplace and recommending initiatives which will enhance the health and safety of faculty, staff, students and the general public while at Keene State College.

The EHS Manager’s responsibilities fall into three main categories: environmental compliance, health and safety, and emergency preparedness, as shown in the following diagram. Each of these areas is governed by a number of state and Federal regulations and other guidelines.
The narrative below includes a snapshot of the highlights of the KSC EHS program for 2012. The attached “Traffic Light Summary” shows the current status of the safety program elements. 2011 and 2012 performances are also listed to show areas that have improved or are in need of improvement.

3.1 Injury and Illness Prevention

A total of 69 accidents or near misses were reported at Keene State College in CY2012. These reported incidents include injuries to students and ‘near miss’ incidents that were reported but did not trigger worker’s compensation. The significant decrease in accidents in 2012 is believed to be caused by a reduction in the number of student injuries as well as a milder winter in 2012, as compared to 2011. Approximately 33% of the injuries at Keene State were attributed to slips, trips, or falls, of which only three falls (4%) were related to ice or snow in 2012, as compared to 14 weather-related falls in CY2011.

The accompanying table shows a comparison of accidents by season between 2004 and 2012, including the average for the same time period. The table also shows the breakdown of type of injury for the same time period. The two pie charts show the types of injuries in 2012, as compared to the eight year average. In CY2012, 22 of the reported accidents (32%) were also filed with MEMIC (KSC’s insurance carrier for worker’s compensation). Approximately 54% of the reported accidents/injuries required medical attention, although none of the accidents resulted in lost time.
3.1.1 *Industrial Hygiene*

Asbestos abatement continues as needed for both large and small renovation projects. The largest asbestos abatement project conducted this past year was for Grafton House which was demolished in the summer of 2012. Small asbestos abatement projects were also conducted at Randall Hall.
KSC, UNH, and USNH collaborated on the term agreements for industrial hygiene contracts and asbestos abatement contracts in 2012.

The EHS Manager attended a seminar sponsored by the Indoor Air Quality Association (IAQA) on “Mold: The Facts and Fiction of Initial Investigations, Scope of Work and Clearance from the perspective of Building Managers, Consultants and Contractors” in October 2012.

Indoor air quality issues continue to be a concern at the Fiske Annex. Roof samples collected in January 2012 confirmed the presence of saturated roof insulation above the Fiske Annex, and a detailed visual inspection indicated that the north and east brick walls of Fiske Hall were in serious need of repointing. The repointing was completed in the Summer/Fall of 2012, with roof insulation replacement anticipated to commence in Spring 2013.

In September 2012 occupants in both Fiske Annex and in the Fiske Hall reported a terrible sewage smell during periods of heavy rain. With the help of the City Department of Public Works, a dye test study confirmed that the Fiske Annex roof drains were properly connected to the City’s stormwater system. The issue was later resolved by capping a stormwater drain in the air intake pit located on the south side of Fiske, pumping the storm drain located near the trash collection pickup site near Fiske, and moving the pickup location to the west side of the plumbing shop.

In response to on-going complaints from the Alumni Center an outside contractor was hired to complete a thorough in-door air quality assessment in January 2012. All of the parameters that were measured (formaldehyde, carbon dioxide, carbon monoxide, relative humidity, temperature, ultrafine particles, and volatile organic compounds) were within or below acceptable limits.

In-door air quality/mold concerns were also reported in the Keddy House, Pondside 3, Thorne-Sagendorph Art Gallery, Pondside 1, Registrar's Office in Elliot Hall, and Rhodes Hall.

KSC is currently updating hazard communication training to comply with OSHA’s new global harmonization system (GHS) for hazard communication, as reflected in the traffic light summary for this element changing from green to yellow. Employers are required to be trained on the new labels elements and safety data sheets format to facilitate recognition and understanding.

### 3.1.2 General Safety

A number of training sessions were conducted and/or coordinated by the EHS Office in 2012. Approximately 400 individuals attended one or more of the sessions including employees from Physical Plant and other departments, as well as students and Keene State College Contractors. These training sessions included:

- New Employee Safety Awareness (multiple sessions, 43 employees)
- Bloodborne Pathogens for Affected KSC employees (Athletics, Campus Safety, Childhood Development Center, Nursing, Health Sciences and Physical Plant--multiple sessions, 26 employees)
- New Faculty Safety Awareness (8 employees)
- Theatre Safety Training (27 employees, students)
- Health and Safety Refresher Training for Physical Plant (39 employees)
- Laboratory Safety/Hazardous Waste Training (multiple sessions 11 faculty/students)
- R.O.C.K.S Crew safety awareness (10 staff/student workers)
The EHS manager provided training on safety and emergency preparedness to campus safety officers at the annual New Hampshire Campus Safety Academy that was hosted by Keene State College in July 2012.

The EHS manager also completed the annual New Hampshire Hazardous Waste Coordinator course offered by the New Hampshire Department of Environmental Services (NHDES) and successfully completed a 13 hour “Hazardous Materials & Waste Transportation Certification Online Course” which meets the Department of Transportation (DOT) requirements of 49 CFR 172.

Other significant accomplishments include:

- The EHS Manager conducted ergonomic evaluations for 22 individual workstations as requested.
- The Health and Safety Committee, with the help of safety students, prepared and electronically delivered the third and fourth issues of the “Health and Safety Newsletter” in 2012 (Spring and December editions). These newsletters were distributed to faculty, staff and students, as well as being available on-line (http://www.keene.edu/ehs/newsletters.cfm).
- KSC fall protection procedures were updated in 2012.
- Conducted annual chemical fume hood testing (July 2012).
- The Health and Safety Committee has prepared a draft policy regarding the use of bicycle helmets to help protect Keene State College (KSC) employees from preventable injury. The EHS Manager will be presenting this proposed policy to the KSC Cabinet for their review and approval in early 2013.
- The Health and Safety Committee contributed to the purchase of new choral risers for the Music Department after the old risers shifted during a performance (fortunately no one was injured). The Health and Safety Committee also contributed to the purchase of new protective netting for the Keene Softball Field to prevent fly balls from bouncing into the bleachers.

The laser safety element on the traffic light summary was changed from gray to yellow to indicate that KSC has yet to identify and inventory lasers that may be used for research and teaching that may be subject to specific safety procedures.

3.1.3 Radiation Safety
KSC has a Radiation Protection Program because the KSC Analytical Geochemistry Laboratory is equipped with a fully-automated scanning wavelength-dispersive XRF spectrometer and the Central New England Molecular Structure Center within the Chemistry Department has an
Agilent Gemini-EOS Single Crystal Dual Wavelength CCD AutoDiffractometer System that was installed in December, 2010. Ionizing radiation is produced within the XRF spectrometer and within the CCD AutoDiffractometer generated from X-ray tubes. Over exposure to such radiation could potentially be very harmful or even lethal. Both the XRF spectrometer and CCD AutoDiffractometer are classified as analytical X-ray machines, whose use is regulated by the State of New Hampshire Department of Health and Human Services Bureau of Radiological Health.

Several low-level radioactive materials were discovered in a Physics laboratory during routine laboratory inspections in December 2012. The chemical hygiene officer (CHO) and EHS manager are working closely with the Physics Department to catalog and manage these sources, which are exempt from U.S. Nuclear Regulatory Commission (NRC) and state licensing requirements. The UNH Radiation Safety Officer has also been assisting KSC with this project. The traffic lights for several radiation safety elements have been changed to yellow to reflect this evolving project.

3.1.4 Fire Protection and Life Safety
The College has almost 700 fire extinguishers and 12 fire suppression residential kitchen hoods located throughout campus. KSC’s EHS student worker has been able to complete monthly inspections in addition to annual maintenance check of the fire extinguishers by Life Safety Inc.

The EHS Manager is the College lead for monthly fire safety meetings with the State Fire Marshal and City of Keene Fire Prevention Office.

The EHS Manager and the Electrical Department have been collaborating on upgrading the carbon monoxide detection systems in Residence Halls to meet new State requirements.

Prior to the demolition of Grafton House, the Keene Fire Department was able to use the building for practice training.

3.1.5 Occupational Health and Medicine
KSC has a voluntary use policy with respect to respiratory protection. This means there are no known job tasks where Permissible Exposure Limits are exceeded. The respirator is provided for the employee for their comfort. If an employee wishes to wear a respirator, he/she must complete the following steps: medical evaluation, training regarding use, cleaning, maintenance and proper storage of the respirator.

Departments and groups within a department which have been identified as having employees with a potential for occupational exposure to bloodborne pathogens include, but are not limited to: Campus Safety, Health Services, Athletic Trainers, Athletic Coaches, Recreational Sports, Physical Plant (Plumbers), Child Development Center, Health Sciences, and Nursing. Annual training and Hepatitis B vaccinations for new employees are provided to faculty and staff who work for these departments.

3.1.6 Emergency Preparedness
KSC successfully implemented its life safety emergency preparedness and evacuation plan for Commencement in May 2012. The goal is for KSC to have a safe and orderly evacuation from the quad to a refuge building in a weather related emergency during commencement. The plan called for training and stationing approximately 50 volunteers as crowd managers, adding evacuation procedures to the commencement program, closely monitoring weather conditions,
and a pre-recorded public service announcement prior to the ceremony regarding emergency evacuation, safety, and decorum. Many participants observed that the May 2012 Commencement was more orderly and calmer than in previous years, perhaps due to the presence of the crowd managers. Fortunately the weather was not a concern during Commencement so the plan did not have to be fully implemented.

The Mason Library received funding to hire a consultant to create a disaster preparedness and recovery plan for the College’s archives, special collections, and film holdings. The EHS manager met with the consultant and assisted in the review of the Disaster plan.

Both the siren and the CityWatch system were activated on May 29, 2012 after the National Weather Service issued a tornado warning for Cheshire County. Campus safety also used CityWatch to notify the KSC community of curtailed operations for several weather-related emergencies, and to alert students of a potentially armed person on campus in December 2012.

The Emergency Core Team was convened in anticipation of Hurricane Sandy in October 2012. Damage from the storm was less severe in Keene than in other areas, but nevertheless KSC was actively involved in pre-storm planning and monitoring starting on Friday, October 26, and continuing throughout the day and evening on Monday, October 29, when the storm passed through New Hampshire. Fortunately KSC only experienced minimal tree damage from this storm, but it was an excellent opportunity for the KSC emergency core team to conduct emergency preparedness meetings, both on-site and remotely via conference calls.

The KSC EHS manager continues to be an active member of the “All Hazards Regional Coordinating Committee” to ensure that our emergency plans are coordinated and consistent with the general emergency plans that are being developed for the greater Keene area (participating in monthly meetings).

Approximately 30 employees attended either Emergency preparedness training and/or First Aid/CPR (see Section 3.1.2). The EHS manager attended the annual Local Preparedness Conference sponsored by the New Hampshire Department of Homeland Security (June 2012).

The KSC Health and Safety Committee, with matching funds from various Departments purchased eight new automatic external defibrillators (AEDs) in 2012, bringing the total number of AEDs located across Campus to fifteen.
AEDS have been proven to be lifesaving intervention for sudden cardiac arrest and require appropriate placement and access to ensure that this treatment is administered as quickly as possible. The locations of KSC’s AEDs are shown in the figure above.

3.1.7 Biological Safety

KSC’s biological safety procedures are included in the “Chemical and Biological Safety Procedures for the School of Sciences and Social Sciences”, which was approved in 2008, and is in the process of being updated. Most, if not all of the biological research conducted at KSC is performed at the lowest biological safety level (BSL-1) because:

• KSC works primarily with organisms that are well characterized and not known to consistently cause disease in immunocompetent adult humans, and present minimal potential hazard to lab personnel or the environment.

• KSC does not have an animal care facility for living warm-blooded animals. Therefore any on-campus research or classroom use of live, warm blooded animals is prohibited. However, we do conduct research and teaching using cold-blooded vertebrates and invertebrates.

• KSC faculty and staff are not permitted to work with recombinant DNA except for experiments which are exempt from the NIH guidelines.

Dr. Susan Piscopo, an adjunct professor in Biology, has been acting in the part-time CHO position since May 2012. In this capacity, she has performed detailed inspections of the biology laboratories and has reviewed and updated the CEMS database for the Biology Department. During this time, she has identified and taken steps to rectify deficiencies with our CEMS inventory and hazardous waste compliance. She has also been working closely with staff and faculty to help them use CEMS more effectively and efficiently to manage their chemical inventories.

3.1.8 Diving Safety

Not applicable—KSC does not have a diving program as defined by OSHA regulations which pertain to employees whose sole purpose for diving is to perform scientific research tasks.

3.2 Hazardous Materials and Environmental Management

3.2.1 Hazardous Waste Management

KSC produced 2,024 pounds of assessed hazardous waste in 2012. Assessed waste is waste that is classified as hazardous in New Hampshire. Keene State also disposes of wastes that do not fall under the New Hampshire definition but require special handling procedures. In 2012, we disposed of an additional 4,354 pounds of waste that was either not classified as hazardous waste by the State of New Hampshire or was classified as “recycling exempt”.

The accompanying figure shows the amount of waste generated by Keene State from 2002 through 2012. KSC, Plymouth State, and UNH collaborated on the development of a comprehensive regulated waste disposal contract for USNH in 2010, which helped to decrease the overall cost (as shown in the accompanying graph).
### 3.2.2 Hazardous Materials Inventory and Reporting

As discussed in Section 3.1.7, Dr. Susan Piscopo, an adjunct professor in Biology, has been acting in the part-time CHO position since May 2012. In this capacity, she has performed detailed inspections of the biology laboratories and has reviewed and updated the CEMS database for the Biology Department. During this time, she has identified and taken steps to rectify deficiencies with our CEMS inventory and hazardous waste compliance. She has also been working closely with staff and faculty to help them use CEMS more effectively and efficiently to manage their chemical inventories.

This process has identified several key areas that need improvement:

- Hazardous waste improperly labeled and stored in a location not designated as a satellite accumulation area.
- Approximately 30% of the commercial chemical containers were not inventoried in CEMS prior to the inspection.
- Incomplete and/or incorrect records in CEMS, including missing information about the manufacturer, incorrect information about the amount/concentration of the chemical(s), missing acquisition date, missing expiration date, incorrect National Fire Protection Agency ratings (NFPA), and missing material safety data sheets (MSDS).
- Chemicals retained in lab spaces beyond 10 years after acquisition or past their expiration dates. While certain chemicals are safe and effective for an indefinite length of time, there is currently no way to routinely check on the status of these chemicals with the faculty member, and therefore excess materials are being stored in the building.

Dr. Piscopo is now actively maintaining CEMS records for the Biology department. Her next assignment is to conduct similar inspections and inventory updates for the departments of Physics, Chemistry, and Environmental Studies. She is also assisting faculty in training them to use CEMS for better inventory management.
The EHS Manager also added the chemical inventory at the Heat Plant into CEMs, and successfully trained the Heat Plant staff to maintain the inventory in CEMS. The following table shows the CEMS usage for 2012:

<table>
<thead>
<tr>
<th>Current CEMS Statistics (as of 1/11/2013)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Chemical inventory</td>
<td>5178</td>
</tr>
<tr>
<td>Unique chemicals in inventory</td>
<td>2359</td>
</tr>
<tr>
<td>Material Safety Data Sheets (MSDS)</td>
<td>3345</td>
</tr>
<tr>
<td>Users with active chemical inventory</td>
<td>33</td>
</tr>
<tr>
<td>Containers added to CEMS in past year</td>
<td>1841</td>
</tr>
<tr>
<td>Containers removed from CEMS in past year</td>
<td>288</td>
</tr>
<tr>
<td>Containers evaluated in past year (includes new inventory)</td>
<td>2632</td>
</tr>
</tbody>
</table>

The addition of a part-time CHO has been so successful that the Health and Safety Committee has submitted a strategic initiative proposal to create a permanent PAT position for a CHO with part-time teaching responsibilities.

EHS and the Art Department have prepared an Art Safety Plan for the School of Arts and Humanities. The plan is in the draft final stage and is specifically targeted to chemical and mechanical hazards associated with the studio arts (sculpture, painting, printmaking, ceramics, photography, and the theatre set shop).

### 3.2.3 Environmental Compliance

Significant environmental compliance activities in 2012 included:

- Annual underground tank testing required by the NHDES was completed in 2012.
- Annual wastewater inspection by the City of Keene in March 2012.
- The EHS Manager, mechanical supervisor, and heat plant staff successfully completed their Underground Storage Tank Operator recertification in May 2012.
- In October, 2012, KSC notified the NH DES of a small leak in the fuel piping associated with one of the underground storage tanks used to store the No.6 fuel heating oil. These tanks were installed in 1990 and are nearing the end of their usable life. KSC has retained Rist Frost Shumway Engineering (RFS) to prepare a feasibility study to include fuel type and storage options, order-of-magnitude costs, and recommendations for implementation of a recommended option.

### 3.2.4 Air Emissions

Keene State College is required to submit an Annual Emission Based Fee Report and Nitrogen Oxide (NOx) Emissions Statement to the New Hampshire Department of Environmental Services every April. KSC air emissions trends from 2001 through 2011 are shown on the following graphs. In 2003, KSC switched to ‘low sulfur’ fuel oil no. 6 for the Heat Plant, which reduced sulfur content from 1.5% to 0.5%. This had a dramatic effect on reducing air pollution. Since that time, our total air emissions have remained fairly constant at approximately 64 tons per year although the annual fee has continued to increase, especially since 2007.
The annual air emissions report, semi-annual fuel certification reports, and annual Tier II report were all submitted on time to NHDES and EPA.

On February 2, 2012, the EHS Manager attended a community meeting with Senator Molly Kelly and officials from the NH DES to discuss concerns with air quality in the Greater Keene area and potentially throughout Cheshire County. The Keene area is prone to high levels of small particle pollution in the air believed to be primarily the result of smoke from woodstoves, which is compounded during the cold winter months on days in which temperature inversions limit air circulation.

4  Mechanisms to Measure Compliance
Despite a limited staff, KSC makes the most of its resources by collaborating with faculty and students in the natural sciences and safety departments to maintain its present workload and embark on new initiatives. As noted earlier, Dr. Susan Piscopo accepted the part-time position of Chemical Hygiene Officer in May 2012, and has proven to be a tremendous asset to the
School of Sciences and Social Sciences and to the EHS Manager. Student workers are also used to draft training programs, develop safety policies, inspect chemical storage areas and replace fire extinguishers and to monitor and update the CEMS database.

KSC is an active member of the New England Small College Environmental Safety Association (NESCESA). Their mission is to share information on EHS issues specific to small colleges during quarterly meetings and via a listserv. KSC hosted the fall NESCESA meeting in 2012.

In summary, the following mechanisms are used to measure compliance at Keene State College:

• Continually update existing training compliance matrix and training records for KSC employees.
• Outside audits – periodic City of Keene Fire Department Life Safety inspections and quarterly audits of key areas on campus by MEMIC insurance, and annual inspection from the City of Keene Industrial Pretreatment Coordinator.
• Committee oversight – KSC’s Health & Safety Committee and the Chemical and Biological Safety Committee.
• KSC formed the Research Advisory Committee in 2012 to help inform the institution’s direction with regard to research related matters to ensure that research activities and institutional infrastructure to support them are properly aligned. The EHS Manager serves as the Chair of the Prohibited Research Task Force of this committee.
• Internal audits – Student workers are used to inspect hazardous waste storage areas, replace fire extinguishers, and inspect above ground storage tanks, transformers, etc.
• Campus Safety conducts fire drills in Residence Halls on an on-going basis.
• KSC uses CEMS to monitor and track chemical substances on campus.
• Participation in College and University organizations, including the USNH Council on Environmental Health and Safety and NESCESA.
• Attending outside training seminars.

At the request of President Giles-Gee, an ad hoc subcommittee that was initially convened in 2011 to look at the issue of student safety at 24 hour access areas reported their findings back to the Cabinet in July 2012. The subcommittee identified High Risk Areas (e.g., Sculpture Studio, Theatre Set Shop, SPDI lab, Woodworking Shop, Ceramics, and Chemistry Labs) and Moderate Risk Areas (Printmaking, Photography, Painting, etc., and the Architecture Lab). The High Risk areas have a significantly greater risk of injury from either chemical exposure or physical injury. Moderate risk areas also have an elevated chance of injuries (cuts from exacto knives, aerosol paints, etc.).

The Committee’s short-term recommendations included:
1) Campus-wide card access for all exterior doors and for specific “hazardous areas”;  
2) Area/building monitors for “hazardous areas” which allow “after-hours access”;

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The Committee’s short-term recommendations included:
1) Campus-wide card access for all exterior doors and for specific “hazardous areas”;
2) Area/building monitors for “hazardous areas” which allow “after-hours access”;
3) Ensuring that all students are trained on equipment before they are allowed to use it, and maintain written documentation of training. All students would also be required to sign a safety contract before being allowed to use equipment; and

4) Major equipment should be locked out by the faculty so that the equipment cannot be used after hours.

In addition to the short-term (or immediate recommendations), several members of the subcommittee recommended that the College should develop an organizational approach to safety at KSC, which would feature a proactive reliable evaluation and measurement system built on EHS/ANSI Z10 system. The EHS Manager presented the findings at the Academic Affairs Retreat in August 2012, and has been meeting regularly with the Provost to explore ways to enhance the academic safety culture at KSC. In addition, a senior capstone Safety Studies project in the fall of 2012 focused on developing a comprehensive set of safety procedures for the new TDS building. KSC’s Workwise NH will be conducting an in-depth evaluation of our medium and high-risk spaces (e.g., Wood Shop, SPDI lab, Sculpture Studio, Ceramics Studio, Theatre Set Shop, Printmaking, Science Laboratories, etc.) in the spring of 2013.
### 3.3.3.1.1 Injury and Illness Prevention

#### 3.3.3.1.2.1 Industrial Hygiene
- Asbestos Abatement
- Lead Abatement
- Hearing Conservation
- Indoor Air Quality
- Personnel Exposure Monitoring for Toxic Materials
- Respiratory Protection
- Hazard Communication
- Heat Stress
- Illumination

#### 3.3.3.1.2.2 General Safety
- Confined Space
- Fall Protection
- Ergonomic Evaluation
- Lock-Out/Tag-Out
- Laser Safety
- Accident Investigation
- Dig Safe Program
- Bloodborne Pathogens
- Workplace Safety Inspections

#### 3.3.3.1.2.3 Radiation Safety
- Radioactive Material License
- Radiation Safety Committee
- Radioactive Material Inventory
- Radiation Safety Manual
- User/Awareness Training
- Radiation Safety Laboratory Inspections
- Dosimetry

#### 3.3.3.1.2.4 Fire Protection
- Fire and Life Safety Building Inspections
- Fire Evacuation Drills

### LEGEND
- Program in place
- Program under development or under review
- Program not in place
- Not Applicable
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1. EXECUTIVE SUMMARY

Throughout 2012 and despite a sixteen month management vacancy within the department, the Environmental Health & Safety (EH&S) office at Plymouth State University (PSU) has continued to work closely with numerous departments across campus to both ensure and maintain the health and safety of the campus. In November 2011, the EH&S/Emergency Manager left Plymouth State University Physical Plant after nearly seven years of service. Since that time, the department has operated under the guidance of the Director of Physical Plant and with coordinated efforts from the PSU Physical Plant management team and contracted environmental and safety consultants. As part of efforts to secure another full time EH&S Manager and better align the program with evolving campus needs, a recent review and restructuring of the position has been completed. As a result of the aforementioned review and restructuring, the campus has realigned its emergency management/preparedness/response program so that it now includes an Emergency Management position within the University Police Department. Emergency Management will no longer reside directly under the EH&S office. Plans at this time include the EH&S Manager to remain directly within the Physical Plant Department and along with full department support, the office will continue to provide assistance as campus emergency response needs arise. It is with hope that the EH&S position will be filled in the near future. Emergency management needs for 2012 were drastically reduced in comparison to the devastation experienced by the campus in 2011 with Tropical Storm Irene.

A detailed report of the PSU EH&S Department follows:

2. MISSION STATEMENT

Plymouth State University is committed to providing a healthy and safe environment for its students, faculty, staff and visitors.

The Plymouth State University Office of Environmental Health and Safety is responsible for the development and management of the University’s environmental health and safety program. Additional areas of responsibility include public health, fire and life safety, hazardous material management, accident prevention, industrial hygiene, safety training and compliance with environmental and safety regulations and reporting requirements. PSU is committed to comply with all required Federal, State and Local statutes and ordinances and with USNH Policy.
3. CAMPUS PROGRAM ELEMENTS

The Campus Safety Committee continues to meet at least quarterly. A regular meeting schedule typically includes scheduled meetings every other month throughout the academic calendar year. The committee consists of representation from the Physical Education Center, the Art Department, the Science Department, University Police, the Physical Plant, the Student Senate, Human Resources and from the PAT and Operating staffs.

The Traffic Light Summary at the end of this report shows the current status of the safety program elements.

INJURY AND ILLNESS PREVENTION

1. Industrial Hygiene

Asbestos abatements continued as needed during projects. All abatements are conducted following all prescribed safety and environmental regulations. Air monitoring before, during and after abatements did not show any exposures. All monitoring reports are kept on file and are available for review in the EH&S office.

2. General Safety

In 2012, claims for PSU maintained at almost the same level as 2011 with only two additional claims for the 2012 calendar year.

The charts shown on the following pages compare calendar year numbers and include total costs incurred.
Worker Compensation Claim Count

Worker Compensation Costs by Calendar Year
Three slip and falls requiring the employee to have surgery created a cost of over $118,000 for
those three claims which meant the rest of our claim costs were just over $26,500 which was less
than 2011.

The EH&S office and the Human Resources office continue to work together, along with MEMIC,
our worker compensation insurance carrier, to investigate employee accidents and manage claims.
Slip and falls continue to encompass the majority of PSU claims both in lost time and medical costs.
The safety committee continues to encourage all faculty and staff to report hazards so they can be
addressed quickly. As always, the Physical Plant Grounds and Building Service Worker crews
respond quickly to any such reports to address concerns before they cause an accident. Accidents
involving visitors and students continue to be reviewed by the EH&S department, and investigated,
as necessary. Investigations involve the EH&S office, Human Resources, and the affected
employee, student, and their respective managers and/or faculty as needed.

Memic, the University System’s worker compensation carrier, conducted six (6) ergonomic
evaluations this year resulting in changes to improve each person’s work space and ultimately
alleviating some existing medical issues. PSU conducts Ergonomic trainings open to all staff each
year and also provides a webinar for staff to access at their convenience.

3. Radiation Safety

This program is not currently applicable at PSU.

4. Fire Protection

The EH&S office continued to work closely with Residential Life Staff to ensure that fire and life
safety equipment and programs are maintained. Efforts continue pertaining to conducting annual
fire and life safety inspections of all campus buildings and are conducted by the EH&S office and
the Plymouth Fire Department. The EH&S office maintains copies of all of the inspection reports
and certificates of occupancy.

Fire drills are conducted each fall in all Residence Halls and Student Apartments. 2012 drills were
conducted under the supervision of the Plymouth Fire Department.

The EH&S office continued to participate in monthly meetings with the Plymouth Fire Chief and
the State Fire Marshal’s office in 2012. The purpose of the regularly scheduled meetings is to
review campus fire protection and life safety issues pertaining to projects and campus activities.

The EH&S office continues to work alongside management teams from the Physical Plant during
campus project planning and execution. This allows for input in areas such as fire, life safety and
compliance to the Americans with Disabilities Act (ADA). 2012 Projects included, but were not
limited to The Museum of the White Mountains, Boyd Hall Microbiology Lab, the conversion of
the Mary Lyon sub-basement to accommodate offices and a lounge for the Global Engagement Center, Blair Hall phase II heating upgrade and the replacement of the Bagley House fire escapes.

In 2012 the EH&S office continued to work with academic affairs, student activity groups, conference planning and the Plymouth and Holderness Fire Departments to insure that all events on campus, from graduations to concerts to large academic sessions, maintain compliance with all fire and life safety regulations.

In years past, all Plymouth State University (PSU) fire alarms had been connected directly to the Plymouth Fire Department via the hard-wired “city loop”. In August of 2010, PSU was notified by the Plymouth Fire Department that the antiquated city-loop communication system was being abandoned in July 2012. The city-loop communication system needed to be replaced with an alternate system that would communicate directly to Lakes Region Mutual Aid. Working with a fire protection engineering firm, PSU awarded a bid to install radio transmission boxes: 35 buildings with fire alarms, one transmitter per building. Early in 2012, Mammoth Fire Alarms, Inc. installed this system. In the event of any fire alarm activation, these radio boxes will notify Lakes Region Mutual Aid and the Plymouth Fire Department will be dispatched. The system will also self-test every day.

Per NH RSA 153:10, carbon monoxide detection devices are now required in some residential areas. At Plymouth State University (PSU) these residence areas are those that have the propane fired clothes dryers.

A copy of the NH Department of Safety bulletin is noted here: http://www.nh.gov/safety/divisions/firesafety/bulletins/documents/CObulletinaddendum.pdf

PSU worked closely with the NH Fire Marshal’s office to determine acceptable carbon monoxide detection systems and to identify specific locations for the devices. In early 2012, Total Security, Inc. installed carbon monoxide detection systems in all required residence areas. These systems are connected to each building’s fire alarm system (14 systems in all). In the event of any carbon monoxide detection, the alarm will sound within the building and the Plymouth Fire Department will be dispatched.

5. **Occupational Health and Medicine**

Although 2012 did not see any new employee interest in the current Hepatitis B vaccination program, efforts in the forthcoming year to revitalize education and interest among Physical Plant Building Service Worker staff will hopefully yield an increase in program participation.

Residential facilities reported and the EHS office responded to occasional reports of bed bugs in residential facilities during 2012. The EHS office, the Physical Plant and Residential Life continue to work closely in prevention and response efforts to these reports. All reports of bed bug problems are acted upon immediately. All of the cases were addressed before any true infestations could occur. To date there has not been any repeat report of problems.
6. Biological Safety

The Health and Human Performance Department, the Physical Education Center, and the Health Services Center participate in the program. An evaluation of the research done on campus continues to indicate no involvement with or exposures to select agents.

7. Diving Safety

Due to limited diving operations at PSU, a Safety Control Board has not been convened. The Health & Human Performance Department continues to offer 2 SCUBA classes annually. Both are taught by an adjunct instructor that owns a local dive shop. Classes follow protocol set by the SSI (SCUBA Schools International) a worldwide diver certification agency. There is also a contract in place with the same dive shop to provide rental equipment for the students. As with all contracts, a current certificate of insurance is required.

Plymouth State University students are also offered the opportunity to participate in off campus archeological classes that involve diving. This particular program requires participating students to have prior diver certification. The program also requires medical examinations and swim tests before students are allowed to participate in the underwater activities.

8. Information Security

The EH&S office contracts with Shred-It a document destruction firm specializing in on-site confidential document destruction services for the campus. Shred-It is NAID (National Association for Information Destruction) certified for mobile document destruction and adheres to stringent security practices and procedures for document destruction. In 2012, the EH&S office assisted in coordinating the shredding of twenty two (22) tons of paper on the PSU campus. The program continues to grow interest among campus departments and plays a paramount role in ensuring safety and security relative to the destruction of campus confidential documents.

HAZARDOUS MATERIALS/ENVIRONMENTAL MANAGEMENT

The EH&S office continues to oversee the proper handling and disposal of hazardous waste and the compliance to all state and federal environmental regulations.

1. Hazardous Waste Management

The EH&S office oversees all hazardous waste activity on campus, including removal, and ensures the timely inspection of all waste accumulation and storage areas.
The micro scale techniques in use in the Boyd Science building continue so waste streams for most programs there remain very small. However, as research grants increase we expect an increase in hazardous waste streams. The EH&S office continued to work closely with the Science Departments to ensure that all waste streams are handled properly. Art faculty in the Draper & Maynard art classrooms continue to reduce their waste streams through the use of less hazardous products and by eliminating the donations of hazardous materials into the program. Currently both the Plymouth and Holderness campuses are small quantity-extended generators (SQG) of hazardous waste. Each site has its own separate EPA site number.

2. **Hazardous Materials Inventory and Reporting**

In 2011, the EH&S Manager maintained certification as a New Hampshire Hazardous Waste Coordinator. In 2012, due to the EH&S management vacancy, Physical Plant contracted with Triumvirate Environmental, an environmental consulting & services firm that specializes in hazardous waste management for biotechnology, education, life sciences and other markets. Triumvirate Environmental provided guidance in assessing potential hazards and provided assistance with regulatory compliance and reporting for the campus.

2012 witnessed a major change with the CEMS computerized chemical inventory system. PSU contracted with UNH (developer of the CEMS system) to host and maintain the software and data. With this service agreement in place, PSU will benefit by having the software maintained by updates/patches, by having Material Safety Data sheet information both current as well as archived and PSU will gain improved compliance reporting. The EH&S department relies on the department liaisons (Art and Science Department) to continue to work diligently to maintain their portion of the inventory.

The EH&S office will continue to monitor the volume and use of numerous chemicals on the US. Department of Homeland Security’s (US DHS) “Chemicals of Interest” list. If on-hand amounts ever exceed pre-set limits, PSU is required to notify US DHS within a specific time frame.

In 2011, the EH&S office worked with the Physical Plant to finalize a campus-wide inventory of refrigerants on the campus. The inventory will be used to develop an up-to-date refrigerant management program in conjunction with the campus wide contingency and SPCC plan. An updated SPCC plan along with the development of the campus wide contingency program remains on hold due to the departure of the EH&S Manager. It is expected that the new manager will be able to work with the consultants to quickly finish this program.

4. **MECHANISMS FOR COMPLIANCE**

PSU utilizes several mechanisms to ensure that we meet all state and federal requirements, including the requirements mentioned in this report. Methods include, but are not limited to
publications and membership in professional organizations like the American Society of Safety Engineers (ASSE). Formal training and internal procedures are also utilized to ensure compliance.

**Injury and Illness Prevention**

Procedures are developed as new equipment and processes are put in service. Trainings are conducted in groups and individually to introduce new or update current requirements.

Internal procedures for processes such as hot work and confined space require a reporting procedure that involves regular communication with the Plymouth Fire Department and forms that are reviewed and/or completed by the EH&S office.

Regular inspections by local fire departments and the State Fire Marshal’s office combined with regular communication with state and federal agencies over various matters also keep the EH&S office up to date on any new or upcoming requirements.

The EH&S office also served to coordinate the campus facility ADA needs. During fall 2011, an updated ADA evaluation of several campus areas was undertaken with assistance from an engineering consulting firm specializing in ADA issues. The Physical Plant will continue to address the concerns noted in the report during projects scheduled over the next few years.

**Hazardous Materials/Environmental Management**

Weekly inspections of accumulation areas are conducted by faculty and staff. The EH&S office reviews and signs all of the reports. Any discrepancies are addressed and follow-up is conducted if necessary. The reports are kept on file in the EH&S office.

Hazardous Waste manifests are signed and kept by the environmental consultant from Triumvirate Environmental. Regular follow-up reviews are conducted to ensure that all wastes are handled properly in a timely manner, per federal regulation. The environmental consultant is onsite one day per month to manage these duties.
### Program Elements

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**LEGEND**
- Program in place
- Program undergoing review, improvement or under development
- Program not in place
- Not Applicable
## Program Elements

<table>
<thead>
<tr>
<th>Program Element</th>
<th>2011</th>
<th>2012</th>
</tr>
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<tbody>
<tr>
<td><strong>3.3.3.1.2.5 Occupational Health and Medicine</strong></td>
<td></td>
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<tr>
<td>• Respirator Medical Questionnaire</td>
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<td>• Hepatitis B Vaccination</td>
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<td>• Animal Handlers Occupational Health</td>
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<tr>
<td><strong>3.3.3.1.2.6 Disaster Preparedness</strong></td>
<td></td>
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<tr>
<td>• Campus Emergency Operations Plan</td>
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<tr>
<td>• Emergency/Fire Evacuation Plan</td>
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<tr>
<td>• Aboveground Storage Tank Program</td>
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<tr>
<td>• Underground Storage Tank Program</td>
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<tr>
<td>• Integrated Contingency/Spill Prevention Control &amp; Countermeasure Plan</td>
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<td><strong>3.3.3.1.2.7 Biological Safety</strong></td>
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</tr>
<tr>
<td>• Institutional Biosafety Committee</td>
<td>☢</td>
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<tr>
<td>• Biosafety Manual</td>
<td>☢</td>
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<tr>
<td>• Recombinant DNA Registration</td>
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<tr>
<td>• Biosafety Laboratory Surveys</td>
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<tr>
<td>• Inventory of Infectious Material</td>
<td>☢</td>
<td>☢</td>
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<tr>
<td>• FDA Food Biosecurity Application</td>
<td>☢</td>
<td>☢</td>
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<td><strong>3.3.3.1.2.8 Diving Safety</strong></td>
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<tr>
<td>• Diving Safety Control Board</td>
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<tr>
<td>• Diving Safety Officer</td>
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<td>☢</td>
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<tr>
<td>• Diving Safety Manual</td>
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<td>☢</td>
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<tr>
<td><strong>3.3.3.2 Hazardous Materials &amp; Environmental Management</strong></td>
<td></td>
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<tr>
<td><strong>3.3.3.2.2.1 Hazardous Waste Management</strong></td>
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<td>• Hazardous Waste Management Program</td>
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<td>☢</td>
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<tr>
<td>• EPA Identification Number</td>
<td>☢</td>
<td>☢</td>
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<tr>
<td>• Faculty/Staff/Student Training</td>
<td>☢</td>
<td>☢</td>
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<tr>
<td>• Contingency Plans for Central Accumulation Area</td>
<td>☢</td>
<td>☢</td>
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<tr>
<td>• Satellite Accumulation Area Inspections</td>
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<tr>
<td><strong>3.3.3.2.2.2 Hazardous Materials Inventory and Reporting</strong></td>
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<tr>
<td>• Chemical Environmental Mgmt. System/Inventory System</td>
<td>☢</td>
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<tr>
<td>• DEA Controlled Substances Inventory</td>
<td>☢</td>
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</tr>
<tr>
<td>• DHS Chemicals of Interest Inventory</td>
<td>☢</td>
<td>☢</td>
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<tr>
<td>• Community Right To Know/SARA Title III</td>
<td>☢</td>
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<tr>
<td>• Material Safety Data Sheets</td>
<td>☢</td>
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<tr>
<td>• Chemical Safety/Hygiene Plan</td>
<td>☢</td>
<td>☢</td>
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<tr>
<td>• Chemical Laboratory Inspections</td>
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<td>☢</td>
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<tr>
<td>• Chemical Safety Committee</td>
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<tr>
<td>• Title 5 Air Permit</td>
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<tr>
<td>• Storm Water Management Plan</td>
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<tr>
<td>• Refrigerant Management Plan</td>
<td>☢</td>
<td>☢</td>
</tr>
<tr>
<td>• Water Quality Permits</td>
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2012 Annual Report
for the
Office of Environmental Health & Safety

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I. Major Accomplishments

1. Parsons Hall Legacy Chemical Removal and Radiological Decommissioning Project

   In 2009 an extensive renovation of Parsons Hall, which primarily houses the UNH Chemistry Department and a few related programs, commenced after the May graduation ceremonies. The north, west, south and southwest wings that house instructional and research laboratories were planned for full interior demolition and renovation. The inventory of hazardous materials in these laboratories numbered approximately 20,100 containers. Many of these containers would be consigned for disposal as faculty and staff began the process of decommissioning their laboratory space.

   Planning for the scope and cost of this major chemical reduction initiative began in 2008, approximately one year before the initiation of construction activities. The offices of the Senior Vice Provost for Research, the Vice President of Finance and Administration and the Dean of the College of Engineering and Physical Sciences agreed to equally share the cost to dispose of these legacy chemicals. OEHS staff members Brad Manning, Marty McCrone, Jeff Anderson and Ken Brown oversaw the planning and implementation of the legacy chemical removal project. 16,685 chemical containers were removed from the Parsons Hall hazardous material inventory. Here are the statistics by year:

<table>
<thead>
<tr>
<th>Year</th>
<th># of Containers Removed</th>
<th>Waste Volume (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>4,229</td>
<td>10,062</td>
</tr>
<tr>
<td>2009</td>
<td>2,405</td>
<td>9,346</td>
</tr>
<tr>
<td>2010</td>
<td>2,663</td>
<td>8,025</td>
</tr>
<tr>
<td>2011</td>
<td>3,328</td>
<td>7,528</td>
</tr>
<tr>
<td>2012</td>
<td>4,060</td>
<td>7,545</td>
</tr>
</tbody>
</table>

Parsons prior to the clean-out

   There are currently 9,932 active hazardous material containers in Parsons Hall according to the UNH Chemical Environmental Management System (UNHCEMS®), down from 20,109 containers in 2008. This equates to a 50.6% reduction in the Parsons Hall chemical inventory since 2008.
This project was successful thanks to the collaboration of many departments working together to reduce the chemical inventory in Parsons Hall. The removal of legacy chemicals from laboratories has benefits such as decreasing potential exposure to hazardous substances, protection of the environment, and the overall reduction in the cost of disposal, which frequently can exceed the original cost by 4 to 20 times.

Parsons Hall was decommissioned for radiological contamination in 2009 prior to remodeling the building. Radiation Safety and Control Services (RSCS) was contracted to take sensitive surveys to look for possible contamination from historical use in the building. Surveys were conducted for alpha, beta, and gamma radiation with instruments and wipe tests. The process began with a historical survey to identify which isotopes were used in the building and their locations. Laboratories and office spaces were identified as needing decommissioning surveys. Floors, walls, bench tops, cabinets, hoods, and sinks were surveyed. Preliminary and final surveys revealed only minor contamination, primarily from natural uranium and thorium sources. Contaminated items were removed and disposed as radioactive waste. Many geological specimens were located that contained natural uranium or thorium and these were disposed as radioactive waste as well. The State of New Hampshire Radiological Health Services Division supervised the decommissioning project and reviewed all survey data. All surveys were approved by the State and upon completion of the decommissioning project, approval was given to commence construction.

2. Campus-wide Biohazardous Waste Program. A written biohazardous waste program was implemented to streamline the biohazardous waste processes for the Durham and Manchester campuses and the Jackson Estuarine Laboratory. The plan outlines handling procedures for solid and liquid biohazardous waste, as well as sharps waste. Autoclave validation procedures, testing procedures and record-keeping are outlined in the plan. Two Durham campus buildings positively impacted by the biohazardous waste plan are Rudman Hall and Kendall Hall. The plan has been well received by occupants of these buildings and procedures have been praised for being straightforward and easy to follow.

3. Campus-wide Noise Assessment. There are many unique areas at UNH that can create a host of potential hazards for those employees that conduct tasks within them. One of the potential risks is exposure to noise. During 2012 OEHS coordinated the assessment of all campus buildings for locations where elevated noise may be present. This included mechanical rooms, maintenance areas, or any other area identified by UNH. The assessment included coordinating with an outside consultant and walking through all campus buildings that were identified to have areas that could yield elevated noise levels. The three day project resulted in the identification of eighteen locations where noise levels were observed to exceed the Occupational Safety and Health Administration Action Level of 85 decibels as measured on the A-scale (dBA). While the noise levels did not exceed the Permissible Exposure Limit of 90 dBA, employees that access identified locations were trained on the proper use of hearing protection, and informed of the locations where elevated noise levels are present.

4. Revised Fall Protection Plan. During 2012 OEHS reviewed its Fall Protection Plan and following its review initiated efforts to make it easier for impacted operating groups to be informed of their requirements when working on elevated surfaces. The Occupational Health and Safety Administration require employees that are exposed to a fall of four feet or greater to be protected against such falls. Protection must be in the form of safety nets, guard rails, and/or personal fall arrest systems. Working at UNH potentially exposes employees to falls of four feet or greater at many locations to include, but not limited to, roof tops, elevated work platforms, lifts, unprotected attic spaces, open pits, floor holes, and excavations. The program was amended to reflect specific fall hazards and to
outline specific requirements necessary to work in these areas safely. The program was drafted and submitted to the Occupational Safety Committee for review. Following their review and comments, it was then forwarded to each operating group impacted by the new requirements. Based on their review and subsequent comments the plan was finalized and implemented in the fall. The implementation included providing training on the revised plan to those impacted operating groups. As part of the plan, OEHS with the assistance of Facilities Operations initiated assessing campus roofs for fall hazards and developing preliminary fall protection control designs. Buildings included the Field House, Whittemore/Hamel Recreation Center, Chase Ocean Engineering, Kingsbury Hall, Kendall Hall, Morse Hall, James Hall, Murkland Hall, and Conant Hall. As part of the review process OEHS has further partnered with Facilities Contract Management and together initiated design development for bid solicitation for the installation of applicable fall control measures. This is a large undertaking that will continue well into 2013 and beyond, however the benefits of allowing access to elevated surfaces with appropriate protective controls will provide UNH employees with a safe working environment against fall hazards.

5. Live Fire Extinguisher Training. On June 29 and November 1, the Office of Environmental Health and Safety sponsored live fire extinguisher training for the UNH Community. In total, 246 participants received training on the proper use of portable fire extinguishers that included attempting to put out a fire with one. While providing training may not be seen as a large accomplishment as this is something EH&S conducts on a regular basis, it was put to use by a UNH community member. Below is the message received by OEHS:

“I wanted to let you know that I attended the fire extinguisher training at UNH on June 29. I went because I’d always wanted to know what it was like to use one, without having to use one. It sounded like fun. The training was well done and I appreciated the opportunity. You made it very easy to attend.

Then last Friday, the wall socket behind my dryer burst into flames and I had to put out a fire. Everything worked exactly as it should have, and by the time the fire department arrived, they only needed to bring in fans to pull all of the smoke out of the house. Having had an opportunity to be trained meant I didn’t have to try to read instructions or worry I was going to do it wrong. Under no circumstances could I have read those instructions standing next to a wall of flames. Not a chance. If I hadn’t known where the extinguisher was, or if I hadn’t made sure it was up to date, I also would have been out of luck. I would have just grabbed the phone and dog and run.

So thanks. I appreciate that UNH offered this service and wanted you to know that at least one family of four and happy dog are still at home because of it.”

While no one wants to hear of anyone who experiences a loss as the result of a fire, we are thrilled that the training assisted in preventing one for one of our UNH community members.

6. EH&S Mitigation Fund. The EH&S Mitigation Fund was used for 58 different projects in 2012. This represents a 190% increase over 2011. These projects include the following:

- Lead Paint Testing and Monitoring-Field House
- Mold /Spore Sampling: McConnell, Spaulding, Smith Halls
- PCB Air Sampling: Stillings, Field House
- Asbestos Containing Material Monitoring –Nesmith Hall
- Refrigerant Management Program Update-Campus
- UNH-EPA Section 114 Clean Air Act Response-Campus
- Review & Update ENV-A 1400 Air Toxics Compliance Demonstration-Campus
- Mold Remediation: Spaulding Hall
7. Hazardous Building Materials. In 2011 OEHS initiated a program to identify and manage hazardous building materials, more specifically asbestos and lead based paint associated with campus buildings. During 2012 OEHS coordinated the assessment of eight campus buildings. They include Spaulding Hall, Nesmith Hall, Memorial Union Building, Randall Hall, Hitchcock Hall, Devine Hall, Alexander Hall, and McLaughlin Hall. The overall goal of the project continues to be to create a comprehensive inventory and centralized database of those hazardous building materials and provide the information to those operating groups that could potentially be impacted. Since the mid 1980’s UNH has performed hundreds of survey efforts and subsequent abatement projects, which have been coordinated by multiple operating groups, leaving gaps in data that could potentially increase the risks associated with potential exposures. During 2012 OEHS submitted to the Enterprise Facilities Asset Management Steering Group a request to incorporate the survey data into the FAMIS electronic management system. This will allow those operating groups, such as Facilities Operations, Facilities Contract Management, and Facilities Construction Team to have access to the inventory data and allow them to plan work accordingly. OEHS with the assistance of Facilities Information Technology have developed an electronic reporting format which will provide a brief warning statement on those work orders developed for areas where asbestos and/or lead based paint is present. In addition it will allow management personnel access to the completed survey reports and asbestos inventory spreadsheets for each building. OEHS is anticipating completing this task in early 2012 and will continue to populate FAMIS with hazardous building material data as buildings are surveyed and data comes available.

8. Parsons Hall Pass-Through Fume Hood Performance Issues Resolution. Pass-through Fume Hoods in Parsons were plagued by performance problems for over a year. This equipment is unique to the UNH campus and exhibited many unique performance problems. Notably, in some conditions, air escaped from the hood cabinet into occupied space, which could result in significant chemical exposure issues. OEHS worked with the Parsons Construction Team, including UNH FD&C, Gilbane, Basix Controls, and SMRT to identify and correct the problems with the pass-through fume hoods.

9. Injury Prevention. The effectiveness of a safety program can be assessed many ways, however it is typically looked at from a financial perspective. Here at UNH losses are reviewed by OEHS to evaluate their frequency (number of incidents) and the severity (cost associated with an injury). OEHS, in conjunction with Human Resources and our Workers Compensation Insurance Carrier Maine Employee Mutual Insurance Company (MEMIC), monitor monthly trends and costs and work to focus efforts on addressing those areas where a higher frequency of accidents and/or severity are occurring. During 2012 UNH experienced 308 incidents that resulted in approximately $454,820 in financial losses. While this is up from 2011 where 287 incidents resulted in approximately $356,337 in losses, they continue to remain lower than in previous years. The following table summarizes UNH losses for the past 11 years.

<table>
<thead>
<tr>
<th>Year</th>
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<th>Losses*</th>
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<tr>
<td>2002</td>
<td>362</td>
<td>$772,085</td>
</tr>
<tr>
<td>2003</td>
<td>394</td>
<td>$988,401</td>
</tr>
<tr>
<td>2004</td>
<td>376</td>
<td>$425,339</td>
</tr>
<tr>
<td>2005</td>
<td>322</td>
<td>$1,091,944</td>
</tr>
<tr>
<td>2006</td>
<td>324</td>
<td>$642,226</td>
</tr>
<tr>
<td>2007</td>
<td>377</td>
<td>$1,353,571</td>
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<tr>
<td>2008</td>
<td>389</td>
<td>$645,053</td>
</tr>
<tr>
<td>2009</td>
<td>365</td>
<td>$657,613</td>
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<td>2010</td>
<td>365</td>
<td>$883,743</td>
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<tr>
<td>2011</td>
<td>291</td>
<td>$393,421</td>
</tr>
<tr>
<td>2012</td>
<td>308</td>
<td>$454,820</td>
</tr>
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</table>

*Losses are reported based on end of calendar year. Costs will fluctuate up and down based on continuing/additional treatments, indemnity costs, and/or injuries reported in 2013 that occurred in 2012.
In addition to the cost savings directly paid out as a result of injury claims, the reduction in incidents and losses is also reflected in our Workers Compensation annual premium. Losses are assessed each year by the National Council on Compensation Insurance (NCCI) to which they establish and set our Experience Modification (MOD) rate. The MOD rate is a multiplier which is used to calculate our annual Workers Compensation Insurance premium. A MOD rate of less than 1.0 is preferable. UNH’s current MOD rate as of this report is 0.78. Ways to reduce the MOD rate include reducing the frequency (amount) of injuries and claims and reducing the severity (costs). During 2012 OEHS placed emphasis on investigating and following up on more incidents than in previous years. OEHS conducted investigations/follow up assessments on thirty-five (35) reported incidents. Some required a formal investigation while some involved a more informal review with applicable personnel via telephone and/or e-mail correspondence. OEHS anticipated continuing this trend in 2013 in an effort to further reduce losses at UNH.

10. Flammable Liquid Storage Refrigerators. OEHS addressed a long-standing issue of limited access in Parsons Hall to flammable liquid storage refrigerators and freezers. OEHS collaborated with researchers to identify their storage needs and purchase new refrigerators and freezers required for storage of flammable materials. This action was planned to coincide with laboratory relocation efforts associated with the Parsons Hall renovation project.

11. UNH CEMS Flammable Liquid Inventory Report. OEHS responded to concerns from the State Fire Marshal regarding storage volume of flammable liquids in newly renovated laboratories in Parsons Hall. OEHS provided a summary of information about UNH CEMS and management of flammable liquids in laboratories to the State Fire Marshal. OEHS worked with UNH Research Computing, Parsons Construction Team, Durham Fire Department, and UNH Facilities Design and Construction to create a custom report in UNH CEMS to address the Fire Marshal’s concerns. The custom report in UNH CEMS generates a warning when flammable storage capacity in a lab unit approaches or exceeds regulatory storage limits. The report generates automatic emails that provide advance warning to researchers that they are approaching their storage limit. When storage limits are exceeded, researchers, OEHS, and Durham Fire are automatically notified.
II. Mission Statement

The UNH Office of Environmental Health and Safety (OEHS) works to assure safe and healthful environments for all segments of the campus population, through programs of information and education, review and monitoring, technical consultation, and provision of direct services. OEHS is also responsible for developing programs to ensure compliance with applicable state and federal health, safety and environmental regulations, and campus policies on environmental health and safety. Areas of responsibility include hazardous materials, environmental management as well as injury and illness prevention as highlighted in the USNH Policy on Environmental Health and Safety. The protection of human health and compliance with applicable regulations are essential conditions for the successful operation of research, conduct of instruction, and provision of public service by the University. OEHS supports the University of New Hampshire’s mission by providing leadership, resources, and services to assure a safe and healthful working environment for all members of the University and its surrounding community.

The OEHS Mission Statement was re-affirmed in 2010 after review and approval by the campus Biological, Chemical, Occupational, and Radiological Safety Committees and the concurrence of the University Environmental Health and Safety Committee. The Statement is distributed through the UNH Research Office website at http://www.unh.edu/research/support-units/environmental-health-safety.

III. Vision Statement

OEHS will be a valued partner in the creation and maintenance of a safe and healthy University environment and will achieve excellence through its provision of leadership, oversight, stewardship and services.
IV. Core Values

OEHS has adopted a Code of Professional Conduct. These core values describe the standards of excellence to which we as a staff aspire. They guide our actions and help to assure accountability, responsibility and trust as we interact with one another and our campus clients.

★ **Excellence:** We dedicate ourselves to the highest standards of quality in our professional work, outreach, public service, mentoring, and advising.

★ **Integrity:** We commit ourselves to an open, honest, and trustworthy approach to all endeavors we are working on. We value fairness, straightforward conduct, adherence to the facts, sincerity and transparency. We will make a reasonable effort to provide appropriate professional referrals when unable to provide competent professional assistance.

★ **Responsiveness:** We respond to and address the needs and expectations of our students, faculty, staff, partners, and external constituents.

★ **Respect:** We foster an environment of mutual respect. We listen to each other, encourage each other and care about each other.

★ **Diversity:** We commit to an inclusive community for diverse students, faculty and staff. We reject bigotry, oppression, degradation and harassment, and we challenge injustice toward any member of our community.

★ **Accountability:** We are personally and organizationally accountable for all that we do and commit to providing timely and comprehensive evaluation of our programs and efforts.

★ **Innovation:** We want to be at the forefront of change and believe that the best way to lead is to learn from our successes and mistakes and continue to grow. We are forward-looking and break new ground in addressing important community and societal needs.

★ **Openness:** We encourage the open exchange of information and ideas from all quarters of the university community. We believe that through collaboration and participation, each of us has an important role in determining the direction and well-being of our community.
V. Campus Program Elements and Objectives

UNH has adopted an Environmental Health and Safety Mission Statement that works to assure safe and healthful environments for all segments of the campus population, through programs of information and education, review and monitoring, technical consultation, and provision of direct services. OEHS has developed and implemented programs to ensure compliance with applicable state and federal health, safety and environmental regulations, and USNH policies on environmental health and safety.

A. Injury and Illness Prevention

1. Industrial Hygiene

Industrial hygiene is the art and science of the recognition, evaluation, and control of those environmental factors or stresses, arising in or from the work place, which may cause sickness, impaired health and well-being, or significant discomfort and inefficiency among workers or among the citizens of the community. OEHS performs worksite assessments to determine potential health hazards throughout the many locations associated with UNH. OEHS provides technical assistance and advice on issues of chemical hazards that can contribute to exposure risks to include laboratory exposures, exposures as the result of chemical release incidents, noise, heat, and hazardous building materials. UNH community members can request assistance from OEHS's staff Certified Safety Professional. To assist with our evaluations of potential exposures, OEHS calibrates and maintains an inventory of eighteen (18) direct reading/sampling instruments, up from seventeen (17) last year. The new addition includes an Allegro High Volume air sampling pump. The high volume sampling pump system increases the capabilities of the office to allow for a more cost effective way to evaluate indoor air contaminants. Contaminants that can be sampled include lead, asbestos, mold, dust, and chemical contaminants where higher sample volumes are necessary. By collecting air samples in house it eliminates the costs of labor associated with retaining one of UNH's industrial hygiene consultants. Indoor Air Quality sampling can now be done with the only costs being the actual analytical fees incurred for air sample analysis.

OEHS responded to eighteen (18) requests from the campus community for industrial hygiene technical services. Inquiries were related to hazardous building materials, potential exposures to hazardous chemicals, noise, and heat.

OEHS continues to provide day to day technical support during the summer months for the UNH Excessive Heat Advisory program (see OLPM, UNH VD3.3). OEHS utilizes a wet-bulb globe thermometer to measure the outdoor heat during the summer months. When the outdoor heat exceeds the established consensus threshold for heat, OEHS notifies the campus community by e-mail or the Directed Communication system. The warnings contain a prescription for work and rest for those employees, athletes, visitors, and/or guests that may be working outside, and if necessary those working inside. In 2012 OEHS issued a total of nine (9) heat advisories. All were issued by e-mail to those impacted operating groups.

OEHS provided industrial hygiene services to laboratory occupants with the goal of eliminating or reducing exposure to hazardous materials. Projects included:
• Measured airborne concentrations of flammable and toxic solvent used in Kendall basement with handheld analytical instrument. OEHS discussed measurement results and provided guidance on safe use of the solvent. Readings showed air concentration to be well below exposure limits.

• Evaluation of hexane vapor associated with benchtop instrument in Gregg Hall with handheld instrument. Provided guidance regarding improvement of vapor capture with room occupants.

• Consulted with Gregg Hall researchers regarding safe use of isocyanate urethane product. Advised about proper engineering controls, administrative controls, and appropriate personal protective equipment.

• Performed formaldehyde vapor personal air exposure sampling in Kendall with research staff. Advised staff about minimizing vapor release with proper fluid transfer techniques. Provided updated fluid transfer equipment to researchers.

2. Indoor Environmental Quality

OEHS investigates indoor environmental quality (IEQ) complaints by campus community members. These complaints typically involve thermal comfort, non-specific symptoms, reports of microbiological contamination/growth, specific health related symptoms related to indoor air, or odors of an unknown origin. OEHS conducts indoor air quality (IAQ) surveys and due diligence assessments following reports or complaints commonly associated with compromised air quality following routinely practiced industry standards for the investigation into IAQ complaints. To assist in the evaluation, OEHS maintains two (2) direct reading instruments used to monitor basic IAQ parameters, two moisture survey meters used to evaluate for damp conditions that can be conducive for microbiological growth, and a boroscope that can be used to view inaccessible areas such as HVAC ducts and wall cavities.

In 2012 OEHS responded to thirty four (34) requests for IEQ services. This is down from forty-two (42) in 2011. OEHS requested assistance from IAQ consultants on eight (8) occasions with three (3) investigations requiring remediation or corrective actions by qualified personnel. Consulting services and remedial efforts were funded primarily by the affected departments, however, OEHS was able to support several sampling efforts and remedial projects through the EH&S Mitigation Fund that was established in 2009.

3. General Safety

The safety programs at UNH focus their efforts on injury prevention through the development and implementation of policies and procedures for the recognition and identification of hazards and the development of corrective actions. The UNH Occupational Safety Committee assists with setting forth health and safety policies and programs which are then adapted and implemented within the affected departments. The Occupational Safety Committee is a joint labor-management committee, and is a vehicle through which the campus community can discuss safety concerns, disseminate information about programs and services from OEHS, and develop initiatives for future health and safety efforts. In 2012 one (1) new member was appointed to the Occupational Safety Committee representing the Water Treatment Facility. The Occupational Safety Com-
committee incorporates representation from Facilities Operations, Research Integrity Services, Facilities Constructor Team, Housing, Campus Recreation, Memorial Union Building, Athletics, Information Technology, Hospitality Services, Health Services, Energy and Utilities, Housekeeping, Contracts Management, and University Libraries. OEHS coordinates and schedules the quarterly meetings, develops meeting agendas, and records and generates meeting minutes. OEHS is responsible for submitting the biannual report to the New Hampshire Department of Labor on the state of the occupational safety program at the University. The latest biannual report was submitted in December 2012.

4. Safety Training and Education

The Occupational Health and Safety Coordinator routinely performs and/or coordinates safety training for those affected faculty, staff, and students on a variety of topics that include Hazard Communication, Personal Protective Equipment, Respiratory Protection, Hearing Conservation, Control of Hazardous Energy (Lockout/Tagout), Confined Space Entry, Fall Protection, Asbestos Awareness, Material Handling, and Ergonomics. The responsibility for ensuring that affected staff receives the appropriate training falls under each individual department. OEHS offers training services that are pre-arranged with the affected departments. In addition to live training, many health and safety program training courses are offered through Blackboard.

During 2012 OEHS continued its efforts to increase training to target areas where increased losses were occurring and to ensure compliance with regulatory training requirements. In 2012 OEHS continued its partnership with Dining Services and Housekeeping, and added the MUB/GSS staff, to address areas of increased losses. This included redeveloping multiple training programs to address hazards and their controls to minimize exposure risks. These areas included training on cuts and burns; slip, trip, and falls; ergonomics and back/lifting safety; fire safety and prevention; and hazard communication/right to know. For Housekeeping emphasis was placed on ergonomics and back safety in addition to the regulatory requirements for Asbestos Awareness and Bloodborne Pathogens. Emphasis for the MUB/GSS staff was placed on back/lifting safety. OEHS partnered with both Facilities Operations and the Facilities Construction Team to target losses and regulatory requirements in the same manner as Dining and Housekeeping. To minimize disruption to campus services provided by both Facilities Operations and FCT, OEHS discussed with each group areas of need, risk, and increased frequency and developed and presented department specific training which covered a variety of topics. Sessions were provided during a single day during an established time frame. By conducting blocks of training with each group it is easier to track their annual requirements and schedule future required training programs. In total OEHS conducted thirty (30) classroom based programs, which is up from the eighteen (18) that were conducted in 2012. Training was provided for 703 faculty, staff, and students, up from 508 in 2011. 2012 also saw OEHS partnering with UNH’s facilities services contractor, GCA Services Group (GCA). OEHS in partnership with GCA provided training on the revised Fall Protection Plan and Control of Hazardous Energy (Lockout/Tagout) for Facilities Operations. In addition to classroom based training, OEHS continues to utilize the Blackboard platform to deliver an e-learning alternative in several occupational safety topics. The e-learning alternative is available to those departments who prefer computer-based training delivery. This allows departments to maintain compliance with existing safety training policies and provides flexibility in scheduling.

OEHS continued its partnership with Human Resources on Accident Prevention and Safety by participating in the Safety Orientation as part of UNH Getting Started and as part of the Foundations of Supervision.
OEHS has continued to partner with the Animal Resource Office to provide an Occupational Health and Safety component as part of the mandatory Animal Handler Training conducted prior to the start of each academic semester. OEHS participated in four sessions during 2012.

In an effort to further promote a safe and healthful working environment for the UNH community, OEHS participated in Public Health Week which included providing information on OEHS services at the Public Health Fair in the MUB.

5. Ergonomics Programs

OEHS continues to provide guidance to the campus community on ergonomic related risks by continuing to promote its pro-active approach to ergonomics with Human Resources to reduce the number of claims involving musculoskeletal disorders associated with poor workstation design. In 2012 OEHS conducted 80 workstation evaluations. This is an increase when compared to 2011 where 67 assessments were conducted. Each evaluation consists of visually reviewing the employees workstation, discussing with them any symptoms they may be experiencing, making adjustments and modifications to the workstation, and discussing with them proper body positioning. Each assessment is followed up by a formal report that not only summarizes our observations and modifications, but includes additional recommendations to further reduce ergonomic risk factors. New employees are informed of the ergonomics program during their orientation and are encouraged to take advantage of the assessment services provided by OEHS. The following tables summarize the ergonomic losses dating back to 2007.

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claims</td>
<td>15</td>
<td>17</td>
<td>22</td>
<td>15</td>
<td>8</td>
<td>10</td>
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<tr>
<td>Incurred Costs¹</td>
<td>$33,422</td>
<td>$114,109</td>
<td>$114,097</td>
<td>$89,341</td>
<td>$35,817</td>
<td>$27,555</td>
</tr>
</tbody>
</table>

1. Values provided by Human Resources based on loss runs as provided by MEMIC. Claims and values may vary slightly based on cause description as documented by MEMIC. Costs will fluctuate and down based on continuing/additional treatment, indemnity costs, and/or injuries reported in 2013 that occurred in 2012.

2. Prior to 2009 ergonomic assessments were performed on a reactionary basis following the report of an occupational injury.

OEHS will continue its proactive ergonomic efforts during 2013 in an effort to reduce costs associated with musculoskeletal injuries.

UNH continues to utilize the New Hampshire Department of Labor Job Modification Program to assist in the purchase of equipment and/or software to allow workers with ergonomic issues to return to work. In 2012 UNH submitted and was approved one job modification request resulting in a reimbursement to UNH of $220.00.

OEHS continued its partnership with the Department of Occupational Therapy, the Office of Human Resources, and several campus departments with ongoing student projects as part of the Ergonomics course. OEHS participated in the course by presenting material on ergonomics as it relates to the UNH campus. During 2012 students conducted evaluations for selected employees on campus. OEHS participated in the
classroom presentations on their assessments to ensure they were conducted in line with the current assessment process. In addition, students developed new Ergonomics Fact Sheets, Power point training materials, and ergonomic videos for use by OEHS. Emphasis was not only placed on computer workstations, but on back and lifting safety.

6. Safety Technical Services

OEHS staff provides technical safety services to teaching and research laboratories at UNH and UNH-Manchester. These services include requests for information, incident investigation, laboratory exhaust evaluation, and compliance services. Projects included:

- Provided detailed technical assessment of problematic fume hood face velocity monitors in Parsons in support of Parsons renovation project. OEHS has provided analytical input in an effort to help resolve operational deficiencies. Face velocity monitors provide critical safety function and consistent, reliable operation is essential in ensuring safety of laboratory workers.
- Provided guidance related to laboratory renovation and assignment of appropriate research space for new Natural Resources professor using hazardous chemicals.
- Reviewed chemical storage in new shared chemicals storage room in Parsons. Identified several compliance issues; summarized and forwarded to responsible parties for resolution. Worked with researchers to address the safety issues.
- Provided guidance upon request regarding chemical storage and segregation to research group in Morse Hall.
- Met with staff from research lab in Spaulding and Parsons Hall regarding two separate chemical spill incidents. Identified and summarized safety concerns and forwarded to the principal investigators (PIs). Followed up with the PIs to assess progress in resolving outstanding safety issues.
- Participated with Research Computing and Instrumentation (RCI) and the Office of Research Partnerships and Commercialization regarding promotion and commercialization of UNH CEMS. Attended American Chemical Society conference and discussed UNH CEMS with potential customers. Participated with RCI on live demonstration of UNH CEMS to a Maryland Public School district. Collaborated on promotional video for UNH CEMS with RCI.
- Responded to concerns from Durham Fire Department regarding fire code violations in Morse Hall. Worked with Morse Hall staff to address the concerns and report back to Durham Fire.

7. Occupational Health Medicine

OEHS provides guidance to affected departments on medical surveillance requirements for faculty, staff, and students as required by state of federal requirements or indicated by best practices. Medical surveillance programs are established for respiratory protection, hearing conservation, lead, asbestos, and bloodborne pathogens. There are currently 424 employees participating in medical surveillance programs at UNH. OEHS continues to receive and maintain records for those participating in the Animal Handlers Medical Surveillance Program, however the day to day management and participant follow up is now under the responsibility of Research Integrity Services.

Occupational Health Program for Animal Handlers

The occupational health program for personnel who work in laboratory animal facilities or who have frequent contact with vertebrate animals is a joint responsibility of Research Integrity Services (RIS) and the Office of Environmental Health and Safety (OEHS). Each person working with vertebrate animals in a project must participate in the UNH Occupational Health Program for Animal Care Personnel. This in-
volves completing the Medical History & Risk Assessment Questionnaire for Persons Handling Vertebrate Animals and attending scheduled trainings. The Questionnaire was updated in January 2012 after consultation with University Health Services and Research Integrity Services. There are 489 participants in the Occupational Health Program for Animal Handlers in 2012. This represents a 24% increase in participants from 2011.

UNH Health Services and/or the employee's primary care provider provide medical treatment for employees with illness and injury. The occupational health program includes the following:

a. Medical/work history
b. Physical examinations and immunizations (at the discretion of the attending physician)
c. Reporting of illnesses or injuries
d. Maintenance of individual health records
e. Surveillance program for zoonotic diseases
f. Monitoring of hazardous substances
g. Employee Occupational Health Education Program, and
h. Personal Health Regulations

8. Emergency Procedures

With the approval of the UNH Occupational Safety Committee, OEHS completed a review and update of the UNH Emergency Procedures Program (EPP) in January 2012. The purpose of the UNH Emergency Procedures Program (EPP) is to provide information that will save lives during emergencies or disasters, and hasten the resumption of normal UNH operations after these events. Prior planning and preparedness is critical due to the nature of situations that occur at any time with little or no warning. The EPP outlines procedures to be followed by the campus community for responding to, and recovering from, a variety of emergency and disaster situations. These events may include fires, hazardous spills, earthquakes, bomb threats, or major accidents. Any of these situations may have diverse impacts. For example, they may or may not require an evacuation of building occupants and a disruption of activities. An effective emergency response depends on informed campus communities, whose members are familiar with campus procedures and understand their personal responsibility for emergency preparedness and response.

9. Diving Safety

Scientific diving is defined by OSHA regulations as diving performed solely as a necessary part of a scientific, research, or educational activity by employees whose sole purpose for diving is to perform scientific research tasks. UNH is exempt from the regulations that govern commercial diving activities provided its program is defined as scientific diving and which is under the direction and control of a diving safety program containing at least the following elements:

• A diving safety manual which includes at a minimum: Procedures covering all diving operations specific to the program; including procedures for emergency care, re-compression and evacuation; and the criteria for diver training and certification; and a diving safety officer.
• Diving Control Safety Board, with the majority of its members being active scientific divers, which shall at a minimum have the authority to: approve and monitor diving projects, review and revise the diving safety manual, assure compliance with the manual, certify the depths to which a diver has been trained, take disciplinary action for unsafe practices, and assure adherence to the buddy system (a diver is accompanied by and is in continuous contact with another diver in the water) for SCUBA diving.

UNH has implemented both of these elements and is in compliance with this exemption.

B. Disaster and Emergency Preparedness

OEHS continues to work closely with the UNH Police Department and the University Emergency Group (UEG) on disaster preparedness. In October 2012, OEHS participated in the activation of the UNH Hurricane Preparedness Plan and opening of the campus emergency operations center in response to Hurricane Sandy. Participants included all members of the UEG and representatives from the Town of Durham. OEHS coordinated notification to all research and teaching laboratory faculty and staff about the potential of a campus power outage and its impact on research and teaching activities.

In November 2012, OEHS worked with campus stakeholders to develop an Emergency Operations Plan (EOP) for Parsons Hall. This Plan establishes guidelines, procedures, and organizational structure for response to potential critical incidents that may occur in the renovated complex. The plan is written to specifically address emergencies that may occur at Parsons Hall. The basic structure of the plan is modeled after UNH’s Emergency Procedures Program. Parsons Hall primarily houses the Chemistry Department including the chemistry laboratories and is located on Academic Way on the South side of the campus. The purpose of the plan is to establish clear guidelines regarding UNH employees’ responses to emergencies, including fire, chemical spills or releases, power outages, acts of violence and injury/illness. The EOP is developed to provide for the safety of the UNH community and follows the basic elements contained in the Occupational Safety and Health Administration (OSHA) regulation for emergency action planning contained in 29 CFR 1910.38. The EOP details the actions that UNH employees will be expected to take in response at Parsons Hall to an emergency and identifies certain individuals that have an emergency response role.

OEHS continued to update the campus Integrated Contingency Plan (ICP) in 2012. The intent of the UNH ICP is to establish the necessary procedures and equipment required to prevent and to minimize hazards to public health, safety or welfare, or to the environment, from fires, explosions, spills or any other unplanned sudden or non-sudden release of hazardous materials to air, soil, surface water, or groundwater. The plan is also designed to prevent spills releases of hazardous substances that violate applicable water quality standards, cause a sheen upon or discoloration of the surface waters, or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shoreline.

C. Art Safety

OEHS continued to work with members of the Art and Art History Department on health and safety projects for the department.
VI. Laboratory Safety and Environmental Management

A. Air Quality

The New Hampshire Department of Environmental Services (NHDES) issued UNH a Title V Air Permit (TV-OP-010) for the campus Central Heating Plant and Co-generation Facility on April 11, 2007. A significant permit modification was issued by NHDES in November 2009 removing the permit condition requiring a fuel flow meter on the black start emergency generator (BSEG) at UNH’s Co-generation facility. In addition, UNH was issued a Temporary Permit and Prevention of Significant Deterioration (PSD) and Non-Attainment New Source Review (NSR) permit (TP-B-0531) in July 2007 for the construction and operation of combustion devices associated with a Landfill Gas to Energy facility at Rochester and on the Durham campus. UNHs’ current Title V and Temporary permits contain specific conditions that the campus must adhere to including an annual compliance certification report. UNH filed a renewal application for its Title V permit that was determined to be timely and complete by NHDES in December 2011. UNH’s Title V renewal application included all devices currently covered by the existing Title V and Temporary Permits. It is anticipated that a draft Title V permit will be issued by NHDES in mid 2013.

Working with a third party consultant and UNH Facilities, OEHS conducted a detailed review of the UNH Refrigerant Management Program (RMP). The purpose of the RMP is to:

- To ensure UNH is in full compliance with Section 608 of the Clean Air Act Amendments and the requirements of 40 CFR Part 82, Subpart F;
- Maximize the recycling of ozone depleting substances (ODS) and to minimize the release of ODS to the ambient air from the servicing, repairing, maintaining, and disposing of refrigeration appliances on its Durham campus;
- Utilize certified technicians for the servicing, repairing, maintaining, and disposing of refrigeration appliances on its Durham campus;
- Maintain proper records of refrigerant consumption, technician training, and recycling and recovery equipment certification; and
- Ensure proper repairs are made for units with significant leak rates.

To achieve the stated objectives above, UNH requires all employees and contractors whose job duties require the handling, ordering, repairing, servicing, maintaining, or disposing of refrigerant or refrigeration appliances to review and comply with this written program. The updated RMP was completed in September 2012 and distributed to UNH Facilities for distribution.

B. Biological Safety Program Updates

New Hampshire Veterinary Diagnostic Laboratory Waste:

The New Hampshire Veterinary Diagnostic Laboratory was seeking alternatives to boxing up pathology waste in early 2012. Pathology waste typically consists of tissue and carcass waste from the diagnostic procedures carried out at the lab. Cardboard boxes were becoming insufficient due to their weight restrictions, leak potential and ergonomic issues. An alternative method of disposal was sourced and instituted in July 2012 allowing the NHVDL to utilize 55 gallon polydrums for their pathology waste. This approach to disposal solved all the issues without adding significantly to disposal costs. Twelve drums were shipped in 2012 for a waste disposal cost of $2,625.
The Institutional Biosafety Committee:
The Institutional Biosafety Committee went through a number of significant administrative changes in 2012. Chair Frank Rodgers retired in January, but remained on the committee as interim-Chair until June when Dr. Richard French assumed the Chair from his Vice-Chair position. Dr. Rodgers remains on the Institutional Biosafety Committee as an ad-hoc member representing expertise with infectious agents. Dr. Richard French subsequently left the University at the end of December 2012, leaving the committee without a Chair. At the end of Q4 2012, committee member Barry Corriveau stepped into the Vice-Chair role, and Dr. Rodgers agreed to come back and serve as interim chair until the end of Q2 2013 when a new Chair will be appointed.

The IBC Charter was revised in April 2012 to clarify and streamline the process for protocol submission and review. Two levels of approval were instituted: Level 1 which consists of full committee approval for regulated scientific protocols; and Level 2 consisting of IBC Chair and Biosafety Officer approval only, for BSL-2 “potentially infectious” work. The updates to the charter and its procedures were well received by the scientific stakeholders.

![Figure 1: Number of IBC Protocols By Year](chart)

**Notable points for the IBC in 2012:**
- There were 34 protocols registered with the IBC; 6 were Level 1 protocols and 28 were Level 2 protocols.
- The annual report was submitted to National Institutes of Health in June. The report includes a roster of active IBC members indicating their specialty areas and biographical sketches of each member.
- There are 44 labs operating at Biosafety Level 2 (BSL-2) containment and 11 labs operating at Biosafety Level 1 (BSL-1) containment.
Training:
The Blackboard training modules for BSL-1 and BSL-2 labs were updated in May. A new training module for biohazardous waste was created in May also. The number of attendees for biological safety training was as follows:

- BSL-1: 85 attendees
- BSL-2: 237 attendees
- Bloodborne Pathogens: 214 attendees
- Biohazard Awareness (facilities, housekeeping, small projects): 100

Autoclaves:
The waste procedures for autoclaved waste were evaluated in April of 2012. A number of changes to the program were instituted, including: 1) reducing the number of autoclaves used for processing biohazardous waste; 2) validating the autoclaves for waste use; and 3) running quality control tests more frequently on the autoclaves used for biohazardous waste treatment. During validation testing, it became clear that the amount of time required for full sterilization of waste needed to be increased, so new procedures were drafted and training was provided to all affected users. The new waste procedures came on-line in May 2012 and have been a success. In addition, the Facilities department has contracted with the manufacturer for quarterly maintenance of all wall-unit autoclaves.

Inventory:
There are currently 750 organisms listed in the biological inventory. Organisms in the inventory are classified as Risk Group 1 or Risk Group 2 infectious agents.

Permits:
OEHS continues to review Material Transfer Agreements (MTAs) and provide technical advice on import permits for biological materials from USDA, CDC and US FWS.

Institutional Animal Care and Use Committee:
Two OEHS personnel are non-voting members of the Institutional Animal Care and Use Committee (IACUC). Both representatives review IACUC protocols for occupational and laboratory safety issues. All monthly IACUC meetings are attended and input is provided when needed.

Other:
The Biological Safety Officer represented UNH at the annual American Biological Safety Association (ABSA) conference and attended training classes with other professionals in the biological safety field.
C. Chemical and Laboratory Safety

The Laboratory Safety Inspection Initiative (LSII) continued in 2012 under the direction of the Laboratory Safety Officer. The LSII includes the inspection of rooms with hazardous chemicals and infectious substances. OEHS performed safety inspections in rooms possessing or using hazardous materials in the following buildings:

- Jackson Estuarine Laboratory
- Kendall Hall
- Kingsbury Hall
- Morse Hall
- Parsons Hall
- Conant Hall
- Demeritt Hall
- Gregg Hall
- James Hall
- Rudman Hall
- Hewitt Annex
- Spaulding Hall
- UNH-Manchester Chemistry/Microbiology labs

OEHS continues to administer and support the UNH Chemical Safety Committee. Representatives from OEHS organize and attend quarterly meetings, compile minutes, draft appointment letters, and fulfill other administrative requirements for the committee.

OEHS continued to monitor and ensure institutional compliance with the US Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS). This regulation requires facilities which possess or transfer certain “Chemicals of Interest,” to file an in-depth screening report with DHS and comply with certain security requirements. The list of Chemicals of Interest includes over 300 chemicals that could potentially be used for sabotage or the creation of a weapon of mass effect. OEHS uses UNHCEMS to search the campus inventory for Chemicals of Interest, and works with owners to ensure the inventories are accurate.

OEHS continued to perform detailed evaluations of laboratory chemical fume hood operation and performance in 2012. These checks are performed for each of UNH’s 422 fume hoods on an annual basis and whenever hoods are reported to have operational deficiencies. OEHS staff performed more than 600 chemical fume hood evaluations in 2012. The chemical fume hood is the primary engineering control protecting workers in research laboratories from hazardous chemical exposures; as a result, OEHS dedicates significant resources to properly evaluate fume hoods for safe operation.

OEHS purchased a new hot-wire anemometer with differential pressure sensor in 2012. This measurement tool is the most accurate field survey instrument available to measure fume hood face velocity and is the same instrument used by trade contractors who evaluate UNH fume hoods and other HVAC equipment. This ensures that OEHS test data is comparable to professional testing contractors. OEHS also purchased a theatrical smoke generator. This equipment is used to visualize airflow patterns associated with laboratory exhaust systems. Use of this equipment was critical in identifying and resolving operational problems with fume hoods in Parsons Hall.

OEHS identified chemicals in UNH CEMS that have significant physical hazards such as spontaneously combustible, explosive when dry, explosive, shock sensitive, self-reactive, and self-reactive temperature controlled.
These items are now flagged in UNH CEMS as particularly hazardous chemicals and can be easily identified for hazard communication and risk assessment purposes.

OEHS designed custom cylinder storage racks for researchers in Morse Hall. Three significant cylinder storage areas in Morse Hall lacked appropriate cylinder restraints. Commercial products were expensive and inefficiently used the available space. OEHS contracted with a local metal fabricator and created custom solutions. The new cylinder restraints were cost-effective, efficiently use valuable research space, and enhance laboratory safety.

OEHS worked with COLSA and Small Projects Construction Team (SPCT) to improve availability of washing facilities for laboratory coats. COLSA researchers had limited access to facilities where it would be possible to wash laboratory coats. OEHS utilized Mitigation Funds to purchase a dedicated washer/dryer and hire SPCT to install the equipment in Spaulding. Improving access to this equipment for UNH researchers reduces the chance of cross-contamination with personal items.

OEHS provided technical input and support for laboratory design and renovation projects including during planning phase, construction, and commissioning. Tested fume hood performance as well as other laboratory exhausts, evaluated face velocity monitor function, reviewed eyewash and deluge showers, flammable cabinets, safety equipment availability, egress, lab HVAC function, and chemical storage. Provided input and support for the following projects:

- Chemistry lab renovations at UNH-M;
- Retro-commissioning of research laboratories at Gregg Hall;
- Renovation of research laboratory in Morse Hall;
- Kendall Hall roof-top fume hood exhaust renovations; and
- Parsons Hall laboratory renovations.

OEHS evaluated laboratory engineering controls and identified issues requiring repair. Collaborated with Facilities Operations and Maintenance and the Energy Office on repairs. Projects included:

- Multiple fume hood sashes in Rudman did not meet minimum performance specifications;
- Water leak into fume hood in Spaulding research lab;
- Fume hood sash broken in Morse Hall research lab;
- Fume hood in Rudman research lab with unique operation required increased exhaust flow;
- Performance problems with fume hoods in Kingsbury Hall chemical fume hoods exhausting too fast;
- Fume hood with persistent low flow issues in Spaulding research lab;
- Roof air re-entrainment into research lab in Spaulding;
- Conant research lab fume hood low flow;
- Demeritt Hall face velocity monitor deficiency;
- Routine maintenance requests for fume hood low flow, fume hood lights out, eyewashes requiring service, deficient fume hood face velocity monitors in research and teaching labs in all science buildings.
D. Emergency Planning and Community Right-to-Know

The Emergency Planning and Community Right-to-Know Act (EPCRA), also known as the Superfund Amendments and Reauthorization Act (SARA) Title III, is a statute designed to improve community access to information about chemical hazards and to facilitate the development of chemical emergency response plans by State and local governments. EPCRA required the establishment of State Emergency Response Commissions (SERCs), responsible for coordinating certain emergency response activities, and for appointing Local Emergency Planning Committees (LPECs).

The emergency planning requirements of EPCRA are designed to develop state and local government emergency response and preparedness capabilities through better coordination and planning, especially within the local community. In 2012, OEHS notified the SERC and the LEPC that UNH stores eleven chemicals, including anhydrous ammonia, chloroform, formaldehyde, methanol, ferric chloride solution, polyaluminum chloride, sodium hydroxide, sodium hypochlorite, sulfuric acid, heating fuels and road treatment chemicals which fall above the threshold planning quantity and must be reported.

E. Hazardous Materials Inventory

Data collection and compliance reporting for OEHS relies heavily on the UNH Chemical Environmental Management System (UNHCEMS®). Indeed, the entire university community uses UNHCEMS®. There are currently 740 active users using the system. There are 209 users with an active inventory. In 2012, users logged in 5,187 times.

Additional UNHCEMS® statistics for the calendar year include:

- 36,524 chemical containers on campus
- 13,897 containers purchased before 1999
- 13,581 unique chemicals in the inventory
- 5,036 containers added campus wide
- 12,899 containers marked empty
- 14 chemicals marked as surplus
- 29,940 MSDS stored
- 1,707 hazardous waste records were added (of which, 1,460 were for regulated waste)
- 587 active door signs
- 44 BSL-2 door signs posted
- 750 active biological agents
- 54 unsealed radioactive isotopes are tracked
- 135 sealed sources are tracked
- 357 Aboveground Storage Tank inspection reports
- 96 transformer inspection reports
- 15 Satellite Accumulation Area inspection reports
- 48 Small Quantity Generator inspection reports
- 316 fume hood inspection reports
- 82 biological safety cabinet inspection reports
Figure 2: Chemicals Received by OEHS in 2012 (by Month) Number of Containers

Figure 3: Container Count by Building 2012

- Rudman Hall
- Parsons Hall
- Spaulding
- Gregg Hall
- Kendall Hall
- Kingsbury Hall
- Central Receiving
- Morse Hall
- James Hall
Figure 4: Number of Containers by Department

Figure 5: Material Safety Data Sheets in UNHCEMS® 2004-2012
F. Hazardous Materials Shipping

OEHS continued efforts to maintain compliance with hazardous material shipping regulations by offering guidance, training, on-site review, and reference material to the UNH community. OEHS provided personal guidance and training for 22 UNH research projects in 2012. This included providing guidance for domestic and international research material shipments including those to Tunisia, Austria, Puerto Rico, and Japan.

Resources created by UNH OEHS for hazardous material shipping are used extensively nation-wide. Several UNH hazardous material shipping documents are widely recognized as standard reference material and are used by many other institutions. OEHS continued to create and update hazardous material shipping reference documents for the UNH research community in 2012.

G. Hazardous Waste Management

UNH OEHS continued to support the hazardous waste management efforts of UNH faculty, staff, and students at the UNH Durham campus as well as at UNHM, Jackson Estuarine Laboratory, Coastal Marine Laboratory and the Transportation Garage. The UNH Durham campus is a large quantity generator of hazardous waste. The campus had 209 documented Satellite Accumulation Areas (SAAs) active during 2012. UNH has 5 SAAs that accumulate 10 gallons or more of hazardous waste and are required to complete and submit a monthly inspection report.

In addition to day-to-day waste management activities, UNH OEHS staff has been involved in the following projects:

OEHS staff participated with UNH Facilities Services throughout 2012 in a work group to review campus hazardous waste management operations and study central hazardous waste accumulation facility renovation requirements. A facility renovation project has been funded and is now entering the design phase.

During 2012 and into January of 2013, OEHS completed hazardous waste management responsibilities related to the Parsons Hall renovation project. Responsibilities included significant hazardous material inventory reduction efforts, hazardous materials decommissioning of the building’s north and southwest wings and the move in of hazardous materials to newly renovated teaching and research laboratories.

Legacy pesticides were identified as a hazardous material inventory reduction opportunity. Outdated and unused pesticide products stored in secure areas at the McFarlane Greenhouse, Kingman Farm and Grounds and Events were moved to the OEHS central hazardous waste accumulation area for packaging and shipment to a permitted hazardous waste disposal facility.

OEHS staff completed a number of state and federal regulatory reports and requests for information from the New Hampshire Department of Environmental Services and USEPA including: self-audits, quarterly and bien-
Hazardous material reduction efforts were undertaken throughout the year for academic and support departments. Significant inventory reductions were completed for the Materials Science Program, Department of Molecular, Cellular, & Biomedical Sciences, Mechanical Engineering, Institute for the Study of Earth, Oceans & Space, Chemistry, Psychology, Civil Engineering, Energy and Utilities, Facilities Services and Housekeeping Services.

OEHS staff was responsible for the management and disposal of regulated wastes generated from the Grant and Janetos Houses which were demolished to make way for the Peter T. Paul School.

During 2012 OEHS was heavily involved in the management of PCB contaminated construction debris and lead contaminated materials generated from construction and renovation projects at Parsons Hall and the Field House.

Throughout the year, laboratory decommissioning and hazardous material inventory reduction efforts led to an increased need for specialized highly hazardous materials management practices including: unknown materials identification, remote opening procedures, chemical stabilizations, dedicated transportation services and controlled detonations.

OEHS staff collaborated with the New Hampshire Veterinary Diagnostic Laboratory staff to develop and implement a revised packaging method to provide a more convenient, regulatory compliant system for managing biohazardous veterinary pathology waste.

OEHS staff have formed a working group with Research Computing and Research Integrity Services to develop a common training platform software.

UNH continues to utilize the Blackboard Learning System to complete training for faculty, staff and students, and will continue to use this training method for initial as well as refresher training. Currently, there are 173 generators/handlers that have received the Initial Hazardous Waste Management Training and 97 generators/handlers that have received the Refresher Hazardous Waste Management Training. Thirty one personnel have been trained for universal waste. OEHS hazardous waste management staff receive annual training from the NH Department of Environmental services, and in August attended the 2012 Annual College and University Hazardous Waste Conference hosted by the University of Vermont.

Hazardous waste disposal statistics for calendar year 2012 are as follows:

- Chemical Waste: 26,088.8 kilograms
- Biohazardous Waste: 841.5 cubic feet
- Batteries: 3,928 pounds
- Lamps: 19,330 lamps
There were also five Lab Packs and Bulk Shipments that were not included in UNHCEMS® waste database:

<table>
<thead>
<tr>
<th>Date</th>
<th>Building</th>
<th>Department</th>
<th>Generators</th>
<th>lbs/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 14, 2012</td>
<td>Waste Treatment Plant</td>
<td>Energy and Utilities</td>
<td>W. East</td>
<td>600 gallons</td>
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<td>July 13, 2012</td>
<td>Parsons Hall</td>
<td>Chemistry</td>
<td>J. O’Brien</td>
<td>1082 lbs/ 491 kg</td>
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<tr>
<td>October 4, 2012</td>
<td>Transportation Garage</td>
<td>Transportation</td>
<td>R. Myatt</td>
<td>1,604 gallons</td>
</tr>
<tr>
<td>November 16, 2012</td>
<td>Rudman Hall</td>
<td>Energy Office</td>
<td>S. Lindquist</td>
<td>6,217 lbs/2,820 kg</td>
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**Figure 6: Kilograms of Hazardous Chemical Waste Generated by Building 2012**
Figure 9: Ballasts Removed from UNH 2002 - 2012

<table>
<thead>
<tr>
<th>Year</th>
<th>TSCA PCB Lamp Ballasts</th>
<th>Non-PCB Lamp Ballasts</th>
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<tbody>
<tr>
<td>CY 02</td>
<td>3,201</td>
<td>7,200</td>
</tr>
<tr>
<td>CY 03</td>
<td>-</td>
<td>1,200</td>
</tr>
<tr>
<td>CY 04</td>
<td>-</td>
<td>-</td>
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<tr>
<td>CY 05</td>
<td>2,692</td>
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<tr>
<td>CY 06</td>
<td>371</td>
<td>8,008</td>
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<td>CY 07</td>
<td>4,655</td>
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</tr>
<tr>
<td>CY 08</td>
<td>2,937</td>
<td>1,667</td>
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<tr>
<td>CY 09</td>
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<td>3,215</td>
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<tr>
<td>CY 10</td>
<td>1,286</td>
<td>2,462</td>
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<tr>
<td>CY 11</td>
<td>-</td>
<td>1,328</td>
</tr>
<tr>
<td>CY 12</td>
<td>-</td>
<td>-</td>
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Pounds

Figure 10: Circular Lamps Removed from UNH 2002 - 2012

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<td>549</td>
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<tr>
<td>CY 03</td>
<td>366</td>
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<tr>
<td>CY 04</td>
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<td>CY 06</td>
<td>526</td>
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<tr>
<td>CY 07</td>
<td>168</td>
</tr>
<tr>
<td>CY 08</td>
<td>874</td>
</tr>
<tr>
<td>CY 09</td>
<td>246</td>
</tr>
<tr>
<td>CY 10</td>
<td>737</td>
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<tr>
<td>CY 11</td>
<td>553</td>
</tr>
<tr>
<td>CY 12</td>
<td>875</td>
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</table>
Figure 11: Compact Fluorescent Lamps Removed from UNH 2002 - 2012

Figure 12: Fluorescent Lamps Removed from UNH 2002 - 2012
H. Radiation and Laser Safety

UNH possesses a Type A Broad Scope License from the State of New Hampshire Department of Health and Human Services, Radiological Health Section, to use radioactive material. OEHS manages the Radiation Protection Program and ensures compliance with license conditions, applicable governmental and state rules and regulations. OEHS reviews and updates the Radiation Protection Program and the Radiation Safety Users Guide. OEHS distributes and reviews new and renewal applications for the use of radioactive material and issues permits granted by the UNH Radiation Safety Committee (RSC) to Authorized Users on campus.

There were no new permit applications, and 17 permit renewal applications for 2012. The RSC formulates policies governing the safe use of ionizing radiation and issues authorizations for each use. The RSC reviews and evaluates the performance of the Radiation Protection Program quarterly via quarterly audits performed and reported on by the Radiation Safety Officer (RSO).

There were 17 Authorized Users of radioactive material on campus and 42 laboratories that were permitted to use radioactive material, which were inspected by OEHS quarterly, totaling 168 laboratory inspections in CY-12. These laboratory inspections included an audit of all laboratory-required paperwork, Radiation Worker interviews, and contamination and radiation dose rate surveys. There were 91 Radiation Workers that were
permitted to use radioactive material and 7 orders of radioactive material to campus, including isotopes such as P-32, H-3, C-14 and I-125, with each order requiring OEHS to conduct swipe tests and radiation surveys.

OEHS conducted initial Radiation Worker training for 27 faculty, staff, and students in 2012. One Hundred percent compliance was achieved by Radiation Workers taking refresher training. Radiation Awareness training was completed on-line by 98 staff and students. Additionally, there was face-to-face training for personnel that needed access to laboratories that contain radioactive material, but do not handle radioactive material. There were 15 housekeeping personnel, 25 contractors, and 37 students that received face-to-face radiation awareness training. There are 129 sealed sources of radioactive material, which OEHS inventories several times a year. OEHS completed 58 leak test evaluations in CY-12.

OEHS exchanged 59 dosimeters via a bimonthly exchange. Dosimeters are used to measure the doses of external radiation to personnel. OEHS will issue 53 annual occupational dose history exposure reports, which state dose histories for the previous twelve months. OEHS also sent 9 termination dose history reports for those who had ceased using radioactive materials at UNH.

OEHS collected 7 gallons of liquid scintillation vial waste and 50 gallons of dry active waste, as well as maintained 507.73 gallons of decay-in-storage waste, which is held in a secure location until decayed to background levels and disposed as ordinary trash. This greatly reduces the amount of radioactive waste the University has to ship to a low-level radioactive waste facility. An annual compliance audit for 2012 was completed by Clym Environmental Services, LLC in October. Overall, the report noted that the UNH Radiation Safety Program continues to be well managed.

**X-Ray Safety**

An x-ray manual was written and implemented in CY12. Seven x-ray diffraction laboratories are surveyed twice per year. No items of non-compliance have been reported. Fifteen people completed x-ray training online in 2012.

**Laser Safety**

OEHS also has an inventory 43 total lasers, 30 of which were class 3B and class 4 lasers and 13 of which are actively in use. OEHS offered Laser Safety training on-line and evaluation for operators and ancillary personnel. Training includes hazard identification, proper signage, use of protective eyewear and laser registration. Sixty-two staff and students completed Laser Operator training. Twenty-seven people completed Laser Hazardous Awareness training on-line. Eighteen housekeeping staff, and 25 contractors completed Awareness training face-to-face in 2012.
VII. UNH Manchester Emergency, Health, and Safety Committee

Training:
All members of the Committee have been reminded to take the Incident Command System (ICS) training.

We continue to aspire to offer First Aid and AED training to interested staff, faculty and students, but have not been able to implement that due to scheduling issues.

At the beginning of each semester we hold safety information sessions for students and staff.

Administrative:
Primary contact information has been changed to reflect that the Facilities Manager has the best knowledge of the building and should be the first called in an emergency.

UNH Manchester has moved from its 11,000 foot presence at 286 Commercial St to 22,000 feet at 88 Commercial St. Security has been established for all operating hours.

Incident Management:
Several Facility issues during the year including hurricanes and snow storms.

Explosion of a PSNH transformer on the property caused several shutdowns. No one inside the building was impacted and PSNH has carried out necessary repairs.

All incidents were discussed in detail to determine how to improve response.

The committee maintained its Blackboard presence and continues to seek additional table-top training and involvement in emergency preparedness.

Figure 16: History of UNH Manchester Chemical Inventory

![History of UNH Manchester Chemical Inventory](image-url)
VIII. New Legislation and Emerging Issues

OSHA Proposed Global Harmonized System of Classification and Labeling of Chemicals

- Proposal to modify the HCS to align with the GHS: OSHA is proposing to modify the current Hazard Communication Standard (HCS) to align with the provisions of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). The HCS requires that chemical manufacturers and importers evaluate the chemicals they produce or import and provide hazard information to employers and workers by placing labels on containers and preparing safety data sheets. Under the current HCS all employers must have a hazard communication program for exposed workers, including container labels, safety data sheets, and training.

- GHS: The primary benefit of the GHS is to increase the quality and consistency of information provided to workers, employers and chemical users by adopting a standardized approach to hazard classification, labels and safety data. The GHS provides a single set of harmonized criteria for classifying chemicals according to their health and physical hazards and specifies hazard communication elements for labeling and safety data sheets. Under the GHS, labels would include signal words, pictograms, and hazard and precautionary statements and safety data sheets would have standardized format. This system was agreed on at an international level by governments, industry, and labor, and adopted by the United Nations in 2002 with a goal of 2008 for implementation.

- Why modify the HCS: OSHA's proposal to adopt the GHS will not change the framework and scope of the current HCS but will help ensure improved quality and more consistency in the classification and labeling of all chemicals. This will enhance worker comprehension, resulting in appropriate handling and use of chemicals. The harmonized format of the safety data sheets will enable workers to access the information more efficiently. In addition, currently multiple labels and safety data sheets must often be developed for the same product when shipped to different countries. This creates a major compliance burden for chemical manufacturers and those involved in international trade, increasing the cost of providing hazard information. The adoption of GHS will minimize this burden.

- Major proposed changes to the HCS:
  - Hazard classification: Provides specific criteria for classification of health and physical hazards, as well as classification of mixtures.
  - Labels: Chemical manufacturers and importers will be required to provide a label that includes a harmonized signal word, pictogram, and hazard statement for each hazard class and category. Precautionary statements must also be provided.
  - Safety Data Sheets: Will now have a specified 16-section format.
  - Information and training: The GHS does not address training. However, the proposed standard will require that workers are trained within two years of the publication of the final rule to facilitate recognition and understanding of the new labels and safety data sheets.

IX. Communication and Outreach

The Office of Environmental Health and Safety uses many ways to communicate our mission to the campus. The department also provides invaluable information to the general public. This is accomplished in the form of a
departmental newsletter, face-to-face and group meetings, electronic communications, telephone consultations, on-site investigations, group trainings, and other effective communication methods.

The minutes of the Chemical, Institutional Biosafety, Occupational, Radiation, and University Environmental Health and Safety Committee meetings are posted on the website for full public disclosure of our activities. OEHS staff members serve as representatives on these regulatory committee meetings, and attend other meetings of interest to the campus, such as building construction and renovation meetings, the Energy Task Force, the Ecosystems Task Force, the University Emergency Group, as well as ad-hoc meetings when new issues arise.

OEHS produces and distributes many pamphlets and educational materials that cover a wide variety of health and safety topics. As a general practice, the technical experts in OEHS share their programs as much as possible.

X. Mechanisms to Measure Compliance

UNH utilizes a number of mechanisms to assure the campus is meeting the elements and objectives of the campus EH&S programs discussed in this report. These include outside audits, regulatory inspections, technical committee oversight, OEHS program review and USNH EH&S Council review. Examples are highlighted below.

A. Industrial Hygiene

Indoor air quality and toxic material exposure assessments are conducted by OEHS, outside consultants or by the campus Worker's Compensation Insurer depending on the complexity of the issue. The New Hampshire Department of Labor reviews the overall safety and health management program on a periodic basis.

B. General Safety

OEHS and the campus Worker's Compensation Insurer conduct independent safety audits of our food service facilities, crafts work areas, grounds and roads, and custodial areas. OEHS utilizes injury and illness trending data compiled by UNH's Workers Compensation insurer to focus safety initiatives. OEHS works with colleges and departments to maintain an electronic environmental health and safety training database for affected faculty, staff, and students. This centralized record keeping process enables OEHS and/or managers to generate queries of individual staff or area departments that are due for safety training. These reports aid in the scheduling of safety training and ensure that all necessary training is completed. Procedures for particularly hazardous work such as hot work, confined space entry, and asbestos and/or lead abatement require a reporting procedure that involves regular communication and oversight from the Fire Department, State agencies, or OEHS.

C. Fire Protection

Both the Durham Fire Department and the State Fire Marshal's Office conduct fire and life safety inspections of campus buildings. Fire suppression and fire alarm systems are tested and certified by outside consultants.

D. Occupational Health and Medicine

Medical screening and/or surveillance programs are implemented by departments utilizing the services of either UNH Health Services or outside occupational health services organizations. Faculty, staff, and student
compliance with the animal handler medical surveillance program is reviewed jointly by OEHS and the Office of Research Integrity Services on an as needed basis.

E. Disaster Preparedness

UNH has implemented an Emergency Procedures Program that outlines procedures to be followed by the campus community for responding to and recovering from fires, hazardous materials spills, and major accidents. Specific procedures to follow for fire evacuation are listed in the plan. Nobis Engineering, Inc. was hired to conduct a thorough review of the UNH Integrated Contingency Plan to ensure compliance with federal and state regulations.

F. Diving Safety

All aspects of the UNH research diving program are reviewed annually by the UNH Diving Safety Control Board.

G. Biological Safety

The UNH Institutional Biosafety Committee reviews and approves all biohazardous material protocols, including use of recombinant DNA molecules, for compliance with the National Institutes of Health Guidelines. OEHS conducts laboratory audits to assure proper biosafety procedures are being followed in the lab. Labs using human source materials are kept in compliance with the OSHA Bloodborne Pathogens Standard through training and strict use of Universal Precautions.

H. Hazardous Materials Inventory and Reporting

The U.S. Department of Transportation and the Federal Aviation Administration perform unannounced inspections and audits of the shipping program as part of a regional initiative to enforce hazardous materials shipping regulations at colleges and universities.

I. Hazardous Waste Management

OEHS provides regular oversight and review of laboratories and shops that generate and store hazardous waste. The New Hampshire Department of Environmental Services and the U.S. Environmental Protection Agency conduct unannounced inspections of the hazardous waste management program at colleges and universities. OEHS staff conducted a review of the Central Hazardous Waste Accumulation Area Preparedness, Prevention and Contingency Plan, the Hazardous Waste Transporter Contingency Plan, and the Central Accumulation Area Security Plan.

J. Radiation Safety

OEHS inspects all laboratories that contain radioactive material quarterly, performing contamination surveys, radiation surveys and compliance audits, ensuring all laboratories continue to meet all license conditions. The Radiation Safety Program is audited annually by an outside consultant. Results of the audit are shared with the Radiation Safety Committee and the Committee approves any changes to the Radiation Protection Program recommended by the audit consultant.
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<th>Program Elements</th>
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<th>2012</th>
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**LEGEND**
- Program in place
- Program undergoing review, improvement, or under development
- Program not in place
- Not Applicable
## Program Elements

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