### TABLE OF CONTENTS

**SECTION II – CAULKING MANAGEMENT PLAN**

1.0 INTRODUCTION .......................................................................................................................... 2

2.0 SCOPE AND APPLICABILITY .................................................................................................. 2

3.0 RESPONSIBILITIES .................................................................................................................... 3

3.1 The Office of Environmental Health and Safety ................................................................. 3

3.2 Facilities Services .................................................................................................................. 3

3.3 Facilities Construction Team ............................................................................................... 3

3.4 Facilities Project Management ............................................................................................. 4

4.0 REGULATIONS ............................................................................................................................ 4

4.1 Federal Environmental Regulations .................................................................................... 4

4.2 New Hampshire Environmental Regulations ..................................................................... 4

4.3 New Hampshire Department of Labor (DOL) Requirements ............................................. 5

4.4 U.S. Occupational Safety and Health Administration (OSHA) Requirements .................. 5

5.0 PCBS IN BUILDING MATERIALS ........................................................................................... 5

6.0 NOTIFICATION .......................................................................................................................... 5

7.0 BEST MANAGEMENT PRACTICES ........................................................................................ 6

7.1 Individual Window Repair/Replacement ............................................................................. 6

7.2 Contact Minimization .......................................................................................................... 7

7.3 Periodic Surveillance ............................................................................................................ 7

7.4 Personal Hygiene .................................................................................................................. 8

7.5 Planned Renovation ............................................................................................................. 8

7.6 Waste Disposal ................................................................................................................... 9

7.7 Prohibited Practices ............................................................................................................ 9

8.0 TRAINING ..................................................................................................................................... 9

9.0 SAMPLING .................................................................................................................................. 10

10.0 RECORDKEEPING ................................................................................................................... 11
1.0 INTRODUCTION

Polychlorinated biphenyls (PCBs) were included as additives to paints, including floor finishes, sealants for heating systems and plumbing, as well as a plasticizing agent for caulking materials. PCB concentrations in original caulking can vary from less than 50 parts per million (ppm) up to and exceeding 200,000 ppm. In locations where the original caulking has been replaced, PCBs may have leached into the surrounding substrate. In those locations where new caulking has replaced the original PCB caulking, PCBs may have also leached back into the new caulking at concentrations above the 50 ppm regulatory threshold.

UNH has distinguished two types of projects that could involve impacting known or suspected PCB caulking; 1) individual window/door repair/retrofit, or replacement under emergency conditions; and 2) planned renovation projects. The purpose of this Caulking Management Plan (Plan) is to provide guidance and outline best management practices (BMPs) to be utilized by the University of New Hampshire (UNH) Durham campus personnel when working with known or suspected PCB-contaminated building materials. It is also designed to assist in compliance with federal and state environmental, health, and safety regulations by providing guidance on the regulatory requirements associated with health hazards encountered when disturbing PCB-containing materials during maintenance and renovation activities. It provides guidance to ensure that PCB-containing materials are properly evaluated, tested as necessary, identified, handled and disposed of, as appropriate; in accordance with applicable PCB regulations. This document further defines the responsibilities of key UNH representatives, as well as requirements for appropriate training, work practices, disposal of PCB waste, and recordkeeping. This document does not address management practices associated with sudden “spills” or “releases” of PCBs from electrical equipment, including electrical transformers.

2.0 SCOPE AND APPLICABILITY

The Plan is limited in scope to the management of known or suspected PCB-caulking and contaminated building materials, and applies to the UNH Durham campus. UNH and private contractor personnel working with known or suspected PCB-caulking at the UNH Durham campus must adhere to the provisions of the Plan. UNH personnel within the following departments may be involved with and/or potentially handle known or suspected PCB-caulking.

1. Office of Environmental Health and Safety;
2. Facilities Services;
3. Facilities Project Management;
4. Facilities Construction Team; and
5. Housing.
3.0 RESPONSIBILITIES

3.1 The Office of Environmental Health and Safety

The Office of Environmental Health and Safety (OEHS) will be responsible for overall implementation and management of the Plan. These responsibilities include, but are not limited to, the following:

1. Reviews and approves the Plan and proposed changes made during reviews and updates;
2. Maintains PCB-related records;
3. Conducts and/or coordinates assessments of suspected PCB-containing materials and documents observations and results of confirmatory chemical analysis;
4. Coordinates with federal, state, local regulatory agencies regarding PCB management (e.g., reports to regulatory agencies, etc.);
5. Assesses hazardous waste storage areas;
6. Provides PCB awareness and handling training, as appropriate; and
7. Approves and signs Uniform Hazardous Waste Manifests and other documentation required for disposal of PCB wastes.

3.2 Facilities Services

UNH will identify maintenance personnel who might be exposed to PCB-containing building materials during day-to-day routine maintenance activities and who will be responsible for the following elements of the Plan and its implementation:

1. Assigns PCB-related work tasks to appropriately trained UNH employees;
2. Participates in regular PCB awareness/health and safety training;
3. Utilize the appropriate BMPs during those activities where potential contact with PCB-containing building materials may occur;
4. Assesses the condition of known or suspected PCB-containing building materials during the course of day-to-day maintenance activities and inform OEHS of concerns or conditions that may result in exposure to PCBs to UNH personnel;
5. Applies and/or maintains encapsulants placed on caulking, sills, or other surfaces for the purpose of preventing exposures to residual PCBs in these materials.

3.3 Facilities Construction Team

UNH will identify personnel who might be exposed to PCB-containing and/or contaminated building materials during construction related activities and who will be responsible for the following elements of the Plan and its implementation:

1. Assigns PCB-related work tasks to appropriately trained UNH employees;
2. Participates in regular PCB awareness/health and safety training;
3. Utilize the appropriate BMPs during those activities where potential contact with PCB-containing building materials may occur;
4. Assesses the condition of known or suspected PCB-containing building materials during construction activities and inform OEHS of concerns or conditions that may result in exposure to PCBs to UNH personnel;
5. Applies and/or maintains encapsulants placed on caulking, sills, or other surfaces for the purpose of preventing exposures to residual PCBs in these materials.

3.4 Facilities Project Management

1. Assigns PCB-related work tasks to UNH employees;
2. Participates in regular PCB awareness/health and safety training;
3. Coordinate sampling of suspected PCB materials for those projects where suspected materials would be impacted by scheduled construction related activities;
4. Coordinate the development of project specifications, bid documents, and remediation plans for those projects where identified PCB materials will be impacted by construction activities;
5. Coordinates and works with the independent consultants and/or contractors to facilitate sampling, encapsulation and/or removal of known or suspected PCB-containing building materials; and
6. Notifies OEHS of the presence of damaged known or suspected PCB materials.

4.0 REGULATIONS

4.1 Federal Environmental Regulations

The Toxic Substances Control Act (TSCA) of 1976 authorized the United States Environmental Protection Agency (U.S. EPA) to control substances that were determined to cause unreasonable risk to public health or the environment. In 1979 the U.S. EPA banned the manufacture of new products containing PCBs and developed regulatory requirements for the storage, labeling, use, and disposal of materials containing PCBs at levels above the regulatory thresholds. In addition, the regulations under TSCA specify allowed or authorized uses of PCBs in certain situations. If a material or item is not specifically listed it is considered unauthorized. The U.S. EPA considers building materials containing PCBs, including caulking with PCB concentration exceeding 50 ppm to be an unauthorized use. As a result, caulking materials with concentrations above 50 ppm must be managed as PCB wastes and removed following special procedures.

4.2 New Hampshire Environmental Regulations

PCBs are regulated under the New Hampshire Air Toxics Control Program (NH RSA Chapter 125-I, Air Toxics Control Act; and in NH Code of Administrative Rules Chapter Env-A 1400, Regulated Toxic Air Pollutants). This program regulates releases of toxic chemicals into the ambient air by a device or process at a stationary source without a temporary or operating permit issued by NH DES, unless exempted. The primary concern is burning of hazardous wastes. Burning of PCB-contaminated building materials at UNH is prohibited.
In New Hampshire, Hazardous Waste regulations are promulgated in the New Hampshire Statutes Chapter 147-a (RSA 147-A) and the New Hampshire Hazardous Waste Rules Env-Hw 100-1100.

4.3 New Hampshire Department of Labor (DOL) Requirements

Employee Safety and Health in the State of New Hampshire is regulated by the State of New Hampshire Department of Labor (NH DOL) under NH RSA 277. Toxic substances in the workplace are regulated by NH DOL under NH RSA 277-A. Employee notification of hazards is required under Section 277-A:5. Other requirements under this regulation include training, acquiring up-to-date toxicity information and making it available to potentially exposed employees, notifying employees of their rights under Chapter 277-A, and maintaining for at least 30 years a Safety Data Sheet on each toxic chemical a worker may be exposed to (please refer to UNH Hazard Communication Program).

4.4 U.S. Occupational Safety and Health Administration (OSHA) Requirements

There are currently no comprehensive OSHA regulations concerning PCB exposure. However, OSHA has set permissible exposure limits (PELs; inhalation) for Aroclor 1242 at 1 milligram per cubic meter (mg/m³) of air, and of Aroclor 1254 at 0.5 mg/m³. In addition both have been designated as a skin hazard where contact should be avoided. Exposures exceeding these values would require the use of respiratory protection in accordance with the UNH Respiratory Protection Program.

PCB-containing caulking has been identified at UNH. In addition, due to the age of some UNH buildings, there is the potential for additional unidentified PCB-containing building materials to exist. As a result of the potential health hazards associated with exposures to PCBs, workers and contractors impacting known or suspected materials must be provided information concerning PCB hazards according to the requirements of OSHA’s Hazard Communication Standard (29 CFR 1910.1200).

5.0 PCBs IN BUILDING MATERIALS

PCB-containing caulking may be present in buildings which were constructed or renovated between about 1950 and 1980 around windows, door frames, masonry columns and other masonry building materials on interior and exterior surfaces, as well as in expansion joints. PCB-containing caulking can leach into adjacent surfaces, soils, and impact dust inside of buildings.

Should renovation projects involve disturbing building materials suspected of containing PCBs, an evaluation of those building materials and impacted surfaces scheduled for impact is warranted.

Each location will be evaluated on a case-by-case basis and decisions to remove the PCB hazard will be made. Following the removal of PCB-containing materials, should surfaces remain that contain PCB’s above regulatory thresholds, they will be protected/encapsulated in accordance with an approved work plan. Should it be determined that PCBs exceeding current regulatory thresholds will remain, the University Systems of New Hampshire (USNH) legal department will be notified to establish an appropriate deed restriction for the specific property location.

6.0 NOTIFICATION

Depending on the project scope of work it may be necessary to submit for approval a remediation work plan to the U.S. EPA. For those projects involving the removal of PCB-contaminated building material (remediation waste) UNH will notify the U.S. EPA Region I office. Under a recent
reinterpretation by the U.S. EPA regarding PCB Bulk Product Waste, those building materials coated or
serviced with PCB bulk product waste (caulking) at the time of designation for disposal can be disposed
of as PCB bulk product waste. Should those materials coated or serviced with PCB bulk product waste
remain any future work will be considered disposal of PCB remediation waste and subject to the
notification requirements outlined herein. To reduce potential schedule delays for those projects requiring
the development and submission of a remediation plan, notification should be made a minimum of 120
days prior to the initiation of proposed work to allow sufficient time for U.S. EPA review and subsequent
revisions. The notification will be submitted under the heading of a remediation plan for the proposed
work and will, at a minimum, include the following information:

1. The nature of the contamination, including the kinds of materials contaminated;
2. A summary of the procedures used to sample contaminated and adjacent areas and a table
or cleanup site map showing PCB concentrations measured in pre-cleanup
characterization samples. The summary must include sample collection and analysis
dates;
3. The location and extent of the identified contaminated area(s), including topographic
maps with sample collection sites cross referenced to the sample identification numbers
as in the sample summary as described above;
4. The cleanup plan including schedule, disposal technology, and approach. The plan will
also contain options and contingencies to be used if unanticipated higher concentrations
or wider distributions of PCB remediation waste are identified or other obstacles force
changes in the cleanup approach; and
5. Written certification that the plan was prepared in accordance with 761.61(a).

Any proposed changes to an approved remediation plan will be submitted to the EPA a minimum
of 14 days prior to the proposed implementation of the requested change(s).

7.0 BEST MANAGEMENT PRACTICES

This section describes the best management practices (BMPs) UNH personnel will utilize for
those activities that may involve PCB-containing building materials. BMPs include recommended
engineering and administrative controls, personal protective equipment (PPE), personal hygiene, and
sanitation procedures to be followed in order to reduce or eliminate potential exposures to PCBs. While
interim risk minimization procedures are provided, each task will involve unique factors and create
specific conditions that would require an assessment as to the subsequent risk level. This will require an
assessment of the area where the work is required and the implementation of BMPs based on the specific
task(s) to be conducted.

7.1 Individual Window/Door Repair/Replacement

The following procedures will be followed by those UNH personnel that would be required to
repair or retrofit an existing window or door that may contain PCB caulking. In the event that a window
or door must be repaired or retrofitted, or in the case of an emergency, a single window or door
replacement, it may not be feasible to sample for PCBs. In that case, if it is determined that the building
was built or renovated between 1950 and 1980 or if the determination cannot be made, caulking will be
assumed to contain PCBs and managed accordingly.
The following work practices will be implemented to prevent or limit potential occupational exposures to PCBs during individual window repair/replacement:

- OEHS will be notified of the proposed work;
- Employees will wear protective Tyvek® coveralls and nitrile gloves to protect against skin exposure;
- Safety glasses will be worn to protect against foreign material impacting the eyes;
- Respiratory protection equipped with P-100/organic vapor cartridges will be worn to protect against inhalation of dusts and/or vapors during work involving caulking suspected of containing PCBs.
- The work area will be delineated with caution tape to keep unnecessary personnel out of the work area;
- Unless conditions prohibit, work will be performed from exterior locations. Plastic sheeting will be placed on interior locations to protect the floor and occupants from any dust and debris that could be generated during work activities;
- Provisions for contact minimization will be implemented as outlined below;
- The work area will be cleaned and wiped down upon completion of work;
- All personal protective equipment, plastic sheeting, and any items used for cleaning will be disposed of as PCB waste. All waste will be containerized and brought to OEHS for disposal as PCB bulk product waste.

7.2 Contact Minimization

Efforts to minimize contact with known or suspected PCB materials should be evaluated, and as necessary the following management practices can be implemented:

1. Change of use patterns which may include area isolation, traffic pattern changes, or the re-designation of a use area from high occupancy to low occupancy;
2. Delineation of areas to keep unauthorized individuals from accessing work areas or high risk locations;
3. Isolating areas utilizing polyethylene sheeting to contain dust and debris from impacting surrounding areas; and
4. Protecting surfaces from which PCB-containing materials (i.e., caulking) have been removed by the application of two dissimilar colored coats of waterproof epoxy paint. These areas will then be included in a periodic surveillance program. (It must be noted that studies have indicated that encapsulation of window caulking that contains PCBs may offer limited protection as the PCBs have been shown on occasion to migrate into applied encapsulants)

7.3 Periodic Surveillance

To assist in protecting UNH employees and students from potential exposures, periodic surveillance will be performed for those areas where known PCB containing and/or contaminated
building materials are present, and for those areas where interim controls have been implemented. Surveillance will be conducted to evaluate and observe for changes in conditions that could increase potential risks of exposure. Those conducting periodic surveillance should look for and document signs of deterioration or damage. Deterioration can be caused by age, temperature, vibration, chemicals, or by intentional or accidental acts. Periodic surveillance will be conducted in accordance with any conditions for approval where a Monitoring Maintenance Implementation Plan (MMIP) is mandated by the U.S. EPA. Those areas where PCB’s are present where a MMIP is not in place will be inspected on an annual basis, but may be increased based on observed conditions. Inspection frequency may increase should observed conditions warrant. All inspection records will be maintained by OEHS.

During routine activities should known or suspected PCB containing and/or contaminated building materials be observed to be damaged, OEHS will be notified and a further assessment will be conducted. Should removal or interim controls be required, they will be coordinated and conducted in accordance with the provisions outlined in the plan.

7.4 Personal Hygiene

Following the completion of maintenance activities that involve known or suspected PCB containing building materials, employees will follow general health and safety guidelines for proper hygiene.

1. PPE used while conducting maintenance activities involving known or suspected PCB-containing and/or contaminated building materials will be removed and disposed of properly;
2. Employees shall wash hands, face, and other potentially exposed surfaces of the body with soap and water; and
3. Change out of work clothes and shower at work if necessary (to prevent bringing PCB contamination home).

7.5 Planned Renovation

Prior to the initiation of planned renovation activities, the status of building materials suspected of containing PCBs that will be impacted must be evaluated. Based on the proposed scope of work it may be necessary to determine the presence or absence of PCB’s through sampling and laboratory chemical analysis (see section 9.0). Planned renovation activities are those activities above and beyond the scope of individual window/door repair/replacement as described above and include, but are not limited to:

1. Multi-window and/or door replacement;
2. Exterior wall renovation/re-pointing;
3. Brick/masonry demolition/renovation involving expansion joint caulking;
4. Partial or whole building demolition and/or renovation;
5. HVAC system/duct modification and/or replacement.
Planned renovation activities that have been identified to involve potential PCB building materials will be assessed and a work plan developed accordingly. Depending on the proposed scope-of-work, submission of the work plan to the U.S. EPA may be required. (Refer to section 6.)

It should be noted that many renovation projects which may affect PCB-containing and/or contaminated building materials could include lead-based paint and/or asbestos. UNH will notify contractors that may disturb building material if the affected materials are known or suspected to contain PCBs, lead, and/or asbestos.

7.6 Waste Disposal

Following the completion of work, removed material will be collected and handled as PCB waste and disposed of properly. Waste generated during individual window repair/replacement projects will be collected and placed into an appropriate container. Containers for the collection of PCB building materials for repair/replacement projects may be acquired at OEHS. Upon completion of the project, the container will be delivered to OEHS for appropriate off-site transport and disposal. Large scale projects involving PCBs will require the collection and disposal to be specified in the work plan and coordinated by the remediation contractor and/or OEHS.

7.7 Prohibited Practices

To minimize the potential for exposure to PCBs during in-house activities where suspected or known PCB caulking is present, the following practices are prohibited:

- Dry sweeping or dusting.
- Activities involving the mechanical removal/impact of caulking, contaminated substrates, or areas where interim controls are in place. This would include the use of abrasive grinding wheels, drills, power saws, sanding, or other means that would generate dust.
- The use of ordinary vacuums to clean up dust and debris. [Vacuums equipped with high efficiency particulate air (HEPA) filtration must be utilized].

8.0 TRAINING

Training will be required for UNH employees identified in Section 3 to ensure that personnel having potential contact/exposure to PCBs have knowledge of job hazards and are aware of the established BMP’s.

The training will be provided prior to job assignment and refresher training will be provided as necessary for each aforementioned worker.

The training will include discussions on the following:

1. The history and use of PCBs and the potential locations where PCBs could be encountered at UNH;
2. Exposure routes and potential health effects associated with PCB exposure;
3. Work activities that could result in exposure to PCBs;
4. The purpose, selection, fitting, use, and limitations of personal protective equipment (PPE);
5. The proper work practices associated with the workers’ job assignment, focusing on techniques for minimizing PCB exposure; and

9.0 SAMPLING

To assist in protecting all UNH employees and students from potential exposures, and to ensure the appropriate waste characterization, the following section outlines UNH policy and procedures for sampling.

9.1 Sampling

There are currently no regulatory requirements to sample building materials for the presence of PCBs. However, UNH must ensure that PCB waste in concentrations equal to or above 50 ppm are not introduced into construction or solid waste streams. Unless available records exist regarding the installation date of the suspected building materials, they are to be assumed to be PCB containing or contaminated until that time representative samples are collected by an independent consultant, and laboratory analysis confirms the absence or presence of PCBs. The following sampling guidelines have been established.

9.1.1 Sampling of suspected bulk PCB building materials

To assist with evaluating waste streams, sampling of suspected PCB building materials will be limited to those materials that are scheduled to be impacted by planned renovation/demolition activities. Those materials that are sampled are considered PCB bulk product waste if the concentration of PCBs is greater than or equal to 50 ppm.

9.1.2 Sampling of PCB bulk remediation waste

In addition to the bulk building materials as described above, substrates in contact with those suspected building materials will be sampled to evaluate potential PCB distribution and to assist with the development of remediation plans. Sampling of substrates will be conducted should bulk sampling as described above meet or exceed 50 ppm following approved U.S. EPA sampling methodologies. In addition, surrounding areas will be evaluated and as necessary, soils will be sampled in accordance with approved U.S. EPA soils sampling methodologies.

9.1.3 Air Sampling

Air sampling will be coordinated as need based on the results of bulk/remediation sampling results as described above, periodic surveillance, scheduled maintenance activities, the scope of anticipated building construction/renovation projects, and/or current/future occupancy. Should it be determined that there is a reasonable chance that PCBs could be rendered airborne during scheduled activities, OEHS should be contacted to discuss the need for sampling and the appropriate method(s) to be used. Air sampling results will be compared to the OSHA PEL as described previously and/or the maximum recommended public health levels of PCBs in school indoor air as established by the U.S. EPA. The U.S. EPA has developed the above maximum values for the concentrations of PCBs in indoor air in schools that would result in total PCB exposures below their public health target of 20 ng of PCB/kilogram-day.
### 9.1.4 Surface (Wipe) Sampling

Wipe sampling will be conducted in areas to determine surface concentration of PCBs where bulk sampling results indicate PCBs at or above 50 ppm as described above. Wipe sample results will be used to assist in evaluating PCB distribution and for evaluating potential exposure risks for inclusion in the remediation plan. Surface wipe sampling will be conducted by an independent consultant. Wipe sampling and subsequent analysis will be conducted following approved U.S. EPA sampling methodologies.

### 10.0 RECORDKEEPING

PCB records will be maintained by OEHS. These records will include, but not be limited to:

- Approved remediation plans;
- Laboratory analytical reports;
- Hazardous waste manifests;
- Official correspondence;
- Training records; and
- Other records as deemed necessary.

Records associated with remediation efforts involving PCB caulking will be maintained in an individual file by OEHS. A copy of remediation records will also be maintained on site throughout the duration of remedial activities.

U.S. EPA requires that records will be retained for a minimum of five years. For building information and for use during future potential renovation/demolition projects, records will be retained indefinitely.