BCIT Safety Manual

ASBESTOS MANAGEMENT

Contents

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1. Purpose

This document describes the BCIT Asbestos Management Program. This program outlines BCIT's approach towards assessment and management of the risks of exposure to asbestos.

The long term goal of this program is to have all asbestos safely removed from BCIT, while in the interim ensuring that best practices are being followed in order to minimize employee, student, contractor and visitor exposures, both in day-to-day actions, and during remediation activities.

2. Definitions

2.1 Asbestos

Asbestos is a naturally occurring fibrous silicate mineral that can cause serious chronic health effects. An asbestos fibre measures longer than 5µm, has a diameter of less than 3µm and an aspect ratio of 3:1. Asbestos has been commonly used in construction materials and other products because of its high heat resistance, strength and durability.

2.2 Asbestos Containing Material (ACM)

Any manufactured article or other material which contains 1% or more asbestos by weight at the time of manufacture, or which contains 1% or more asbestos.

2.3 Friable Material

Any material that is crumbled or powdered or which, when dry, can be easily crumbled or powdered by hand pressure.

2.4 Low Risk Work Activity

Work activity in proximity to friable asbestos-containing material, where the material is not disturbed and there is no significant release of asbestos fibre.

2.5 Moderate Risk Activity

Work activities that involve handling of asbestos-containing material or working in proximity to friable asbestos-containing material, not otherwise classified as low or high risk work activities.

2.6 High Risk Activity

Work activities that involve handling of asbestos-containing material or working in proximity to friable asbestos-containing material, where there is a high level of control necessary to prevent exposure to excessive concentrations of airborne asbestos fibre.

2.7 Qualified Individual

An occupational health and safety professional with experience in the practice of occupational hygiene as it relates to asbestos management.

2.8 Notice of Project for Asbestos (NOPA)

A document that must be submitted to WorkSafeBC at least 24 hours before starting any construction project that consists of the removal, encapsulation, or enclosure of friable asbestos materials, or the demolition, dismantling or repair of any part of a building or structure in which materials containing asbestos have been used, or in which asbestos products have been manufactured.

2.9 Hazard

A thing or condition that may expose a person to a risk of injury or occupational disease.

3. Reference Materials & Applicable Legislation

BCIT Safety Manual Part 2 Section 14 - Protective Equipment

BCIT Safety Manual Part 2 Section 15 – Contractor Safety

BCIT Safety Manual Part 2 Section 23 – Training and Orientation

WorkSafeBC Worker's Compensation Act Part 3 Division 3 - General Duties of Employers, Workers and Others

WorkSafeBC Regulation Part 6 – Substance Specific Requirements – Asbestos

WorkSafeBC – Safe Work Practices for Handling Asbestos

4. Roles and Responsibilities

4.1 BCIT Asbestos Management Plan Administrator (Facilities)

The BCIT Asbestos Management Plan Administrator is responsible for the development, use and maintenance of all asbestos related documentation at BCIT. This includes ensuring that the asbestos containing materials data is updated to include all current information regarding the areas where ACM exists at BCIT and the hazards associated with the asbestos. The BCIT Asbestos Management Plan Administrator must have experience working with Asbestos in similar settings as found at BCIT. Responsibilities also include:

- Scheduling and contracting-out asbestos removal and repair projects
- Coordinating the work of contractor and BCIT employees for asbestos abatement projects
- Coordinating all asbestos related work with the BCIT Asbestos Exposure Control Plan Administrator
- Inspecting work sites for final condition
- Submitting NOPA to WorkSafeBC for any work involving renovation or demolition of areas where ACM is present and BCIT employees are involved
- Maintenance of asbestos related documentation
- Ensuring that identification of ACM at BCIT is current and maintained accurately

4.2 BCIT Asbestos Exposure Control Plan Administrator (OHS)

The BCIT Exposure Control Plan Administrator is an employee at BCIT who meets the definition of a qualified individual as defined by WorkSafeBC (see definitions section- 2.7). This individual is responsible for the administration and periodic review of the Exposure Control Plan (appendix A). Specific responsibilities include:

- Attend pre-construction meetings to identify potential sources of adverse impact on adjacent area occupants and potential problems
- Act as a resource on all areas relating to the Asbestos Exposure Control Plan
- Review work plans and procedures that involve BCIT employees working on, or in proximity to asbestos abatement and repair projects
- Review contractor work plans and procedures for work on, or in close proximity to asbestos abatement and repair projects (including NOPAs)
- Attend area user information sessions for all ACM abatement projects
- Review air sampling results for airborne asbestos
- Submit an annual report to the Joint Occupational Health and Safety Committee, the OH&S Manager and the Director of Safety, Security and Emergency Management

4.3 Employees

BCIT employees must not carry out any work process or operate any tool, appliance or equipment if they have any reasonable cause to believe that to do so would create the potential for exposure to asbestos. BCIT employees must consult with the BCIT Asbestos Management Plan Administrator for any work that could potentially lead to asbestos exposure.

In all instances of suspected exposure to asbestos BCIT employees must immediately cease work and report the incident to their Supervisor and BCIT First Aid.

All BCIT employees must take reasonable care to protect their health and safety and the health and safety of others who may be affected by their acts or omissions at work. Employees must ensure that they are aware of, and follow, the established work procedures in their area and for their tasks. This includes wearing the required protective equipment, devices or clothing.

4.4 Supervisors

Supervisors are required to ensure the health and safety of all workers under their direct supervision. This includes providing to the employees the information, instruction, training and supervision necessary to ensure their health and safety in carrying out their work and to ensure the health and safety of others at the workplace.

Supervisors are responsible for ensuring that the employees under their supervision are trained in their work procedures and provided with the appropriate tools and equipment to ensure that they are not exposed to asbestos over the course of their work. This includes consulting with the BCIT Asbestos Management Plan Administrator and following all guidelines laid out in section 5 of this document before assigning any work that has the potential to result in exposure to asbestos. Supervisors assigning any such work are required to review and understand the BCIT Asbestos Exposure Control Plan (appendix A).

If, at any time the supervisor suspects that ACM poses an exposure hazard to their employees or others they must cease work immediately and consult with the BCIT Asbestos Management Plan Administrator. Work must not recommence until a risk assessment has been performed and risks of exposure to asbestos have been mitigated.

4.5 Project Coordinators

Project coordinators are required to follow the procedures outlined in the BCIT OHS Manual-Contractor Safety (Part 2 Section 15). This includes, but is not limited to:

- Ensure that all contractors are given all relevant information regarding the proximity to ACM at BCIT
- Ensure that all Risk Assessments, Work Procedures, NOPs, sampling results and other project related documentation is submitted to the BCIT Asbestos Control Plan Administrator and BCIT Asbestos Exposure Control Plan Administrator for review
- Ensure that the BCIT community receives information regarding the project
- Organize user information sessions and ensure that area users are briefed on the impacts to the project area and the associated risks
- Periodically review contractor work areas
- Update the BCIT Asbestos Control Plan Administrator, BCIT Asbestos Exposure Control Plan Administrator, the BCIT Community and all user groups of any changes to the project

4.6 Contractors/Prime Contractors

Only contractors who are experienced and have qualified individuals as defined by WorkSafeBC will be hired to perform asbestos remediation work at BCIT.

Contractors are responsible for ensuring the safety of their employees as indicated in BCIT Safety Manual Part 2 Section 15 – Contractor Safety. Contractors are required to consult with their BCIT Project Contact regarding the proximity to ACM at the worksite and the potential for asbestos exposures prior to commencement of any work at BCIT.

If, at any time during their work on BCIT property, the contractor suspects that ACM poses an exposure hazard to their employees or others they must cease work immediately and consult with their BCIT Project Contact who will consult with the Asbestos Management Plan Administrator. Work must not recommence until a risk assessment has been performed and risks of exposure to asbestos have been mitigated.

Contractors are responsible for submitting a NOPA to their BCIT Project Contact (who forwards the document to the BCIT Asbestos Control Plan Administrator to review prior to forwarding to the Asbestos Management Plan Administrator) and WorkSafeBC for any work that involves renovation or demolition of areas where ACM is present. Contractors are responsible for any asbestos waste or waste that is contaminated with asbestos, including disposable protective clothing and equipment, that is a result of their work on BCIT properties.

4.7 Occupational Health & Safety Group

- Respond to concerns surrounding asbestos disturbances by visual inspection and consultation with the Asbestos Management Plan Administrator and Asbestos Exposure Control Plan Administrator
- When necessary, work with project coordinators to advise area occupants of work activities and organize information sessions
- When requested, attend planning meetings to advise on controls and identify potential sources of adverse impact on adjacent area occupants
- Annually audit the Asbestos Management Program for compliance and documentation control

4.8 BCIT Responsibilities

- Provision of resources to ensure that the Asbestos Management Plan is effectively implemented at BCIT
- The Asbestos Management Plan must be reviewed annually

5. Procedures

BCIT employees and contractors working on BCIT property have the responsibility to abide by all of the requirements outlined in this document and applicable regulations. It is the responsibility of any person planning to work in a space to determine whether an asbestos hazard exists prior to the disturbance of any construction materials in buildings constructed prior to 1986.

5.1 Inventory

An initial high level survey of BCIT properties will be carried out by a contractor with properly trained individuals as outlined by WorkSafeBC. This high level survey will identify all areas where the potential for ACM exists and will be used to direct a structured, detailed sampling strategy of BCIT buildings to identify the actual locations of ACM.

An extensive, structured and detailed survey of all buildings that were highlighted by the initial survey will take place with sampling being performed by properly trained individuals following appropriate analytical methods as outlined by WorkSafeBC. Hazard risk assessments will be created to describe the location and condition of all ACM at BCIT. This information will be used to create an electronic inventory of asbestos at BCIT which will be housed in the BCIT Asbestos Management and Information Tool. This tool will be an electronic information system that is maintained in the BCIT Facilities Management Department by the Asbestos Management Plan Administrator. It has been designed to provide BCIT employees, students, contractors and other occupants with the necessary information and procedures to work in areas where ACM exist or are suspected. The BCIT Asbestos Management and Information Tool will be used to track the inventory, surveys and risk assessments, remediation work on projects, and procedures for working with or around ACM. This tool will also retain a searchable audit log of user access and work orders that are specific to ACM.

If, during their survey either contract company locates an asbestos hazard that provides an exposure concern they must report the instance to both the Asbestos Management Plan Administrator and the Asbestos Exposure Control Plan Administrator. Remediation of the hazard will be performed

immediately, ensuring that all of the appropriate precautions that are outlined within the Exposure Control Plan are adhered to.

Once both surveys have been completed an ACM remediation plan will be developed and reviewed annually thereafter. This remediation plan will become an appendix to this Asbestos Management Plan.

Regular inspections of ACM on campus shall be performed by the BCIT Asbestos Exposure Control Plan Administrator. These inspections are designed to determine whether the condition of the ACM has changed and whether updating of the applicable risk assessment is necessary. Risk assessments must be updated by properly trained individuals as outlined by WorkSafeBC whenever the conditions of the ACM have changed.

In the interim, prior to the creation and full implementation of the BCIT Asbestos Management and Information Tool the BCIT Asbestos Management Plan Administrator must advise the Project Coordinator regarding the potential for ACM disturbance on all projects. This includes using contract environmental consultants to survey project areas for any areas where data regarding the whereabouts of ACM has not been previously completed.

5.2 Identification

All of the materials that are identified by the site surveys as ACM will be entered into the BCIT Asbestos Management and Information Tool. The BCIT Asbestos Management and Information Tool is intended to provide ACM inventory information to all members of the community regarding ACM in occupied areas. Service areas, in addition to the information in the BCIT Asbestos Management and Information Tool, will have appropriate signage to the hazard (see appendix B). Signage needs will be reviewed annually.

In the interim, for any construction, demolition or other tasks where building materials may be disturbed in areas where there is the potential for ACM to exist, the area is to be presumed asbestos containing until sampling for asbestos proves otherwise. Service areas that are known to be asbestos containing will be marked with the appropriate signage.

5.3 Assessment and Classification

A risk assessment must be conducted on all identified ACM and maintained by the BCIT Asbestos Management Plan Administrator. This data will be entered into the BCIT Asbestos Management and Information Tool. Risk assessments must be performed by a qualified individual and must take into account the condition of the material, its friability, accessibility and likelihood of damage, or structures where asbestos may be disturbed.

Task specific hazard assessments must be performed by a qualified individual, as outlined by WorkSafeBC, prior to work taking place in any area where ACM exists or is suspected.

5.4 Control of Friable Asbestos

Per WorkSafeBC regulation 6.7, all friable ACM must be controlled by removal, enclosure or

encapsulation in order to prevent the release of airborne asbestos fibre. At BCIT all work with friable asbestos must be performed by contractors who have the necessary equipment, training and experience for working with asbestos as recognized by WorkSafeBC. Contractors must follow the guidelines laid out in this document, BCIT Safety Manual Contractor Safety Procedures (Part 2 Section 15) and all applicable regulations. More information on controlling exposures to asbestos can be found in the Asbestos Exposure Control Plan (appendix A).

BCIT employees will not perform any work that has been classified as a High Risk Work Activity. Employees must be fully trained, as outlined in section 5.8 of this document, and have all of the necessary equipment before they are able to perform any Low or Moderate Risk Work Activities.

5.5 Work Procedures

Written work procedures must be available for all work that involves handling or use of ACM in order to prevent, or minimize, the release of airborne asbestos fibers. Written procedures must provide the employees with task-specific work direction that addresses both the hazards observed in the risk assessment and the necessary controls outlined in the Exposure Control Plan (appendix A). These procedures must be in accordance with procedures acceptable to WorkSafeBC and consider work area containment, control of release of asbestos fibres, personal protective equipment (PPE), employee decontamination, the removal of asbestos containing waste, and cleanup.

Prior to any remediation work at BCIT the contractor must review the risk assessment. This risk assessment must be kept at the worksite for the duration of the remediation work. A NOPA must be completed and submitted to both the Asbestos Exposure Control Plan Administrator (by way of the BCIT Project Contact) and WorkSafeBC (see section 5.11) for review.

All remediation work must be as complete as practicable and shall, as a minimum, extend to a naturally occurring boundary.

In addition to the above, prior to any demolition or salvage of machinery, equipment, buildings or structures occurs at BCIT each site must be inspected to ensure that any asbestos has been identified. These inspection reports must indicate the location of any asbestos at the worksite and must be available on site for the duration of the work. If, during any demolition work at BCIT, previously unidentified asbestos is discovered all work must cease until the appropriate control measures can be implemented.

5.6 Prohibitions

1) ACM may not be brought into or used at BCIT.
2) Pressure spraying equipment must not be used to remove asbestos insulation or other ACM from buildings or structures.
3) Compressed air must not be used to clean up or remove asbestos-containing dust or debris, nor dry sweeping or dry mopping of asbestos-containing waste.

5.7 Substitution

ACM must be substituted for a less hazardous material whenever possible. When substitution is not practicable BCIT must document the reasons why it isn't practicable. This information will be entered into the BCIT Asbestos Management and Information Tool. The use of the BCIT Asbestos Management and Information Tool for this purpose will make this information available to workers and the Joint Occupational Health and Safety Committee as required by WorkSafeBC. In the interim, this information shall be maintained by the BCIT Asbestos Management Plan Administrator and made available upon request.

5.8 Instruction and Training

All BCIT employees, as part of their training and orientation, shall be trained on the hazards of asbestos and the means of identifying ACM at BCIT. As part of the initial orientation to BCIT, employees and students receive comprehensive training that outlines both the work that they may not perform (facilities work) and the steps to take if they ever encounter a circumstance where there is the potential for exposure to Asbestos. The use of the BCIT Asbestos Management and Information Tool will be integrated into the initial and ongoing training of BCIT employees as it is developed (see BCIT's Occupational Health and Safety Manual Part 2- Section 23 for more information regarding the Institute's Training and Orientation program).

Employees who are in areas or who perform work tasks that create a risk of exposure to asbestos (i.e. facilities) must be trained in the following five points:

1) the hazards of asbestos
2) the means of identifying ACM at BCIT
3) the work procedures to be followed
4) the correct use and decontamination of the required PPE, and operation of the required engineering controls
5) the purpose and significance of health monitoring

Training records must be maintained in the Dean/ Director's office with copies forwarded to the BCIT OHS Group.

BCIT employees are not permitted to perform any High Risk Work Activities.

5.9 Exposure Monitoring

The contractor (or project coordinator if alternate arrangements are made) must arrange air sampling for airborne asbestos fibres during any high risk work activities, when glove bags are not being used as the containment. This sampling must be performed in areas outside of the containment but in its vicinity, at least daily if there are unprotected workers in the area. Also, sampling must be performed in the clean room, at least daily during removal and cleanup operations and within the contaminated areas within the containment to ensure that employees are adequately protected. Air sampling is also mandatory prior to dismantling a containment used in any high risk work activity that did not rely on glove bag containments. Sampling locations and strategies must be included in the contractor work

plans and submitted to the BCIT Asbestos Exposure Control Plan Administrator and the BCIT Asbestos Management Plan Administrator for review prior to the commencement of any project that contains high risk work activities.

All sampling results must be provided to the BCIT Asbestos Exposure Control Plan Administrator and the BCIT Asbestos Management Plan Administrator (by way of the BCIT Project Coordinator). This data will be maintained by the BCIT Asbestos Management Plan Administrator and entered into the ACM database tool, once operational. Clearance sampling reports must be forwarded for review to the BCIT Asbestos Management Plan Administrator and the BCIT Exposure Control Plan Administrator by the BCIT Project Coordinator prior to BCIT employees being permitted to re-occupy the area. In addition, sampling results must be made available to the contractor's employees per WorkSafeBC regulations.

5.10 Health Monitoring

Health monitoring for asbestos requires supervisors, employees, instructors and students promptly reporting any suspected exposures or symptoms which can be linked to exposure to asbestos. These suspected exposures and symptoms shall be reported to BCIT First Aid and the Supervisor or Instructor(s) for further investigation.

Chronic exposure to asbestos may increase the risk of lung cancer, mesothelioma, and nonmalignant lung and pleural disorders. Shortness of breath is the primary symptom of health effects due to exposures to asbestos. Other symptoms include a persistent and productive cough, chest tightness, chest pain, loss of appetite, or a dry, crackling sound in the lungs while inhaling. Cigarette smoking greatly increases the likelihood of a person developing lung cancer as the result of asbestos exposure.

5.11 Notice of Project for Asbestos

A Notice of Project for Asbestos (NOPA) must be submitted to WorkSafeBC at least 24 hours before starting any project that involves the demolition or renovation of structures containing ACM. The prime contractor is responsible for submitting and posting the NOPA when performing these projects on BCIT property. A copy of the NOPA must be posted at the worksite and filed with the BCIT Project Contact, who submits it to the Asbestos Management Plan Administrator and the Asbestos Exposure Control Plan Administrator for review. The Asbestos Management Plan Administrator will ensure that the NOPA is uploaded into the BCIT Asbestos Management and Information Tool, once operational.

6. Documentation

All documentation that is related to training and instruction must be maintained for a minimum of 3 years as indicated in Part 2 Section 23 of the BCIT Safety Manual- Training and Orientation. Additionally, records of corrective actions to control asbestos fibre release, written work procedures and all written WorkSafeBC notifications must be maintained for a minimum of 3 years.

The BCIT Maintenance Department must maintain documentation of asbestos-containing materials inventories and risk assessments, inspections and air monitoring results for a minimum of 10 years.

7. Program Review

The Asbestos Management Program must be reviewed annually for the following:

- The capability of BCIT to disseminate the program to incoming contractors
- The effectiveness of the program as it applies to ensuring employees and contractors are not exposed to airborne asbestos fibres
- Document control

The annual review will be done in consultation with the Joint Occupational Health and Safety Committee.

Appendix A-
Exposure Control Plan

ASBESTOS EXPOSURE CONTROL PLAN

Purpose

This document describes the BCIT Asbestos Exposure Control Plan. This exposure control plan describes the methods that will be used to control the release of asbestos fibres, and thus minimize the potential for exposure to asbestos whenever asbestos related work is performed at BCIT. This control plan should be used whenever procedures for work on, or around, ACM is required as indicated in the BCIT Asbestos Management Plan.

Responsibilities

A list of all of the individuals with roles and responsibilities related to work on, or around ACM is given in the BCIT Asbestos Management Plan. The following is a list of the roles and responsibilities of the individual's specific to Asbestos Exposure Control.

Supervisors

Supervisors are required to ensure the health and safety of all workers under their direct supervision. This includes providing to employees the information, instruction, training and supervision necessary to ensure their health and safety in carrying out their work and to ensure the health and safety of others at the workplace. Supervisors must consult with the BCIT Asbestos Management Plan Administrator before assigning any work that has the potential to result in exposure to asbestos. As indicated in the BCIT Asbestos Management Plan, supervisors are responsible for the creation of task specific Safe Work Procedures and for having the safe work procedures reviewed by the BCIT Asbestos Management Plan Administrator and the BCIT Asbestos Exposure Control Plan Administrator prior to the commencement of work on, or around ACM.

In addition, if at any time, the supervisor suspects that ACM poses an exposure hazard to their employees or others they must cease work immediately and consult with the BCIT Asbestos Management Plan Administrator. Work must not recommence until a risk assessment has been performed and risks of exposure to asbestos have been mitigated.

Contractors/Prime Contractors

Contractors are responsible for ensuring the safety of their employees as indicated in BCIT Safety Manual Part 2 Section 15 – Contractor Safety. Contractors are required to consult with their BCIT Project Contact regarding the proximity to ACM at the worksite and the potential for asbestos exposures prior to commencement of any work at BCIT.

Contractors must submit work procedures to their BCIT Project Contact for review by the BCIT Asbestos Management Plan Administrator and the BCIT Asbestos Exposure Control Plan Administrator prior to the commencement of work on, or around ACM.

Contractors are responsible for any asbestos waste or waste that is contaminated with asbestos, including disposable protective clothing and equipment, that is a result of their work on BCIT

properties.
If, at any time during their work on BCIT property, the contractor suspects that ACM poses a hazard to their employees or others they must cease work immediately and consult with their BCIT Project Contact. Work must not recommence until a risk assessment has been performed and risks of exposure to asbestos have been mitigated.

BCIT Employees

BCIT employees must not carry out any work process or operate any tool, appliance or equipment if they have any reasonable cause to believe that to do so would create the potential for exposure to asbestos. BCIT employees must consult with the BCIT Asbestos Management Plan Administrator for any work that could potentially lead to asbestos exposure.

In all instances of suspected exposure to asbestos BCIT employees must cease work and immediately report the incident to their supervisor and BCIT First Aid.

BCIT Asbestos Management Plan Administrator

The BCIT Asbestos Management Plan Administrator's responsibilities, in relation to exposure control, are:

- Coordinate all asbestos related work with the BCIT Asbestos Exposure Control Plan Administrator
- Inspect work sites for final condition
- Maintain asbestos related labeling and documentation

BCIT Asbestos Exposure Control Plan Administrator

The BCIT Exposure Control Plan Administrator is responsible for acting as a resource in the creation of work procedures for ACM related work projects that involve BCIT personnel and for reviewing contractor work plans and procedures for projects on or around ACM. These responsibilities specifically include:

- Attend pre-construction meetings to identify potential sources of adverse impact on adjacent area occupants and potential problems
- Act as a resource on all areas relating to the Asbestos Exposure Control Plan
- Review work plans and procedures that involve BCIT employees working on, or in proximity to asbestos abatement and repair projects
- Review contractor work plans and procedures for work on, or in close proximity to asbestos abatement and repair projects
- Review air sampling results for airborne asbestos
- Submit an annual report to the Joint Occupational Health & Safety Committees and the Director of Safety, Security and Emergency Management
- Annual review of the Asbestos Exposure Control Plan

Risk Identification

For any construction, demolition or other tasks where building materials may be disturbed in areas where there is the potential for ACM to exist, the area is to be presumed asbestos containing until sampling for asbestos proves otherwise. The BCIT Asbestos Management Plan Administrator will ensure that environmental sampling is performed in all of these areas prior to work commencing.

Areas that are known to be asbestos containing will be marked with the appropriate signage.

Risk Assessment

Before any work in an area where ACM exists the work activity must be assessed and classified as a low, moderate or high risk activity. This task-specific hazard assessment will be completed by a qualified person, hired either by the BCIT Asbestos Management Plan Administrator or the contractor.

Risk Control

Asbestos has been classified as an ALARA substance, for which exposures must be kept as low as reasonably achievable.

The WorkSafeBC Safe Work Practices for Handling Asbestos booklet outlines a variety of appropriate controls to prevent asbestos exposure when working in areas where ACM exists. The information found in the WorkSafeBC booklet should be used as a resource for supervisors when creating work procedures for work on, or around ACM.

The following control measures must be used to eliminate or minimize the risk of exposure to asbestos for BCIT employees, students, contractors and visitors. The use of control measures should be prioritized with Elimination and Substitution being the best control, then Engineering Controls and Administrative Controls. Personal Protective Equipment should be used in situations where other controls are not practicable or where the other controls are not adequate in eliminating concerns of exposure to asbestos.

ACM must be substituted for a less hazardous material whenever possible as outlined in the BCIT Asbestos Management Program. In addition, ACM may not be brought into or used at BCIT.

Education and Training

All BCIT employees, as part of their training and orientation, shall be trained on the hazards of asbestos and the means of identifying ACM at BCIT. As part of the initial orientation to BCIT, employees and students receive comprehensive training that outlines both the work that they may not perform (facilities work) and he steps to take if they ever encounter a circumstance where there is the potential for exposure to Asbestos. The use of the BCIT Asbestos Management and Information Tool will be integrated into the initial and ongoing training of BCIT employees as it is developed (see BCIT's Occupational Health and Safety Manual Part 2- Section 23 for more information regarding the Institute's Training and Orientation program).

Employees who are in areas or who perform work tasks that create a risk of exposure to asbestos (i.e. facilities) must be trained in the following 5 points:

1) the hazards of asbestos
2) the means of identifying ACM at BCIT
3) the work procedures to be followed
4) the correct use and decontamination of the required PPE, and operation of the required engineering controls
5) the purpose and significance of health monitoring

Training records must be maintained in the Dean/ Director's office with copies forwarded to the BCITOHS Group.

BCIT employees are not permitted to perform any High Risk Work Activities.

Work Procedures

Written work procedures must be available for all work that involves handling or use of ACM in order to prevent or minimize the release of airborne asbestos fibres. Written procedures must provide the employees with task-specific work direction that addresses both the hazards observed in the risk assessment and the necessary controls. These procedures must be in accordance with procedures acceptable to WorkSafeBC and consider work area containment, control of release of asbestos fibre, PPE, employee decontamination, and the removal of asbestos containing waste and cleanup. Work procedures must be submitted to the BCIT Asbestos Management Plan Administrator and BCIT Asbestos Exposure Control Plan Administrator for review prior to the commencement of any work on, or around ACM. The following elements must be included in the written work procedures:

Designated Work Areas and Containments

Designated work areas and containments need to be used when the risk assessment classifies the work as moderate or high risk. It is the responsibility of the contractor who has been hired to perform the work to identify and mark the boundary of the designated work area by barricades, fences, or similar means and to install containments and decontamination areas as required by WorkSafeBC regulation (section 6.13-6.16). In addition, it is the responsibility of the contractor to inspect and maintain the containment to WorkSafeBC standards.

Ventilation

Contractors are responsible for ensuring that containments are ventilated, that a negative pressure atmosphere is maintained and that HEPA filters are used, tested and replaced in accordance with WorkSafeBC regulations and manufacturer's instructions.

Other Means of Controlling Exposure to Asbestos

Written work procedures must be created that outline the use of specific control measures that mitigate the release of asbestos fibres when working on, or around ACM.

The following is a list of several other means of controlling exposure to asbestos (more information

can be found in the WorkSafeBC booklet – Safe Work Practices for Handling Asbestos):

- Saturate asbestos-containing materials with water before handling or removing them. Surfactants must be used with the water to help thoroughly wet ACM.
- Use water to continually mist the air near workers who are removing asbestos or cleaning up waste materials.
- Clean all surfaces exposed to asbestos contamination by vacuuming or damp-wiping.
- Do not use dry sweeping or compressed air to clean up ACM.
- When cleaning up small amounts of ACM, use only vacuum cleaners equipped with a HEPA-filtered exhaust, or wet-mop or wipe the materials. Large amounts of ACM inside an asbestos containment can be shoveled into labeled bags.
- Equipment is inspected before being used in the work process
- After removing ACM, wash or vacuum exposed surfaces and treat with a sealant or glue designed to seal invisible residual fibres to the substrate.
- If asbestos is encapsulated, test encapsulated asbestos materials to ensure that the encapsulant has penetrated the materials and that the encapsulant has not disturbed the bond between the friable asbestos materials and their supporting surface.

Personal Protective Clothing and Equipment

Personal protective equipment (PPE) must be selected that is appropriate for the level of risk of the work being performed. The use, care and limitations of PPE must be included in the written safe work procedures for any work on, or around ACM at BCIT. Single use respirators must not be used for protection against asbestos; protective clothing must be resistant to penetration by asbestos; and PPE must be removed, cleaned with damp cloth or vacuum-cleaner with HEPA-filtered exhaust before leaving the designated work area.

Decontamination of Workers

Contractor procedures must have written decontamination procedures for the provision and use of hygiene facilities and decontamination procedures whenever they perform moderate or high risk work with asbestos on BCIT property.

Waste Handling and Disposal

All asbestos waste and other waste contaminated with asbestos, including disposable protective clothing and equipment must be placed into sealed containers and labeled as containing asbestos. This must be performed in the designated work area.

The containers must be cleaned with a damp cloth or vacuum-cleaner with a HEPA-filtered exhaust prior to removal from the designated work area. Once sealed and cleaned, the asbestos waste must be disposed of promptly at an authorized landfill.

Health Monitoring

Health monitoring for asbestos requires supervisors, employees, instructors and students promptly

reporting any symptoms which can be linked to exposure to asbestos. These symptoms shall be reported to BCIT First Aid and their Supervisor or Instructor(s) for further investigation.

Chronic exposure to asbestos may increase the risk of lung cancer, mesothelioma, and nonmalignant lung and pleural disorders. Shortness of breath is the primary symptom of health effects due to exposures to asbestos. Other symptoms include a persistent and productive cough, chest tightness, chest pain, loss of appetite, or a dry, crackling sound in the lungs while inhaling. Cigarette smoking greatly increases the likelihood of a person developing lung cancer as the result of asbestos exposure.

Documentation

All documentation that is related to the training, instruction and written work procedures must be maintained for a minimum of 3 years. Records of ACM inventories and risk assessments, inspections and air monitoring results must be maintained for at least 10 years.

Document Review

The BCIT Asbestos Exposure Control Plan must be reviewed annually.

Appendix B-
Labeling

Asbestos Labeling for Service Areas

The following label will be permanently affixed to the Entry Point for any service area that contains ACM that has been assessed as either moderate or high risk. The approximate dimensions of this label are 19cm x 28cm (7.5” x 11”).

CAUTION

THIS SPACE CONTAINS

ASBESTOS

YOU MUST REFER TO THE ACM DATABASE TOOL PRIOR TO ENTRY INTO THIS SPACE

Contact BCIT Facilities at 604 432 - 8777 for instructions

The following label will be attached to all asbestos containing structures (i.e. pipe fittings, pipe elbows, etc.) using a zap-strap. The approximate dimensions of this label are 2cm x 8cm (1” x 3”).