

ASBESTOS MANAGEMENT PROGRAM

**FOR PROPERTIES UNDER THE
CONTROL, OCCUPANCY OR ADMINISTRATION
OF ACADIA UNIVERSITY
WOLFVILLE, NOVA SCOTIA**

Prepared for:

ACADIA UNIVERSITY

Environmental Health & Safety
15 University Avenue
Wolfville, Nova Scotia
B4P 2R6

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Issue 01

After 10 Amendments have been made to the Asbestos Management Program it is the responsibility of the Appeal Manager to re-issue the document.

Amendment	Date	Description

Reviewed By: _____

Approved By: _____

ASBESTOS MANAGEMENT PROGRAM INTRODUCTION & OBJECTIVES

Introduction

When asbestos has been identified as being present in a building, it is often not technically feasible, necessary or cost effective to remove all of it. In fact, in the absence of any renovation, maintenance or demolition work that has the potential for disrupting any asbestos, most owners elect to manage their asbestos in-place.

In such instances, it is essential that management develops a program whereby the essential resources, work procedures and training are implemented, and in such a fashion, as to effect the control of all activities that may lead to the uncontrolled disturbance of asbestos.

With this in mind, Acadia University commissioned Pinchin LeBlanc Environmental Ltd. to develop the following Asbestos Management Program (AMP) document in consultation with its Safety & Health Committee so as to ensure a safe workplace is maintained for all employees, students, visiting public, maintenance staff and physical plant maintenance staff, and contract workers.

Program Objectives

In order that a uniformed approach to the control and management of asbestos-containing materials (ACM) throughout all Acadia University owned or occupied facilities may be developed, the following program objectives have been established:

1. The program shall clearly establish management's intent to control the disturbance of any asbestos-containing materials, which remain present in the buildings owned or occupied by Acadia University.
2. The program shall provide the criteria in which all asbestos-containing materials are to be identified and evaluated within the buildings and shall establish the means in which this information is to be passed on to all affected parties (i.e. management, planning staff, maintenance or custodial workers, outside contractors, etc.).
3. The program shall establish the need and mannerism in which the necessary training and education of all staff, maintenance or custodial workers or outside contractors shall be handled.
4. The program shall contain the necessary work practices and procedures to conduct low to moderate risk asbestos work (i.e. Type 1, 2 or Glove Bag Removal) in a safe manner.
5. Initiate the implementation of an Operations & Maintenance Program to address the following:
 - a) Repair and/or removal (as required) of any ACM identified as being in disrepair.
 - b) Maintain all remaining ACM in good condition.
 - c) Minimize future fibre releases by controlling activities that may disturb asbestos.
 - d) Inspection and monitoring of all scheduled asbestos disturbances.

ASBESTOS MANAGEMENT PROGRAM DOCUMENT SUMMARY & SCOPE

The following document provides information, procedures and work practices relevant to the management and control of asbestos-containing building materials known to be present throughout Acadia University facilities (owned and leased).

The AMP document is designed to be a dynamic document, one that will require occasional updating as conditions within the building and/or regulatory requirement change. It takes into consideration all existing regulations and/or guidelines pursuant to the removal or management of asbestos in effect as of July, 2007.

The AMP document relies heavily on an accurate and current survey of the ACM present in the buildings. This AMP is based on previous survey information that in some cases may be out of date; however Acadia University realizes the importance of an AMP solely due to the presence of ACM. As a result of this, some elements of the AMP will not be presented in extensive detail until the survey information for the ACM is updated.

It includes work procedures for the completion of Type 1, 2 or Glove Bag remedial work (Low to Moderate Risk). With this in mind, the document has been prepared to allow individual sections appropriate to certain work to be separated and provided to the worker or contractor performing the work.

This document excludes any information or procedures related to Type 3 (major or large scale work) asbestos removal whether brought about by deterioration or by planned renovations or capital maintenance work. Such projects are very site specific and will require documentation prepared for the specific scope, phasing and operational requirements of each project.

DEFINITIONS

Airlock: Temporary chamber constructed at the perimeter of an Asbestos Work Area to permit the ingress or egress of workers, materials and equipment without permitting air movement through to non-contaminated areas.

Amended Water: Water with wetting agent added for the purpose of reducing surface tension to allow thorough wetting of asbestos-containing material.

Asbestos: From the Greek adjective meaning inextinguishable – is the general name given to a fibrous form of mineral silicates belonging to the serpentine or amphibole groups of rock-forming minerals including, but not limited to chrysotile, amosite, crocidolite, tremolite, anthophyllite and actinolite.

Asbestos Abatement: The process of reducing or eliminating the presence or exposure to asbestos through an act of its removal, encapsulation, repair or enclosure.

Asbestos-Containing Materials (ACM): Any material or substance found to contain 1% or greater content of asbestos as determined by Polarized Light Microscopy following codes or method specified by authority having jurisdiction.

Asbestosis: A chronic, restrictive lung disease due to the inhalation of asbestos fibres.

Asbestos Work Area: Any area where work takes place that will, or may, disturb asbestos.

Curtained Doorway: Doorway consisting of two overlapping flaps of rip-proof polyethylene arranged to permit ingress and egress from one room to another while permitting minimal air movement between rooms.

Decontaminate: To remove all asbestos-containing materials using approved removal methods, leaving the work area clean and free of visible and/or airborne asbestos fibres.

DOP Test: A testing method used to determine the integrity of the Negative Pressure unit or vacuum using dioctyl phthalate (DOP) HEPA filter leak test or equivalent.

Encapsulate: Method of controlling the release of asbestos fibres by application of a liquid sealant over the asbestos-containing material.

Enclosure: An airtight, impermeable, permanent barrier around ACM installed to reduce or prevent the release of asbestos fibres into the air.

Fibrous Aerosol Monitor (FAM): A device used to conduct measurements of airborne fibre concentration such as a GCA Corporation Fibrous Aerosol Monitor. Airborne fibres are detected by the scattering of laser light by suspended particles drawn through a fibre sensing zone. The device does not differentiate between fibre types.

Fitting: Individual segments or pieces of a mechanical service line which may include but is not limited to the hangers, tees, elbows, joints, valves, unions, etc..

Friable Material: Any material that when dry can be crumbled, pulverized or powdered by hand or moderate pressure. Includes materials that are already in a state of being crumbled, pulverized or powdered.

DEFINITIONS

(Cont'd)

Glove Bag: Prefabricated bag which provides a completely sealed envelope surrounding a given section of piping to permit the removal of asbestos-containing insulation from within the bag while maintaining the integrity of the bag and preventing the spread of airborne asbestos fibres.

HEPA Filter: High Efficiency Particulate Absolute air filters capable of collecting and retaining fibres greater than 0.3 microns in length at 99.97% efficiency. Utilized for vacuum equipment, respiratory protection, and localized air exhaust systems.

Mesothelioma: A rare but malignant form of cancer affecting the lining of the chest or abdominal cavity.

NIOSH: “National Institute for Occupational Safety and Health”.

Negative Pressure: A reduced pressure within the Asbestos Work Area (≥ 0.04 in.) established by extracting air directly from Asbestos Work Area and discharging it to the exterior of building. Volume of air extracted must be sufficient to ensure that at all times, air movement flows into the Asbestos Work Area as determined by visual or smoke testing to the satisfaction of the Asbestos Programs Officer.

Non-Friable Material: Any material that when dry can not be crumbled, pulverized or powdered by hand or moderate pressure. Including but not limited to the following ACM; vinyl tiles, asbestos cement tiles, gaskets, seals, select packings, friction products, drywall joint compound and asbestos cement products.

Operations and Maintenance Program (O & M Program): A program of work practices and procedures implemented to maintain known asbestos-containing materials in good condition, ensure the clean-up of asbestos fibres previously released and prevent further release by minimizing and controlling the disturbance of any asbestos materials subject to disturbance or damage.

Pipewrap: Any thermal or vapour covering present on straight runs and/or fittings of mechanical services. Include with the above, metal or other rigid jacketing associated straps, ties, fastenings, etc..

Phase Contrast Microscopy (PCM): Air sampling procedure and analysis routinely performed following the optical method specified by government regulations for the determination of airborne asbestos in occupational settings such as during or post asbestos removals. Analysis procedure does not differentiate between fibres collected.

Sealant (Encapsulant): A liquid which can be applied over asbestos-containing material to control the release of asbestos fibres.

Transite: A cementitious asbestos-containing board that is normally flat or corrugated.

Transmission Electron Microscopy (TEM): Similar air sampling collection method to PCM sampling however all particles identified under the microscope are positively identified using electron diffraction patterns. This analysis procedure is costly and requires more analysis time when compared to PCM sampling although it is the preferred air sampling method for exposure assessment.

SECTION 1 - BACKGROUND ON ASBESTOS

1.1 Occurrence and Types of Asbestos

Asbestos is not one mineral but a generic term used to describe a family of naturally occurring fibrous hydrated silicates. These are divided on the basis of mineralogical features into two groups; serpentines and amphiboles. The important property of asbestos as compared to non-asbestiform varieties of silicates is the presence of mineralogical long, thin fibres that can be easily separated. According to some definitions, there are as many as thirty varieties of asbestos, but only six are of commercial importance. Chrysotile, which is by far the most abundant, is the only type that belongs to the serpentine group. Crocidolite and amosite, the two other most commonly used fibres, together with anthophyllite, tremolite, and actinolite which all belong to the amphibole group. The distinction between asbestos types is important due to the different degrees of severity of asbestos-related disease with different asbestos types. Of the three commercially important types (chrysotile, amosite and crocidolite), chrysotile is considered the least hazardous and crocidolite the most hazardous.

1.2 Health Effects of Asbestos

For many years asbestos has been recognized as a health hazard for workers employed in asbestos production, processing and use. Several serious, debilitating diseases that often end in death have been linked to the inhalation of fine asbestos fibres. It is not clear how asbestos fibres cause disease after they enter the lung. For each disease there is a period of latency, usually more than ten years, between first exposure to asbestos and the appearance of the disease. Each of the more common diseases linked to asbestos exposure are described below.

Asbestosis: Asbestosis is characterized by a fibrosis (scarring) of the lung tissue, which makes breathing difficult. The most prominent symptom is breathlessness. Detection of asbestosis is possible by X-ray examination and lung function testing. However, the disease is irreversible and will continue to progress even after exposure is stopped. Rarely a cause of death itself, asbestosis results in an appreciable reduction in life expectancy due to deaths from related illnesses. Asbestosis will develop only with chronic exposure to high levels of airborne asbestos.

Mesothelioma: This is a rare cancer arising from the cells of the pleura (lining of the chest cavity and lungs) and the peritoneum (lining of the abdominal cavity). The development of mesothelioma is characterized by a long latency period, usually at least 15 years and sometimes more than 40. There is no effective treatment for mesothelioma. Large proportions of mesothelioma patients die within a year of diagnosis; few survive longer than five years. Although asbestos was once thought

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to be responsible for all mesothelioma, other causes have now been identified. Still, the chance of getting mesothelioma in the absence of asbestos exposure is considered to be extremely remote.

Lung Cancer: Unlike asbestosis and mesothelioma, lung cancer is not associated only with asbestos exposure. Furthermore, there is no basic difference between lung cancer caused by asbestos and that due to other causes. In general, the risk of getting lung cancer increases with the extent of asbestos exposure, in terms of both intensity and duration. This risk is also greatly enhanced by smoking; most asbestos workers who develop lung cancer are smokers.

Other Asbestos-Related Cancers: The relationship between asbestos exposure and asbestosis, mesothelioma and lung cancer has been clearly established and is beyond argument. Several other cancers have also been associated with the inhalation of asbestos. Although the evidence is not as good as for the diseases discussed above, these cancers should be noted. They are: gastrointestinal cancer affecting all sites in the gastrointestinal tract (oesophagus, stomach, colon and rectum) and cancer of the larynx.

Other Asbestos-Related Conditions: A number of less serious effects have been associated with asbestos exposure, namely pleural plaques and asbestos warts. Pleural plaques are areas of scarring of the pleural surfaces. In general, they are not associated with any functional abnormality and are merely an indicator of asbestos exposure. Asbestos warts are harmless skin growths that occur when asbestos fibres penetrate the skin.

1.3 Uses of Asbestos in Buildings

Asbestos has been widely used in buildings and some uses continue today. The uses of asbestos are generally classed into two groups; friable and non-friable products. A friable material is a material that when dry can be crumbled, pulverized or powdered by hand pressure. The use of friable materials in construction is banned today but due to the widespread use of friable materials in the past, these materials still are present in many buildings. In order to establish an effective control program, the possible uses of asbestos must be known. These are discussed below in the categories of non-friable and friable products.

1.3.1 Non-Friable Asbestos Materials

Asbestos-cement Products

The largest use of asbestos, in terms of the tonnage of fibres employed, is as a reinforcing agent in cement products. Asbestos-reinforced cement is strong, durable, rigid and resistant to both fire and weather. Portland cement, water and asbestos are mixed to form a slurry from which end-products

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can be fabricated by a process similar to that used in paper making. Such products can then be formed into sheets, pipes and a wide variety of other shapes. The asbestos fibre content of asbestos cement products is usually about 15 percent.

Asbestos-cement sheeting is produced that comes in four basic forms: flat sheets, corrugated sheets, siding shingles or roofing shingles. The main use of asbestos cement sheeting is for roofing and for cladding the exterior of buildings.

Other uses are decorative panelling, electrical insulation and laboratory tabletops. Asbestos-cement piping is used for water supply, sewage, irrigation, drainage applications, the transport of corrosive chemical fluids, and electric and telephone conduits. Asbestos cement products are still in use and production today.

Gaskets and Packings

The combination of long asbestos fibres and high temperature rubbers has provided some of the best gasket materials ever produced. The asbestos, in bulk fibre, woven, or plaited form, provides strength and temperature resistance, while the rubber acts as a binder and sealing material. Asbestos yarns have been commonly used in the manufacture of braided and woven packing materials. Many of these uses, particularly in sheet forms are still in production and use today.

Coatings and Sealants

Asbestos has been used in roof coatings, cements and to a lesser extent, in sealants and caulks. Roof coatings consist of asphalt that has been liquefied with solvents then has had asbestos fibre added as a filler. Roof cements are similar, but they are formulated to a thicker consistency so that they can be used to seal openings through which a liquid coating would flow. Some of these are still in production today.

Paper Products

Asbestos paper products are used in a wide variety of applications. Among the most important in construction are roofing felts, gaskets, pipeline wrap, millboard and electrical insulation. Some of these applications are discussed under the headings "Insulation" and "Gaskets and Packings". Some uses (particularly where impregnated with tar or asphalt for roofing and pipeline wrap) are still in production today.

Plastics

Asbestos has been used as a reinforcing agent in a wide range of asbestos/polymer composites. Applications include brake and transmission components, floor tiles, engine housings, bins and containers, and a variety of coatings, adhesives, caulks, sealants and patching compounds. Two areas have dominated asbestos use in plastics: phenolic moulding compounds and vinyl-asbestos tile. Few of these products remain in production today.

Friction Materials

Asbestos has been used in the manufacture of brake and clutch linings and pads. The asbestos fibres may be embedded in a phenolic resin with various mixtures of fillers or a woven asbestos cloth may be impregnated with the resin. Friction products are primarily used in vehicles but may be used in any rotating machinery. They are still widely produced and used.

Asbestos Textiles

Asbestos textile materials are predominantly manufactured from chrysotile fibres. Two types of yam are produced: plain, possibly braced with organic fibres, and reinforced, which incorporates either wire or another yam such as nylon, cotton or polyester. Major uses for asbestos textiles are gaskets, packings, friction materials, thermal and electrical insulation, and fire resistant applications, e.g. welding curtains, protective clothing, theatre curtains, hot conveyor belts and ironing board covers. These products may be considered or become friable in use. Asbestos textiles are no longer in widespread production.

1.3.2 Friable Asbestos Materials

These products are the main concern of the public and most asbestos management programs due to the ease of fibre release. None of the products are still in production.

Spray or Trowel Applied Fireproofing or Sprayed Insulation

Several types of fireproofing or insulation were used in the period encompassing the mid 1930's through to about 1974. Fibrous products were spray applied after being blown as a dry mix through an application gun. These products may contain up to 90% asbestos and any of the three major types (chrysotile, amosite or crocidolite). Cementitious products were trowel applied or sprayed as a wet slurry. These were harder products which did not contain more than 25% asbestos. Only chrysotile asbestos was used in the cementitious type materials.

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Sprayed or Trowel Applied Texture or Acoustic Plasters

The use of asbestos was widespread in trowel applied or sprayed texture coats, stipple coats or acoustic plasters commencing in the 1950's through to the late 1970's (at least as late as 1977). These products always contained less than 25% chrysotile. Some of these products may be considered non-friable in place and only become friable when disturbed by construction or demolition. Other products in this group can be very soft and extremely friable.

Mechanical System Insulation

This is the most widespread use of friable asbestos in buildings. Their use dates from the late 1800's to the late 1970's. The material can have a number of appearances and asbestos contents.

- white, brown, pink or grey block
- white or grey corrugated paper
- white, grey or brown layered paper
- grey trowel or hand applied material (with the appearance of hard grey dry mud)

It is possible to find all asbestos types in mechanical insulation although chrysotile is predominant and amosite the next most common.

1.4 Hazard of Asbestos in Buildings

Beginning in the late 1970's, public health authorities, the media, and the public in general, became concerned about the health effect of asbestos materials on building occupants. It was known that asbestos miners and factory workers and installers who handled asbestos materials suffered a higher incidence of several respiratory diseases. These groups had been exposed to very high levels of asbestos dust for prolonged periods. In order to determine whether the public anxiety over the current situation of asbestos materials "in place" in buildings was justified, the Ontario Royal Commission on Matters of Health and Safety Arising from the Use of Asbestos in Ontario was established in 1981. This three (3) year study considered all aspects of the asbestos problem. After considering all available data, the Commission concluded in its final report (Chapter 9, Page 585) that:

"...The risk to occupants from asbestos in buildings is a small fraction of the risks faced by workers exposed to asbestos under the 1 f/cc control limit for chrysotile (the current exposure limit for industrial asbestos use in Ontario). It is less than 1/50 as great as the risk of commuting by car to and from those buildings. In concluding that this risk is insignificant, we conclude that the risk does not present a public health problem. While

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asbestos has caused serious health problems for workers and may present a problem for building maintenance, renovation, construction, and demolition workers, we conclude that it does not pose a significant problem for the general occupants of a buildings, except in the three situations outlined in Section D of this chapter, namely: (i) the occupant is in the immediate vicinity of work that disturbs friable asbestos-containing insulation; (ii) the occupant is within the range of air circulation of work that disturbs friable asbestos-containing insulation; or (iii) significant quantities of friable asbestos-containing insulation have fallen onto building surfaces and are being disturbed."

and in the overview to this section (Chapter 9, page 548):

"We will conclude that it is rarely necessary to take corrective action in buildings containing asbestos insulation in order to protect the general occupants of those buildings. On the other hand, construction, demolition, renovation, maintenance, and custodial workers in asbestos-containing buildings may be exposed to significant fibre levels and may, during their work, cause elevated fibre levels for nearby occupants."

The general conclusions of the Royal Commission have been supported by independent testing by independent researchers, the Ontario Ministry of Labour, and authorities in other jurisdictions. Air sampling has shown that the airborne asbestos levels in buildings with sprayed asbestos are no higher than outdoor levels, unless the friable asbestos or asbestos debris is being disturbed at the time. Airborne levels in buildings are not elevated even when the ceiling space containing the sprayed asbestos or asbestos mechanical insulation functions as an air plenum. The following Asbestos Management Program document has therefore been modelled to be in line with the conclusions of the Royal Commission and applicable provincial regulations which have been adopted based on a review on this model.

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SECTION 2 - ELEMENTS OF THE ASBESTOS MANAGEMENT PROGRAM

The maintenance of a safe work environment for all Acadia University employees, students, visiting public, maintenance or renovation workers, depends on the establishment of an effective management program. The AMP for Acadia University incorporates the following measures to ensure the safe and proper control of all suspect or confirmed ACM.

1. The development of a **WRITTEN PLAN**.
2. Provide for the **APPOINTMENT OF AN ASBESTOS PROGRAMS OFFICER(S) (APO)** whose responsibilities shall include the implementation and enforcement of the Asbestos Management Program.
3. Establish **PARAMETERS FOR THE EVALUATION** of all suspect or confirmed ACM.
4. Create or otherwise establish an **INVENTORY** of all suspect or confirmed ACM.
5. Establish procedures for the **NOTIFICATION** of all facility staff, custodial or physical plant maintenance staff, outside contractors, building tenants (if applicable), etc. whose work will or may result in the disturbance of any suspect or confirmed ACM.
6. Provide policy pertaining to the on-site **IDENTIFICATION** (labelling) of ACM.
7. Establish **TRAINING** protocol for all employees of Acadia University and any other personnel (i.e. outside contractors, maintenance or renovation workers) required to work on or near any ACM or whose activities in the building may result in the disturbance of asbestos.
8. Establish policy pursuant to the periodic **SURVEILLANCE** and re-evaluation of all materials known to contain asbestos.
9. Develop **SPECIAL WORK PROCEDURES** for the repair, clean-up or removal of minor amounts of ACM during routine maintenance, minor renovations or demolition.
10. Give special consideration to the **PRO-ACTIVE REMOVAL** of asbestos during any renovation or demolition work performed on or near any known or suspect ACM. Such activities are normally performed by an outside contracting firm who specializes in asbestos work and will require the preparation of site-specific contract documents.
11. Initiate the **REMOVAL AND/OR REPAIR** of any asbestos-containing material which have been damaged and/or are otherwise in disrepair.

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12. **MINIMIZE FUTURE FIBRE RELEASES** by controlling activities that may disturb asbestos and ensuring all affected ACM is removed prior to any major renovations, maintenance or demolition work.
13. Provide for the **SCHEDULED RE-ASSESSMENT & UPDATING** of the AMP document itself to ensure it remains a current and viable document.
14. Establish a policy to ensure the **INDEPENDENT INSPECTION AND MONITORING** of all asbestos-related disturbances, whether undertaken internally or through the assistance of an outside contractor, to ensure compliance with the requirements of the AMP document and governing authorities.

Each of the above elements are discussed at length under the following sections and/or appendices and have been formulated so as to meet or exceed the requirements of current regulations and guidelines specific to asbestos control and management as of the issuance date.

SECTION 3 - RESPONSIBILITIES UNDER THE AMP

The following sections are intended to provide the reader with insight into the internal workings and responsibilities assigned to various entities under Acadia University's Asbestos Management Program. As the primary entity responsible for health & safety issues at all University owned or occupied premises, Acadia University's Management, and its duly appointed officers, shall have final authority over all matters pertaining to the control and management of asbestos or suspect asbestos-containing materials throughout the University at large.

3.1 Responsibilities Assigned to Management

The following tasks and/or duties shall be assigned to Acadia University's Management.

1. Oversee the appointment of an Asbestos Programs Officer (APO) or Officers as required to meet the individual responsibilities assigned to him/her under Section 3.2 below and the collective needs of Acadia University at large.
2. Coordinate the efforts of the APO (or APOs) to ensure a unified approach to the control and management of asbestos is both achieved and maintained throughout Acadia University at large.
3. Oversee all training programs. Where practical, such training sessions may be coordinated through an outside asbestos consulting firm to ensure a uniform approach to the control and management of asbestos is maintained.
4. Commission or otherwise undertake a self-examination of the Asbestos Management Program, once every second year, to measure the effectiveness of the program, the need for additional training, and/or any modifications to the program itself.
5. Provide each APO with the necessary technical support and resources necessary to effectively manage and execute his/her duties assigned under Acadia University's AMP.
6. Maintain a centralized record of all documentation required by the AMP and all other relevant information pertaining to the control and administration of asbestos throughout Acadia University at large.
7. In addition to the above referenced originals or hard copies, an electronic copy of Acadia University's AMP document shall be accessible for viewing via the University's Intranet.

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8. Engage, as required from time-to-time, the services of an outside asbestos consulting firm to assist each APO with the following duties:
- a) Respond to any report of asbestos debris, damage or disturbance. Evaluate conditions encountered and initiate the necessary clean-up, removal or repair as appropriate;
 - b) Assist in the review of all maintenance, renovation or construction activities that will or may result in the disturbance of any known or suspect asbestos-containing materials;
 - c) Assist in the identification and evaluation of any suspect asbestos-containing materials rendered accessible as a result of both scheduled and unscheduled maintenance, renovations or construction activities.
 - d) Provide random site inspection and air monitoring services to be performed as part of any scheduled asbestos disturbances undertaken internally by Acadia University's contracted physical plant maintenance staff.
 - e) Provide awareness and/or procedural training for all Acadia University staff whose job requires them to work on or near known or suspect asbestos-containing materials.
 - f) Assist in the completion of a detailed and comprehensive Asbestos Inventory of all buildings suspect of containing asbestos-containing building materials. Include within the above scope any future acquisitions.
 - g) Assist in the labelling of all known or suspect asbestos-containing materials in a manner consistent with the requirements set out in *Appendix T*.
 - h) Assist in the regular review and evaluation of all remaining asbestos-containing materials once every second year or more frequently as circumstances warrant.

Only those firms having an establish reputation for excellence in the field of asbestos consulting and management shall be considered for work at any property under the control, occupancy, or administration of Acadia University. In addition, such firms must also be able to demonstrate compliance with the quality control and assurance standards set out in *Appendix V*.

3.2 Asbestos Programs Officer

The following tasks and/or duties shall be assigned to each Asbestos Programs Officer (APO). Such responsibilities are necessarily limited in scope to the specific building or buildings for which he/she has been assigned.

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1. Be responsible for the administration, maintenance and enforcement of Acadia University's AMP.
2. Maintain a centralized record of all documentation required by the AMP and all other relevant information pertaining to the control and administration of asbestos.
3. Respond to any report of asbestos debris, damage or disturbance. Evaluate conditions encountered and initiate the necessary clean-up, removal or repair as appropriate.
4. Assist individual designers, managers or project coordinators with the evaluation of any maintenance, renovation or construction activities that will, or may result in the disturbance of any suspect or confirmed asbestos-containing building materials.
5. Assist individual designers, managers or project coordinators with the identification and evaluation of any suspect asbestos-containing materials rendered accessible as a result of both scheduled and unscheduled maintenance, renovations or construction activities.
6. Review all "Asbestos Work Requisitions/Permits" to ensure the individual manager or project coordinator in charge of the work has assigned the appropriate risk classification (ie. Low, Moderate or High).
7. Provide final approval of all "Asbestos Work Requisitions/Permits" forwarded to his/her attention by the individual manager or project coordinator assigned to the work.
8. Conduct and/or otherwise allocate to an outside asbestos consulting firm (i.e. Designated Inspection Agency) the task of providing random site inspections and air monitoring services during all scheduled asbestos disturbances undertaken internally by Acadia University's physical plant maintenance staff. Such services shall be provided at a frequency to ensure compliance with existing regulations and corporate policy as set forth under Section 9 of the AMP document.
9. Ensure a copy of all site inspection reports and corresponding air monitoring data is forwarded to the individual manager or project coordinator assigned to the work on a next day basis.

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10. Evaluate on an annual basis or more frequently as required, and in consultation with all managers and/or department heads, the need to hold refresher training for any recently employed workers or staff whose job requires them to work on or near known or suspect asbestos-containing materials.
11. Commission or otherwise undertake to provide awareness and/or procedural training for all Acadia University staff whose job requires them to work on or near known or suspect asbestos-containing materials.
12. Commission or otherwise complete a detailed and comprehensive Asbestos Inventory of all buildings suspect of containing asbestos-containing building materials. Include within the above scope any future acquisitions.
13. Arrange for an original or hard copy of all initial Asbestos Surveys and any subsequent Asbestos Surveys or Updates to be held on file at the following locations:
 - ❑ *Project Management office of the Physical Plant; and*
 - ❑ *Office of the APO.*
14. Commission or otherwise complete a regular review and evaluation of all remaining asbestos-containing materials once every second year or more frequently as circumstances warrant.
15. Commission or otherwise undertake a program of labelling to identify the presence of all known or suspect asbestos-containing materials in a manner consistent with the requirements set out in *Appendix T*.
16. Engage as required, the services of an outside asbestos consulting firm to assist individual managers or project coordinators with the following duties and responsibilities:
 - a) Assist in the review of all maintenance, renovation or construction activities that will or may result in the disturbance of any known or suspect asbestos-containing materials.
 - b) Assist in the identification and evaluation of any suspect asbestos-containing materials rendered accessible as a result of both scheduled and unscheduled maintenance, renovations or construction activities.
 - c) Provide daily site inspection and air monitoring services to be performed as part of any scheduled asbestos disturbances undertaken externally by forces other than the University's physical plant maintenance staff. Such services are to be provided at a

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frequency to ensure compliance with existing regulations and corporate policy as set out under Section 9 of the AMP document.

- d) Assist in the design, coordination, inspection and air monitoring of all Type 3 (Large Scale or High Risk) asbestos abatement activities.
- e) Ensure all asbestos related activities are identified, selected and conducted in accordance to the work practices and procedures set out under Section 8 of the AMP document.

Only those firms having an establish reputation for excellence in the field of asbestos consulting and management shall be considered for work at any property under the control, occupancy or administration of Acadia University. In addition, such firms must also be able to demonstrate compliance with the quality control and assurance standards set out in *Appendix V*.

3.3 Physical Plant Services

3.3.1 Administrative Services

The following tasks and/or duties shall be assigned to the office of the Physical Plant Management in charge at Acadia University.

1. Update, while in consultation with the Asbestos Programs Officer, the asbestos inventory for each building as conditions change or as individual “Asbestos Work Reports” are received from the various managers or project coordinators in charge of scheduled maintenance, renovations or construction activities.
2. Ensure, that within the Physical Plant, that all managers, department heads, trade supervisors, maintenance and custodial staff, etc., are informed of the current location of all known or suspect asbestos-containing materials, within the scope of the work area or building for which they are assigned, and are updated as conditions change or as these materials are removed.
3. Ensure all known or suspect asbestos-containing materials are maintained in good condition.
4. Commission or otherwise coordinate the removal or repair of any asbestos-containing materials that have been damaged or are otherwise found to be in a state of disrepair and/or are subject to disturbance as part of any maintenance, renovations or construction activities.
5. Notification to the APO of all asbestos related removals, repairs or activities.

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6. Arrange for the scheduled cleaning and servicing of the designated “Asbestos Vacuum” made reference to under *Appendix U* or as otherwise assigned for use by the various Trade Shops or Custodial Services which, when combined, form part of the Physical Plant.
7. Arrange for the disposal of any asbestos-containing waste that may be generated from time-to-time as a result of any asbestos abatement activities undertaken internally by the University’s physical plant maintenance staff. Ensure that an appropriately completed Asbestos Waste Transfer Manifest is submitted to the APO (*Appendix T*).

3.3.2 Project Designers

The following tasks and/or duties shall be the responsibility of the head designer assigned to the project by or on behalf of Acadia University.

1. Undertake a detailed review of all projects to establish the potential for asbestos disturbance. In most instances, this will require the engagement of an external consultant to assist in the evaluation process and to perform the required pre-renovation/demolition asbestos survey. This is required to satisfy the University’s regulatory responsibilities and to fully assess the impact any known or suspect asbestos-containing materials may have on the scheduled work.
2. Notwithstanding the above requirement, and for work of a MINOR nature only, the above evaluation process may be completed through the assistance of the APO assigned to the building in which the work is scheduled.
3. Should the above survey identify the need to incorporate as part of the final design, specific asbestos abatement activities; then the services of an external consultant must be retained to assist in the design and preparation of the required asbestos abatement specification sections. Ensure the final Tender Package contains sufficient information to allow contractors to compile an accurate and inclusive bid.
4. Notwithstanding any asbestos removal undertaken to satisfy the project minimum requirements, consideration must also be given to a policy of “Pro-active Removal” of any additional asbestos rendered accessible as part of the work, should the project budget permit.
5. Only those firms having an established reputation for excellence in the field of asbestos consulting and management shall be considered for work at any property under the control, occupancy or administration of Acadia University. In addition, such firms must also be able to demonstrate compliance with the quality control and assurance standards set out in *Appendix V*.

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3.3.3 Project Coordinator or Manager

The following tasks and/or duties shall be the responsibility of the individual manager or project coordinator assigned to the work by or on behalf of the University.

1. Undertake a review of all maintenance, renovation or construction activities to assess their potential for asbestos disturbance provided the Project Designer and/or others have not already performed such a review. Ensure the appropriate risk classification is assigned to any work that may or will result in the disturbance of any known or suspect asbestos-containing materials (Low, Moderate or High).
2. Notify all outside contractors or external service personnel (i.e. plumbers, custodial or maintenance firms, telephone service personnel, etc.) whose work has the potential of disturbing known or suspect asbestos-containing materials of their presence and approximate location.
3. Ensure all outside contractors or external service personnel (ie. plumbing, custodial or maintenance firms, telephone service personnel, etc.) are provided with and complete a Contractor's Notification & Acknowledgement form as contained in *Appendix I* where appropriate. Provide a copy of the above documentation to the APO having jurisdiction over the building in which the work is scheduled to be performed.
4. Ensure the APO having jurisdiction is kept informed (in advance) of all major maintenance, renovation or construction activities in sufficient time to assist the individual manager or project coordinator assigned to the work with his/her assessment of the work and any potential for asbestos disturbance.
5. Ensure an Asbestos Work Requisition/Permit form contained in *Appendix Q* is filed with the APO having jurisdiction thereby requesting his/her authorization to proceed with the specified asbestos abatement activities described by the above document. Ensure a signed and duly executed copy of the aforementioned Asbestos Work Requisition/Permits is first obtained from the APO having jurisdiction prior to authorizing the start of any work that will or may result in the disturbance of any known or suspect asbestos-containing materials.
6. Ensure those individuals, offices or departments as listed under Section 11 herein, are notified in advance of any scheduled asbestos disturbance.
7. Prior to the commencement of any asbestos-related work, visit the specific office(s) or work area(s) directly impacted by the work and complete the following:

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- a) Provide the individual tenant(s) or staff, who normally occupy these areas, with a brief outline or sketch of the upcoming work and steps being taken to ensure a safe work environment is maintained at all times.
 - b) Determine what, if any, concerns and/or specific needs such individuals may have.
 - c) Determine which, if any, of the above tenant(s) or staff may wish to receive a copy of any asbestos related correspondence (i.e. site inspection reports, air monitoring data, etc.).
8. Commission or otherwise coordinate the removal or repair of any asbestos-containing materials deemed necessary to facilitate the work at hand. In doing so, the individual manager or project coordinator in charge of the work shall keep in mind the University's policy of "Pro-active Removal" of any asbestos-containing building materials rendered accessible during scheduled maintenance, renovations or construction when and if the project budget permits.
9. If the above work is to be completed internally using Acadia University's physical plant maintenance staff, ensure the APO responsible for the work is informed in sufficient time to permit him/herto coordinate the necessary inspection and air monitoring services.
10. If the above work is to be completed externally by forces other than Acadia University's physical plant maintenance staff, then the services of an outside asbestos consulting firm (i.e. Designated Inspection Agency) shall be retained to provide site inspection and air monitoring services during all scheduled asbestos disturbances. Such services are to be provided at a frequency to ensure compliance with existing regulations and corporate policy as set forth under Section 9 of the AMP document.
- Only those firms having an establish reputation for excellence in the field of asbestos inspection and monitoring shall be considered for work at any property under the control, occupancy or administration of Acadia University. In addition, such firms must also be able to demonstrate compliance with the quality control and assurance standards set out in *Appendix V*.
11. Ensure a copy of all site inspection reports and any corresponding air monitoring data is forwarded to the APO, assigned to the building in which the work is being performed, and within twenty-four (24) hours of the inspection having been performed.

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12. In addition, ensure a copy of the above information is also provided to the following individuals when, or if, requested.
 - a) The Building Manager responsible for the building or work area in which the work is being performed.
 - b) The individual tenant(s) or staff member in charge of any office(s) or work area(s) directly impacted by the proposed asbestos work.
13. Notwithstanding the above requirements, a summary of each day's air sampling results shall be posted on Acadia University's own internal web page or intranet system as soon as possible.
14. For projects involving two (2) or more days of asbestos-related work, an additional hard copy of all air monitoring data shall be posted on the nearest public notification board on a same-shift basis, and in all instances, within twenty-four (24) hours following sample collection. Signage, confirming that the above referenced test results are available for viewing at the nearest public notification board, complete with directions, shall be posted at varying points along the perimeter of the established work area and immediately adjacent to the main entranceway or decontamination facility.
15. Existing policy requires that all Type 3 (Large Scale or High Risk) asbestos abatement work be contracted-out to an experienced asbestos abatement contractor. Accordingly, no employee of Acadia University shall knowingly be directed to undertake such work.
16. Engage, through the normal purchasing process, an outside contractor specialized in asbestos abatement work to assist Acadia University with any low to moderate risk asbestos work that may be required from time-to-time and all Type 3 or high risk removal projects. Ensure adequate information is contained in the Tender Package to satisfy regulatory requirements. Refer to *Appendix J* for a list of pre-qualified contractors.
17. To the extent in which any previously undiscovered asbestos-containing materials are exposed during scheduled maintenance, renovations or construction activities; the individual manager or project coordinator assigned to the work shall commission or otherwise undertake to label the newly exposed asbestos in a manner consistent with the requirements set out in *Appendix T*.

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18. Oversee all asbestos abatement activities associated with work under his/her control whether undertaken internally or through an outside contractor to the extent necessary to ensure its safe and proper execution.
19. Ensure the individual worker or supervisor in charge of the work files an “Asbestos Work Report” (see *Appendix R*) with the following individuals:
 - a) The office of the APO assigned to the building in which the work was performed.
 - b) The Project Management office of the Physical Plant.

3.4 Deans, Directors, Department Heads and Managers

The following tasks and/or duties shall be assigned to the Dean, Director, Department Head or Manager in charge of each individual departments or faculties.

1. Ensure all staff, under his/her administration, are informed of the current location of known or suspect asbestos-containing materials for which they could reasonably disturb, within the scope of the work area or building in which they are assigned. Ensure such individuals are updated on a regular basis as conditions change or as these materials are removed.
2. Ensure that all purchased or acquired (i.e. donated) equipment either new or old does not contain asbestos components, asbestos liners or asbestos-containing materials or part.
3. Evaluate on an annual basis or more frequently if required, and in consultation with Acadia University’s APO, the following items:
 - a) The need to hold awareness and/or procedural training and respirator fit-testing for any workers or staff whose job requires them to work on or near known or suspect asbestos-containing materials.
 - b) The need and/or acquisition of any specialty equipment or supplies necessitated by the presence of a confirmed or suspect asbestos-containing material that will or may reasonably have an impact on any individual person or persons under his/her care or supervision.
4. Ensure all staff, under his/her administration, comply with the requirements set out under Sections 3.3.2 and 3.3.3 above, whenever an outside contractor or external service personnel (i.e. plumbers, custodial or maintenance firms, telephone service personnel, etc.) are engaged independent of the University’s Physical Plant Services.

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3.5 Employees

The following responsibilities shall be assigned to all Acadia University employees whose work will and/or may result in the disturbance of any asbestos-containing or contaminated materials or surfaces.

1. Be familiar with all duties and responsibilities assigned to him/her under the terms of Acadia University's Asbestos Management Program.
2. Be familiar with the location of any asbestos-containing materials known to be present within the specific work area or building for which he or she is assigned and would reasonably be expected to encounter or disturb (whether intentional or not) during the normal execution of their duties.
3. Upon discovery of any unidentified asbestos-containing materials or products suspect of containing asbestos, secure the area, suspend all activities that may disturb such materials and immediately notify his/her supervisor. Do not proceed with work in the area until it has been determined if the material in question contains asbestos and authorization to proceed has been granted by his/her supervisor.
4. Should a worker be exposed to, or encounter, a spill of asbestos or a suspect asbestos-containing material, he/she shall respond to the incident as detailed in *Appendix O*.
5. Report any damage to existing asbestos-containing materials to his/her own supervisor. Refer to the form provided for this purpose in *Appendix X* for additional information and instruction.
6. Existing policy requires that all Type 3 (Large Scale or High Risk) asbestos abatement work be contracted-out to an experienced asbestos abatement contractor. Accordingly, no employee of Acadia University shall undertake such work.
7. Execute all work in compliance with Acadia University's Asbestos Management Program.

3.6 Joint Occupational Health and Safety Committee

The following responsibilities shall be assigned to the corresponding Joint Occupational Health and Safety Committee.

1. Participate in a review of the Asbestos Management Program, which is to take place once every second year.

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2. May take part in or participate in any hazard investigations or assessments undertaken from time-to-time including, but not limited to, any regularly scheduled asbestos survey updates.
3. Ensure any future or existing work practices or procedures meet or exceed the minimum requirements set out in the following AMP document.

3.7 Contractors

The following responsibilities fall upon any contractor whose work will or may result in the disturbance of any asbestos-containing or contaminated materials or surfaces.

1. Be familiar with all duties and responsibilities assigned to his/her firm under the terms of Acadia University's Asbestos Management Program.
2. Execute all work in compliance with Acadia University's Asbestos Management Program.
3. Before commencing work, ensure all employees and supervisory staff, under his/her control, have been informed of the presence and approximate location of all known or suspect asbestos-containing materials that are subject to disturbance (whether intentional or not).
4. Upon discovery of any unidentified asbestos or suspect asbestos-containing materials, secure the area, suspend all activities that may disturb such materials and immediately notify the Project Coordinator or Manager assigned to the work by Acadia University. Do not proceed with work in the area until it has been determined if the material in question contains asbestos and written authorization to proceed has been obtained from the Project Coordinator or Manager.
5. File with the Project Coordinator or Manager, a signed and duly executed copy of the Contractor's Notification & Acknowledgement form provided under *Appendix I*.
6. Perform work in such a manner as to avoid the disturbance of any asbestos-containing materials other than those materials specifically contracted to remove, repair, encapsulate or enclose.
7. Prior to proceeding with any asbestos disturbance (i.e. removal, clean-up or repair) ensure a signed and duly executed Asbestos Work Requisition/Permit (see *Appendix Q*) is obtained from the Project Coordinator or Manager.
8. Ensure all work that may disturb any asbestos-containing or contaminated surfaces is completed in accordance with current regulatory requirements and while following prescribed asbestos procedures as detailed under *Appendix K to Appendix N* as attached to the end of this document.

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9. Provide the Project Coordinator or Manager with a copy of all executed Asbestos Waste Transportation Manifests verifying the safe and proper disposal of all asbestos waste generated. Refer to the form provided in *Appendix S* at the end of this document for additional information and requirements.

10. Ensure the individual worker or supervisor in charge of the work files an “Asbestos Work Report” (see *Appendix R*) with the Project Coordinator or Manager.

SECTION 4 - REGULATORY REQUIREMENTS

4.1 Provincial Regulation & Guidelines

In addition to the above federal legislation, Nova Scotia Environment and Labour has issued codes of practice, guidelines and an information package. The Codes of Practice under the Occupational Health and Safety Act of 1985 are enforceable by the Nova Scotia Environment and Labour regulators.

- Code of Practice for Removal of Friable Asbestos-Containing Materials
- Code of Practice for Managing Asbestos in Buildings
- Maintenance Operations Involving Asbestos - A Guideline
- Outdoor Work with Asbestos (Removal Projects) - A Guideline
- Dealing with Asbestos-containing Materials - An Information Package includes:
 - Health Effects
 - Regulatory Control
 - Responsibility and Supervision
 - Education and Training
 - Personal Protective Equipment and Hygiene
 - Health and Site Monitoring
 - Developing a Code of Practice

The guidelines and information package provide a basis for developing a reasonable asbestos control program, although they do not have the force of law. The Code of Practice for Managing Asbestos in Buildings requires a specific workplace assessment and inventory of asbestos, immediate clean-up of material which could expose workers and development of a detailed Asbestos Management Strategy. The Codes require work practices be established which will maintain a safe work environment.

Notwithstanding the fact that Acadia University is an employer subject to the applicable provincial codes and regulations, it is acknowledged that the above provincial legislation may also come to bare and/or will govern over work performed by an outside contractor or firm that may be engaged

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to perform work on equipment owned, leased or otherwise under the control or operation of Acadia University.

Accordingly, all provincially licensed contractors or service personnel engaged to perform work on equipment owned, leased or otherwise under the control or operation of Acadia University shall ensure his/her firm's familiarity and compliance with all provincial legislation concerning asbestos.

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SECTION 5 - ASBESTOS ASSESSMENT & MONITORING

5.1 Survey Methodology

One of the fundamental components of any Asbestos Management Program is the establishment of a detailed and accurate survey or inventory of all known or suspect asbestos-containing building materials. Existing regulation further requires that such an assessment be carried out in all workplaces throughout the province wherever the presence of asbestos has been confirmed or can reasonably be suspected as being present given the age of the facility.

To satisfy the above obligation, Acadia University has commissioned Pinchin LeBlanc Environmental Ltd. to undertake an asbestos inventory of all suspect building materials. This process is intended to provide Acadia University with a report on the location and overall composition of asbestos-containing materials present in each of the subject buildings. Such an assessment shall incorporate the following minimum requirements:

1. The survey shall be conducted in accordance with current regulations and guidelines;
2. The survey and subsequent report shall be performed on a room-by-room basis and shall include estimated quantities and must also include comments concerning the current condition of such materials and their accessibility;
3. The information gathered over the course of the survey and subsequent report shall be entered onto an electronic database compatible with Acadia University's end use and web browser.
4. The survey shall check for and include an evaluation of all suspect or confirmed asbestos building materials (both friable and non-friable) described under Section 1.3 of the AMP document; and
5. All materials found to contain 1% or greater asbestos shall be included in the investigation and shall be identified in the report as asbestos.

Acadia University has provided Pinchin LeBlanc Environmental Ltd. with the following reports and information as part of the assessment. The information from these documents will be used to aid the completion of the above tasks.

1. Asbestos Materials Assessment, Elliot Hall, Acadia University, Wolfville, NS, December 18th, 2006, ALL-TECH Environmental Services Limited;

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2. Asbestos Audit Mechanical Rooms, Acadia University, February 16th, 2006, Project # 05-2007, Strum Environmental Services Limited;
3. Environmental Screening Assessment, 56/58 University Avenue, Wolfville, NS, January 25th, 2006, Project # 06-2022, Strum Environmental Services Limited;
4. Asbestos Survey and Management Plan, Acadia University, Wolfville, NS, March 5th, 1998, NEO-0994, Maritime Testing (1985) Limited.

5.2 Bulk Sample Collection & Analysis

To establish the presence of asbestos in any suspect building materials it is necessary to submit for analysis a limited number of bulk samples for asbestos analysis. Sampling of suspect or uncovered materials during renovation activities will also be necessary.

Sampling of such materials shall be conducted in accordance with the procedures set forth under *Appendix F*.

5.3 Assessment of Materials during the Survey

The evaluation of all asbestos or suspect asbestos-containing materials shall be performed in accordance with those requirements as set forth under *Appendix A*.

Recommendations concerning any remedial actions deemed necessary shall be formulated in accordance with the protocol as set forth under *Appendix B*.

5.4 Documentation and Notification of Results

Once the field survey and analysis are completed, the results (whether positive or negative) must be reported, and in a fashion readily accessible to building maintenance or custodial staff, supervisors or outside contractors. To obtain this objective, the report shall contain the following information:

- A listing of all materials found to contain or be contaminated with asbestos.
- A listing of all suspect asbestos-containing materials.
- Room-by-room data sheets detailing the estimated quantity, access and current condition of all suspect or confirmed asbestos-containing materials and on a system-by-system basis.
- Copy of all bulk sample analysis or test data.
- A drawing or schedule providing the approximate location of all bulk samples collected.

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- ❑ A drawing showing the approximate location of all asbestos-containing sprayed fireproofing, thermal insulation or texture coats, ceiling tiles or flooring products.
- ❑ An adequate description (i.e. by room number) as to the location of all asbestos-containing mechanical insulation and any other non-friable materials detected.
- ❑ A summary of materials requiring remedial action (i.e. repair, removal, clean-up, etc.) including estimated quantities and location.
- ❑ A listing of all materials tested that do not contain asbestos so as to avoid future re-testing.

Once completed, a copy of the final report shall be maintained on file and must also be forwarded to those individual or departments listed under Section 3.2.13 above.

In addition to the final report Pinchin LeBlanc Environmental Ltd will provide and setup a Hazardous Materials Inventory System (HMIS) for recording asbestos-containing materials at Acadia University. The system is comprised of two parts: data collection by experienced surveyors, and data storage and manipulation via the HMIS web-based software.

HMIS online features the unique ability to allow the user to simply click on any area of an imported building plan and view a list of the asbestos-containing materials in that area as well as viewing photos of the materials. HMIS online provides the ability for large, geographically dispersed groups of users to view, query and sort information in a manner that cannot be matched by ordinary database or spreadsheet software packages. In addition, HMIS generates priority lists that can be modified to suit local regulations and client needs or preferences.

5.5 Visual Re-evaluation & Assessment

The APO shall in consultation with management, commission and/or otherwise complete a regular review and evaluation of all remaining asbestos-containing materials once every second year or more frequently as circumstances warrant.

Wherever practical, the re-evaluation shall be performed by the same individual or firm who completed the initial survey to maintain as uniform an evaluation as possible.

In most instances, the re-evaluation process will not require the collection of additional bulks. It must however, take into consideration all of the factors originally considered during the initial survey and shall concentrate on any signs of deterioration, delimitation or disturbance.

5.6 Air Monitoring

The intent of air monitoring is to evaluate the control measures in place during and asbestos abatement project and to provide clearance of post asbestos abatement areas. The technique of air monitoring is sometimes suggested to determine whether or not any particular area poses a potential health problem in the absence of active asbestos abatement. At the present time, no authority recommends air sampling for hazard identification for a number of reasons. The usual method used, the NIOSH Phase Contrast Method, does not differentiate asbestos fibres from any other type of fibre and therefore the result is not related to the presence or absence of asbestos. Also, due to the limited resolution of the optical microscope, the small diameter fibres which may be asbestos fibres cannot be detected.

Transmission electron microscopy does not have these drawbacks but requires a longer time for results and is more expensive. In addition, although an air sample may show no fibres are present, there may still be an undetected potential hazard lurking around the corner. That is, if a friable product is disturbed later the airborne fibre levels may increase sharply.

Therefore, air sampling will be not be routinely used in assessing the potential health risk or need to take remedial action in a building known to contain asbestos.

If building users or occupants request air sampling in a building, this may be performed to address these concerns but will be up to the discretion of Acadia University based on the circumstances. Should monitoring be conducted to assess exposure in the absence of asbestos abatement work, monitoring shall be performed by an independent consultant using the Transmission Electron Microscopy (TEM). Due to the limited use of air sampling in material evaluation, air monitoring by any technique is not recommended and will not be routinely performed.

5.7 Dust Sampling

As with air sampling, the collection of random dust samples, whether during abatement or not, is sometimes suggested as a way of establishing whether or not a particular area represents a health hazard; as a means of measuring the cumulative affect of any past asbestos disturbances; and as a way of measuring the potential for occupant exposures in the context of the building's day-to-day use or occupancy.

Currently there are no published standards or guidelines exist that offer insight into what, if any, amount of asbestos may be present in settled dust, as measured in occupied areas. Nor is there good literature to establish when such concentrations would constitute a significant health risk or be

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considered elevated as compared to normal background levels as measured in buildings which are known to contain or be free of any asbestos-containing building materials.

To further complicate the issue, it is widely acknowledged that the collection of random dust samples is not the best way of assessing an area's potential health risk or extent of contamination. For example, unless an excessive number of dust samples are collected and analysed, the results may be misleading. In addition, large concentrations of very thin ($<0.25 \mu\text{m}$) asbestos fibres may be missed entirely if the samples are not analysed using an approved TEM test method.

With the above limitations in mind, the collection of random dust samples from surfaces throughout any occupied areas will have limited benefit and must only be undertaken with the informed consent of Acadia University's Asbestos Programs Officer. Therefore it will not be common practice to collect dust samples in response to a clear failure to observe prescribed precautions, in the presence of any fallen or dislodged asbestos debris, or as a result of a visible breach in a containment system. Instead, access to such areas shall be restricted to authorized personnel until such time as the attending APO has had the opportunity to fully assess the area and the required clean-up has been completed.

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SECTION 6 - LOCATION OF ASBESTOS-CONTAINING MATERIALS

For a listing as to the location of presently known asbestos-containing materials, refer to the most recent copy of the asbestos survey report, bound separately and kept on file in the office of the Asbestos Programs Officer or to the HMIS asbestos database program maintained by the Asbestos Programs Officer and present in the Project Management Department of the Physical Plant. As of the issuance of this AMP, the HMIS asbestos database program is in development and information regarding the location and extent of asbestos-containing materials must be relied upon by the past survey information.

Pinchin LeBlanc Environmental Ltd has been retained by Acadia University to undertake a comprehensive asbestos materials survey of all Acadia University facilities and to take appropriate bulk samples for asbestos determination where required. The surveys will include friable and non-friable asbestos materials present relating to building structures, surface of equipment, piping, ducting, vessels, ceiling and wall finishes, and all other suspect products and materials. Pinchin Leblanc Environmental Ltd will also be responsible for assisting in the development and implementation of a comprehensive labelling/stencilling program for all asbestos-containing materials as prescribed in *Appendix T*.

SECTION 7 - CLASSIFICATION OF WORK

7.1 Scheduled Asbestos Work

Excluding work undertaken on an emergency basis or in response to a spill of asbestos or suspect asbestos materials, all asbestos-related work must only be completed at scheduled times as approved by the individual manager and/or project coordinator assigned to the work.

Before such work can proceed, the worker, supervisor or contractor in charge of the work must first obtain a signed and duly authorized "Asbestos Work Requisition/Permit" from the APO.

The APO, upon receipt of such a request, shall review the work at hand and classify it into one of the following categories:

- ❑ **Type 1 or Low Risk Work:** Activities that represent a low risk of exposure to airborne asbestos fibres and almost no health risk.
- ❑ **Type 2 or Moderate Risk Work:** Activities that represent a moderate risk of exposure to airborne asbestos fibres and some health risk.
- ❑ **Type 3 or High Risk Work:** Activities that present a high risk of exposure to airborne asbestos and a corresponding higher risk of health effects if handled improperly.

In evaluating the hazard a particular task or scope of work may represent, consideration must be given to the following two (2) overriding factors; (a) the extent at which airborne asbestos dust will be generated; and (b) the duration in which it will take to complete the work. Factors that affect the level of airborne asbestos dust include the nature of the asbestos material, how the work is to be performed and the availability of controls to limit exposure.

Consideration must also be given to the material's friability. For example, non-friable materials when dry, can not easily be crumbled, pulverized or powdered by hand or moderate pressure and hence represent a lower risk of fibre release when disturbed. In contrast, friable asbestos materials readily release airborne fibres when disturbed and require a heightened level of precautions.

Once the work has been evaluated by the APO and the required work permit issued, workers may proceed with the work while adhering to the procedures and precautions assigned to the work.

For a more comprehensive listing of the work permissible under each of the above noted categories, and the required work procedures and precautions, refer to Section 8.

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7.2 Procedures in the Event of a Suspect Asbestos Spill

It is possible that Acadia University personnel may encounter a spill of asbestos or suspect asbestos material (debris) from time-to-time. In such cases, it is important that the exposure to the worker(s) and all other building occupants be minimized by isolating the material (debris) in question until it can be determined if it contains asbestos and the appropriate clean-up is completed.

Should such an incident arise, refer to *Appendix O* for additional information and procedures.

7.3 Procedures For Emergency Work

The need to conduct asbestos removal on an emergency basis may arise from time-to-time. Examples of such unscheduled emergency work include:

- The clean-up of fallen or damaged asbestos-containing ceiling tiles as a result of a broken sprinkler line, etc..
- The emergency repair of any mechanical service lines (piping) or vessels currently insulated with asbestos.

In such instances, it is not always possible to strictly adhere to Type 2 (Moderate Risk) precautions given the urgency of the situation. In such cases, the attending worker or the APO (if available) will have to exercise prudent judgement.

Should such an episode arise, the procedures outlined in *Appendix P* shall be adhered to. Principle consideration shall also be given to the protection of worker(s) performing the work while implementing additional precautions (i.e. additional wetting of the material prior to disturbance) so as to minimize the generation of airborne fibres.

Such emergency procedures would also prove to be acceptable in the event of a breach in containment during any Type 2, Type 3 or Glove Bag removal work.

In order to facilitate as speedy response as possible to any such emergency, the Physical Plant Management at Acadia University shall ensure the materials and supplies as itemized under *Appendix U* are maintained on-hand and ready for use.

SECTION 8 - WORK PRACTICES & PROCEDURES

The following sections and corresponding appendices describe the minimum acceptable asbestos work practices for work undertaken at any Acadia University owned or occupied premises and are formulated to meet or exceed current regulatory requirements.

All work shall be performed in accordance with regulations in effect at the time the work is performed. In any case of conflict between the procedures specified herein and those set down by regulatory authorities, the more stringent requirement shall prevail.

8.1 General Procedures For Type 1, Type 2 & Glove Bag Work

Many of the requirements and work practices set down for Type 1, Type 2 or even the removal of mechanical pipe insulation by Glove Bag Method are similar in nature. For ease of reference, such procedures have been summarized collectively under *Appendix K* and shall apply equally to all classifications of work.

8.2 Procedures For Type 1 or Low Risk Work

The following is a list of activities that can normally be performed while adhering to Type 1 (Low Risk) asbestos precautions as detailed in *Appendix L*.

- Handling, installation or removal of non-friable manufactured products known to contain asbestos provided no sanding, cutting, drilling, abrading, broken or similar destructive operations are required. Such manufactured products include such items as vinyl composite floor tiles, gaskets, seals, asbestos-cement panels, siding and piping.
- Working in close proximity to friable asbestos-containing materials (excluding jacketed mechanical insulation rated as being in good condition) provided that such materials are not actively being disturbed.
- Breaking, cutting, shaping, drilling, grinding or removal of manufactured products known to containing asbestos provided the material is wetted to control the release of asbestos dust and the work is done by means of non-powered hand tools.
- Using a mechanical or electrical power tool, fitted with a HEPA filtered dust collection shroud to cut, shape, drill or grind manufactured products containing asbestos.
- Wearing or using protective equipment or clothing made of asbestos-containing textiles.

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- ❑ Removing drywall (less than one square meter) where asbestos joint filling compounds have been used.
- ❑ Work that involves the disturbance of less than one square meter of asbestos-containing plaster including installation of hangers or fixtures which require pre-drilling into the wall with drill bits not exceeding 13mm in diameter or coring holes provided a HEPA attachment is used.

8.3 Procedures For Type 2 or Moderate Risk Work

The following is a list of activities that can normally be performed while adhering to Type 2 asbestos precautions as set down in *Appendix M*.

- ❑ Removal of all or part of a suspended ceiling system if asbestos-containing material is likely to be present on the suspended ceiling surface.
- ❑ Entry into any ceiling space above which friable asbestos-containing sprayed fireproofing or thermal insulation is known to be present.
- ❑ Entry into a crawlspace, mechanical chase, service area, etc. in which there is known to be loose and damaged asbestos-containing materials or debris.
- ❑ The clean-up, removal or encapsulation of minor amounts of friable asbestos-containing materials. Limitations as to the amount of material allowed to be removed or otherwise disturbed while adhering to Type 2 precautions shall be at the sole discretion of the Asbestos Programs Officer or Designated Inspection Agency but shall not exceed one square meter of friable asbestos material.
- ❑ Breaking, cutting, shaping, drilling, grinding or removal of manufactured products known to containing asbestos by means of non-powered hand tools and the material is not wetted to control the spread of dust.
- ❑ Removal of asbestos-containing sheet flooring.
- ❑ Repair of asbestos-containing mechanical insulation materials such as piping or vessel insulation, including the application of tape, sealant or other covering.
- ❑ Removal of more than one square meter of drywall joint compound or plaster finish that contains asbestos.

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8.4 Procedures For Type 3 or High Risk Work

As a matter of corporate policy, no employee of Acadia University shall be assigned to or undertake any Type 3 (or high risk) work. Instead, such work will only be performed through an outside contractor who specializes in such work and has a well-established reputation for quality workmanship in the field of asbestos control and remediation.

As Type 3 work represents a higher risk or potential for exposure to both the workers performing the removal as well as to all other building occupants, special consideration and planning must be given to such projects.

To achieve this goal, an outside Asbestos Consulting firm shall be engaged (either directly or as a sub-consultant to the Prime Consultant or Architect) to assist in the preparation of a site specific specification to effect the safe and proper removal of all ACM subject to disturbance. Wherever practical, these projects shall be designed to avoid the need for any Acadia University employees to enter the enclosure during the abatement process.

8.5 Procedures For Glove Bag Work

As an alternative to completing the removal of pipewrap insulation from within a sealed Type 2 or Type 3 enclosure, workers may consider (where approved by the APO) completing such work by "Glove Bag Method" while adhering to the precautions set forth under *Appendix N*.

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SECTION 9 - INSPECTION & AIR MONITORING

To ensure the highest standard of care and workmanship is maintained at all times, the APO shall conduct and/or otherwise allocate to an outside asbestos-consulting firm (i.e. Designated Inspection Agency) the task of providing regular site inspections and air monitoring services during all scheduled asbestos disturbances.

The following sub-sections outline minimum standards for the completion of such site inspection and air monitoring services at any Acadia University owned or occupied premises to obtain compliance with existing regulation and current corporate policy.

9.1 Requirements For Project Inspection

All asbestos-related disturbances at Acadia University shall fall under the control and direct supervision of the APO or appointed representative.

The APO, or appointed representative, shall review each active asbestos work site a minimum of once per day as a means of ensuring worker compliance with the procedures and work practices established by the AMP document.

In addition, the APO, or appointed representative, shall re-visit each work site at the following times to provide the necessary approval before allowing the work to proceed:

- Following the completion of clean site preparations and set-up but prior to the commencement of any asbestos disturbance.
- Following the completion of all required work (i.e. clean-up, removal or repair) but prior to the dismantlement of any perimeter seals or barricades and the re-commissioning of the area.

As a means of documenting the safe and proper completion of the work, any difficulties encountered or the issuance of any site instructions, etc., a site inspection report shall be filed and maintained on record for each inspection performed. Such a report shall include any comments or observations made on the following items:

1. Air Monitoring
2. Site Isolation
3. Facilities & Equipment
4. Negative Air
5. Worker Protection
6. Dust Suppression
7. Waste Handling
8. Clean-up
9. Other

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Copies of the above site inspection reports, found in appendix X, shall be passed onto and maintained on file by the APO.

9.2 Requirements For Air Monitoring

Traditionally, air monitoring of active asbestos abatement projects has always been done while observing one of the following test methods:

- Phase Contrast Microscopy (PCM)
- Fibrous Aerosol Monitor (FAM)
- Transmission Electron Microscopy (TEM)

As a general rule, all monitoring of asbestos disturbances at any Acadia University owned or occupied premises shall be performed using the PCM test method while adhering to the requirements set out below and to those established under *Appendix F*.

Existing regulation requires that an employer must measure for airborne asbestos in all workplaces where a risk of exposure to asbestos dust may exist. In order to meet, and in some instances exceed, such regulations and guidelines, a program of air monitoring shall be undertaken in such a pattern and frequency as to:

1. Ensure the health of all workers (both inside and adjoining any asbestos work area) is effectively protected.
2. To aid in the proper selection and use of respiratory equipment appropriate to the work at hand.
3. To ensure levels of airborne dust as measured immediately outside or surrounding any asbestos work site does not exceed established Action Limits (i.e. 0.05 fib/mL).
4. Verify that any preventative actions or measures (i.e. work procedures) previously implemented or observed remain effective.
5. Establish worker exposure profiles for various work functions or tasks, and that such exposure levels remain consistent or are shown to be on the decline.
6. Ensure individual work exposures are maintained “as close to zero” as is reasonable practicable.
7. Ensure any change in site conditions or in prescribed work procedures do not lead to an increase in individual worker exposures.

To effect compliance with the above objectives, air sampling shall be performed on a daily basis both within and immediately adjacent to each active Type 3 asbestos work area.

9.3 Type 1 – Inspection and Air Monitoring

Inspection

The APO or appointed representative, will inspect Type 1 work upon completion of work.

Air Monitoring

No air monitoring is required during Type 1 work.

9.4 Type 2 and Glove Bag – Inspection and Air Monitoring

Inspection

An outside Asbestos Consultant will inspect Type 2 and Glove Bag work. Upon completion of inspection and air monitoring by the Consultant, the Type 2 enclosure will be dismantled. The APO or assigned representative may inspect for final cleanliness after the enclosure has been dismantled. Daily inspection and air monitoring are required during Type 2 and Glove Bag work.

Air Monitoring

PCM air monitoring will be conducted daily during Type 2 and glove bag work. Air monitoring will be conducted in occupied areas adjacent to the Type 2 enclosure or Glove Bag work area during contaminated work.

PCM air monitoring will be used for air clearance on Type 2 enclosures. Clearance level of 0.05 f/ml must be achieved prior to teardown of the enclosure.

9.5 Type 3 – Inspection and Air Monitoring

Inspection

An outside Asbestos Consultant will inspect Type 3 work. Full time on-site inspection is required by Acadia University policy. Upon completion of inspection and air monitoring by the consultant the Type 3 enclosure will be dismantled. The APO or assigned representative will inspect the Type 3 work area for final cleanliness prior to the enclosure being dismantled.

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Air Monitoring

PCM air monitoring will be conducted on a daily basis during Type 3 work. The air monitoring will be conducted in occupied areas adjacent to the Type 3 Work Area to ensure no leakage from the enclosure.

Air monitoring will be used for clearance on Type 3 Work Areas. The air sample will be relied upon to allow clean access to the site for the Teardown Inspection. Clearance levels of 0.05 f/ml must be achieved prior to teardown of the enclosure. Only if PCM clearance is not possible will the TEM method be utilized.

Results obtained from all test monitoring shall be maintained on a permanent basis and must be provided to individual workers (past and present) upon request.

SECTION 10 - WORKER TRAINING

10.1 Training Requirements & Outline

Existing regulations require that the employer provide training to all workers whose jobs require them to work on or near asbestos-containing materials or may have the occasion to respond to a spill or damage of asbestos.

To satisfy this requirement, the individual Dean, Director, Department Head or Manager in charge, shall in cooperation with the Asbestos Programs Officer, provide or arrange for awareness and procedural training for all staff who may have occasion to work with or be exposed to asbestos. In addition, awareness training shall be provided to any supervisory staff responsible for overseeing or co-ordinating such work.

In each case, the training shall be individually tailored to address the specific needs of each group being trained and shall be based on site conditions as they exist at Acadia University facilities.

The following is a sample curriculum designed to meet the requirements set forth by governing authorities for workers involved in Type 1, Type 2 or Glove Bag remedial work (i.e. Physical Plant Maintenance Staff).

- (40 min.) Introduction & Use of Asbestos in the Workplace
- (25 min.) Health Effects Associated with Asbestos Work
- (25 min.) Regulatory Requirements
- Morning Break**
- (30 min.) Introduction to the Asbestos Management Program (AMP)
- (40 min.) Work Practices & Procedures
 - Type 1, Type 2 & Glove Bag Work
 - Emergency Procedures in the Event of a Suspect Asbestos Spill
 - Procedures for Emergency Work
- (30 min.) Slides of Typical Type 1, Type 2 & Glove Bag Work
- Lunch Break**
- (40 min.) Respirator Use and Fit-testing
- (20 min.) Use of Other Protective Gear & Equipment
- (160 min.) Hands-on Training (Type 1, 2 & Glove Bag Work)

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For those individual workers or supervisory staff who will not be working directly with asbestos, but require awareness training alone, attendance during the morning section is usually sufficient.

10.2 Documentation of Training and Refresher Courses

Following attendance at the above training course, each individual employee will sign a “Worker Training Certificate & Acknowledgement” as provided in *Appendix H*. These certificates will be maintained on record by the Asbestos Programs Officer and shall be used to record the date and level of training each individual worker received.

On an annual basis or more frequently as the need may arise, the APO in consultation with management at Acadia University, shall assess the need to hold refresher training courses for any recently employed workers or staff who are engaged in active asbestos work on a more regular basis.

10.3 Equipment Requirements

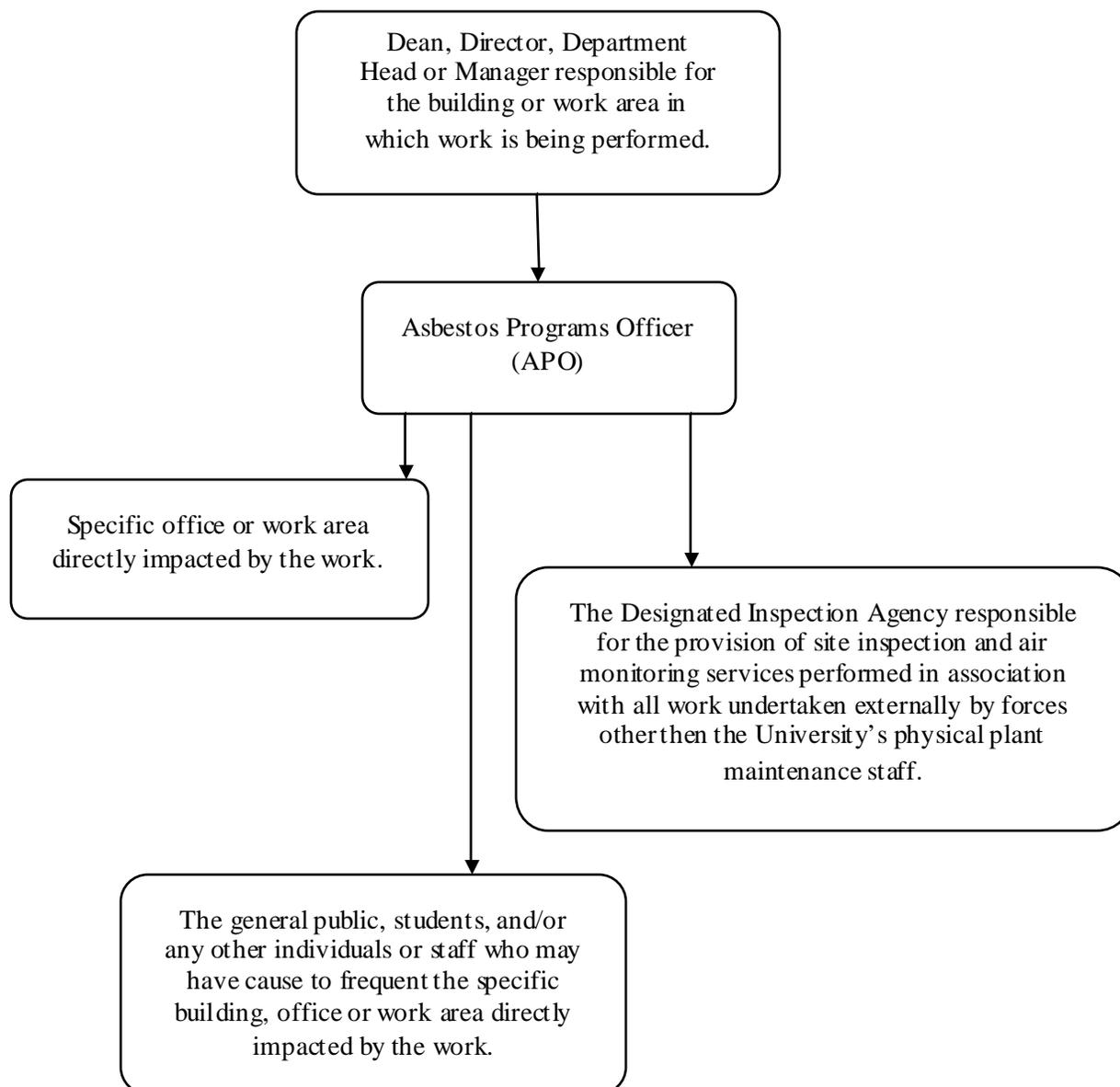
Refer to *Appendix U* for a list of typical equipment required for training purposes and/or any in-house asbestos remedial work.

10.4 Work Performed by Outside Contractors

Whenever the services of an outside contractor is to be engaged to perform work that will or is likely to create an asbestos disturbance, the individual manager or project coordinator assigned to the work shall first obtain confirmation that the Contractor’s workforce has received the appropriate asbestos training. This can be done by obtaining a signed copy of the “Contractor’s Notification & Acknowledgement” form contained in *Appendix I*.

Only those Contractors that met or exceed the requirements set out in *Appendix J* shall be considered for work that will or may result in the disturbance of known or suspect asbestos-containing materials at any Acadia University owned, leased or otherwise occupied building, structure or property.

SECTION 11 - PROJECT NOTIFICATION CHART



APPENDIX A
EVALUATING THE CONDITION
& ACCESS OF ACM

A P P E N D I X A

Once the location of any asbestos-containing materials is determined it is then necessary to have a basis from which its condition and general accessibility can be measured. This in turn provides a baseline from which recommendations can be developed to establish and maintain a safe workplace while ensuring compliance with existing regulations and guidelines.

As the condition and general accessibility of asbestos can vary widely from location to location, the following system of evaluation shall be used to ensure a consistent approach to the evaluation and rating of asbestos-containing materials.

1.0 EVALUATION OF CONDITION

1.1 Sprayed Fireproofing, Thermal or Textured Finishes

Evaluating the condition of spray or trowel applied fireproofing, thermal insulation, texture coats, decorative or acoustic finishes shall be based on the following definitions:

GOOD	Surface of material shows no signs of damage, deterioration or delamination. (Includes unencapsulated sprayed fireproofing, sprayed insulation and sprayed or texture coats where no delamination or damage is observed. Also includes encapsulated materials where the encapsulation was installed after the damage or fallout occurred). Up to 1% visible damage to surface of material is allowed within range of GOOD.
POOR	Sprayed materials show signs of damage, delamination or deterioration. More than 1% damage to surface of the material. Areas of spray where damage exists in isolated locations, may be listed as both GOOD and POOR condition for the same room. In this circumstance the extent of the POOR area is recorded separate from that rated as being in GOOD condition.

1.2 Mechanical Insulation

The condition of mechanical insulation (on boilers, breaching, ductwork, piping, tanks, equipment, etc.) shall be evaluated according to the following criteria:

GOOD	Insulation is jacketed and has no sign of deterioration. No friable insulation is exposed. Includes conditions where the jacketing has minor damage (i.e. scuffs or stains), but jacket is not punctured or penetrated.
FAIR	Minor penetrating damage to jacketed insulation (cuts, tears, deterioration or delamination) or undamaged insulation that is not jacketed. Insulation is exposed but is not showing surface disintegration. Extent of missing insulation ranges from minor to none. Damage can be readily repaired.

POOR	Original insulation jacket is missing, damaged, deteriorated or delaminated. Friable insulation is exposed and significant areas have been dislodged. Damage cannot be readily repaired.
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1.3 Non-Friable and Potentially Friable Materials

For non-friable ACM such as asbestos cement products (transite), and manufactured products that have the potential to become friable when handled, such as acoustic ceiling tiles or sheet vinyl flooring, the condition of these materials shall be evaluated as follows. Note that FAIR is not an applicable condition for rating non-friable materials.

GOOD	No significant damage is present. Material may be cracked or broken but is stable and not likely to become friable upon casual contact.
POOR	Material is severely damaged. Loose debris is present or binder has disintegrated to the point where contact will cause the material to become friable.

1.4 Evaluation of ACM Debris

The presence of fallen ACM debris, whether as a result of delamination, deterioration or damage to sprayed fireproofing, thermal insulation, textured surfaces, decorative or acoustic finishes or mechanical insulation shall be noted separately from the presumed source of ACM and is merely referred to as DEBRIS.

2.0 EVALUATION OF ACCESSIBILITY

The accessibility of ACM shall be rated according to the following criteria:

ACCESS (A)	Common areas of the building within reach (from floor level) of all building users. Includes areas where occupant activities may result in disturbance of ACM not normally within reach (i.e. gymnasiums, warehouses, etc.).
ACCESS (B)	Frequently entered maintenance areas of the building within reach, without use of a ladder, by maintenance staff. Includes areas within reach from a fixed ladder or catwalk, i.e. tops of equipment or mezzanines (as well as regularly entered pipe chases and tunnels).

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ACCESS (C) EXPOSED	Areas of the building above 8'-0" where use of a ladder is required to reach the ACM. Only refers to ACM materials that are exposed to view from the floor or ladder, without the removal or opening of other building components such as ceiling tiles, service access door or hatches. Does not include infrequently accessed service areas of the building.
ACCESS (C) CONCEALED	Areas of the building which require the removal of a building component, including lay-in ceilings and access panels into solid ceiling systems, includes rarely entered crawlspaces, attic spaces, etc.. Observations may be limited to the extent visible from the access points.
ACCESS (D)	Areas of the building behind inaccessible solid ceiling systems, walls or mechanical equipment, etc. where demolition of the ceiling, wall or equipment, etc. is required to reach the ACM. Evaluation of condition and extent of ACM is limited or impossible, depending on the surveyor's ability to visually examine materials in ACCESS D.

APPENDIX B
ACTION MATRIX FOR THE CONTROL OF
ASBESTOS CONTAINING MATERIALS

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ACTION MATRIX FOR THE CONTROL OF ACM

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1.0 ROUTINE MAINTENANCE & BUILDING OPERATIONS

1.1 In the absence of any major maintenance activities, renovations or demolition that may lead to widespread disturbance of asbestos, the following factors shall be given due consideration in the formulation of site-specific recommendations. These are as follows:

- .1 The evaluation or viability of a specific asbestos control option shall be primarily based on the ACM's current condition and overall accessibility. The logic behind this statement is that damaged ACM located in frequently accessed areas of the building is of a higher priority than damaged ACM in an infrequently accessed area of the building.
- .2 Existing regulations and good practice require the immediate clean-up and possible abatement of areas where there is ACM in POOR condition or ACM debris, or where such materials or debris is likely to be disturbed during normal use of the space (i.e. ACM is in POOR condition, and/or DEBRIS, combined with ACCESSIBILITY A or B).
- .3 ACM in POOR condition is not routinely repairable. If an abatement action is necessary, removal is the preferred action (enclosure may also be considered in unusual circumstances).
- .4 Mechanical insulation in FAIR condition can normally be repaired or removed based on the following general recommendations applied on a case-by-case basis. Note: Either repair or removal are both legally acceptable options for the treatment of ACM found in FAIR condition.
 - (a) Repair ACM mechanical insulation found in FAIR condition in ACCESS B or ACCESS C (EXPOSED) areas.
 - (b) Remove ACM mechanical insulation found in FAIR condition in ACCESS B and ACCESS C (EXPOSED) areas, where future damage to the ACM is likely to occur.
 - (c) Removal of ACM mechanical insulation found in FAIR condition in ACCESS A is normally recommended to eliminate the potential for future re-damaging of the ACM.
- .5 Friable or potentially friable forms of ACM found in GOOD condition in ACCESS A is only subject to surveillance under existing regulations provided it is not subject to disturbance by future renovations or maintenance. However, as a matter of corporate policy all such asbestos-containing materials shall be abated on a pro-active basis wherever damage is possible by on-going occupant activity (accidental or intentional). This recommendation exceeds current regulatory requirements.
- .6 Non-friable and/or manufactured products, which are in POOR condition, must be treated the same as friable materials in POOR condition and the appropriate Action assigned.
- .7 For non-friable or manufactured products reported in GOOD condition, Action 7 (Surveillance) shall be assigned regardless of Accessibility.

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.8 Consideration may also be given to whatever other action that can practically be performed to negate the need for the implementation of an Asbestos Management Program (AMP). Such measures may include the removal of ACM prior to renovations or at any other time when a major disturbance of the ACM is anticipated. Removal may also be considered a practical measure when small quantities of ACM are present in a specific area of the building.

1.2 With these principles in mind the following Action Matrix Table shall be utilized to establish the normal recommended asbestos control action. Note that factors not included in the above discussion may result in a recommendation different from that in the following table.

ACTION MATRIX FOR FRIABLE ASBESTOS MATERIALS					
ACCESS	GOOD	CONDITION FAIR	POOR	DEBRIS	SUSPECT MATERIA L
A	Action 5/7 ¹	Action 5/6 ²	Action 3	Action 1	Action 8
B	Action 7	Action 6	Action 3	Action 1	Action 8
C (Exposed)	Action 7	Action 6	Action 4	Action 2	Action 8
C (Concealed)	Action 7	Action 7	Action 4	Action 2	Action 8
D	Action 7	Action 7	Action 7	Action 7	Action 8
¹ If ACM in ACCESS (A)/GOOD condition is not removed ACTION 7 is required.					
² If ACM in ACCESS (A)/FAIR condition is not removed ACTION 6 is required.					

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NON-FRIABLE & POTENTIALLY FRIABLE MATERIALS				
ACCESS	GOOD	CONDITION FAIR	POOR	SUSPECT MATERIAL
A	Action 7	Action 3/ ¹	Action 1	Action 8
B	Action 7	Action 3/ ¹	Action 1	Action 8
C (Exposed)	Action 7	Action 4/ ¹	Action 2	Action 8
C (Concealed)	Action 7	Action 4/ ¹	Action 2	Action 8
D	Action 7	Action 7/ ¹	Action 7	Action 8
¹ Non-friable and potentially friable ACM found in POOR condition shall be treated as friable ACM.				

LEGEND - ACTION MATRIX TABLES

ACTION 1 Immediate Clean-up	Restrict access that is likely to cause a disturbance of the ACM debris and clean-up the ACM debris immediately. Utilize correct asbestos procedures. The surveyor should immediately notify the Asbestos Programs Officer of this condition.
ACTION 2 Type 2 Entry	At locations where ACM debris cannot be practically removed or cleaned-up, restrict access to the area to persons utilizing Type 2 asbestos precautions. The precautions will be required until the ACM debris has been cleaned-up, and the source of the debris has been stabilized or removed.
ACTION 3 Removal	Removal of ACM is required to comply with existing regulations and good practice. Utilize asbestos procedures appropriate to the scope of the removal work being done.
ACTION 4 Type 2 Access	Entry to these spaces which is likely to cause disturbance of the ACM will require Type 2 procedures until the ACM is abated (use ACTION 1 or 2 if debris is present).
ACTION 5 Recommended Removal	Existing regulations do not require removal, however as a matter of corporate policy, pro-active removal is recommended to avoid any future damage to the material and the resultant concerns.

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ACTION 6 Recommended Repair	Repair ACM found in FAIR condition, but not likely to be disturbed during normal use of the area or room. Upon completion of the repair work treat the ACM as material in GOOD condition and implement ACTION 7 .
ACTION 7 Surveillance	No immediate abatement action other than the implementation of the asbestos management program, including routine surveillance and use of asbestos precautions during disturbance of the ACM.
ACTION 8 Suspect Materials	Materials that are historically known to possibly contain asbestos but either cannot be sampled due to restricted access or the need to analyze an unreasonable number of samples to confirm with confidence the presence or absence of asbestos, are identified as Suspect Material (SM) (i.e. vinyl floor tiles, smooth plaster on walls or ceilings). These suspect materials are to be considered asbestos-containing with ACTION 7 applying until subsequent sampling confirms the presence or absence of asbestos. Sampling may be most cost-effective prior to disturbance of the suspected ACM by renovation, demolition, or maintenance work.

2.0 LARGE SCALE MAINTENANCE, RENOVATION OR DEMOLITION

- 2.1 Existing regulation and good practice require that all friable and non-friable asbestos-containing materials be removed prior to any large-scale maintenance work, demolition or renovations if the ACM is, or is likely, to become disturbed.
- 2.2 Retain the services on an outside Asbestos Consulting firm (either directly or as a sub-consultant to the Prime Consultant or Architect in charge of the renovation/demolition work) to assist in the preparation of contract documents necessary to effect the safe and proper removal of all ACM subject to disturbance.
- 2.3 As a matter of corporate policy, all large-scale asbestos abatement work shall be contracted out.

APPENDIX C
ASBESTOS SURVEY REPORTS

A P P E N D I X C

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- 1.0 Acadia University has commissioned Pinchin LeBlanc Environmental Ltd to prepare an Asbestos Survey Report for all buildings owned and operated by Acadia University. Such information is considered to be in addition, to that already compiled by Acadia University for a select number of buildings where asbestos surveys have already been compiled. In addition, an initial screening report for asbestos-containing materials in the mechanical rooms of a select number of buildings has already been compiled.

For future reference, a copy of each building's initial mechanical room screening report or subsequent asbestos survey shall be maintained on file and is available for viewing at the following location(s):

- On Acadia University's own internal web page or intranet system;
- Project Management office of the Physical Plant; and
- At the office of the University's Asbestos Programs Officer.

APPENDIX D
ASBESTOS SURVEY REPORTS
(UPDATES)

A P P E N D I X D

Asbestos Management Program
Acadia University, Wolfville, Nova Scotia
ASBESTOS SURVEY REPORT (UPDATES)

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- 1.0 A copy of the latest “Asbestos Survey Up-date” as set forth under Section 5 of the AMP document to which this appendix is attached has been bound separately and is available for viewing at the following location(s):
- On the University’s own internal web page or intranet system;
 - Project Management office of the Physical Plant; and
 - At the office of the University’s Asbestos Programs Officer.

APPENDIX E
BULK SAMPLE RESULTS

Asbestos Management Program
Acadia University, Wolfville, Nova Scotia
BULK SAMPLE RESULTS

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- 1.0 The following Appendix shall be used to house a copy of all lab reports received from time-to-time as a result of any additional bulk sampling having been carried out internally by Acadia University's own employees or by an outside consulting firm.
- 2.0 Notwithstanding the attached test results, copies of the original test data collected during the initial mechanical room Screening Reports and Asbestos Surveys and/or any subsequent Asbestos Survey Updates are contained in *Appendices C & D*.
- 3.0 Additional copies of all test data are maintained on file and/or are available for viewing at the following location(s):
 - On the University's own internal web page or intranet system;
 - Project Management office of the Physical Plant; and
 - At the office of the University's Asbestos Programs Officer.

APPENDIX F
SAMPLE COLLECTION
AND ANALYSIS

A P P E N D I X F

Asbestos Management Program
Acadia University, Wolfville, Nova Scotia
SAMPLE COLLECTION & ANALYSIS

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NOTE: The following sample collection & analytical practices shall be adhered to by all personnel whether such sampling is performed internally, or through an outside consultant, as a means of ensuring a consistent approach to sample collection and analysis.

1.0 BULK SAMPLING

NOTE: The following protocol shall be adhered to whenever the collection/analysis of a suspect asbestos-containing material is performed so as to establish its asbestos content.

For sampling conducted internally by Acadia University's own staff, refer to *Appendix X* and the corresponding form for additional information and instruction.

1.1 Collection of Bulk Asbestos Samples

- 1.1.1 Prior to collecting the sample, ensure the required personal protective equipment (respirator, gloves, etc.), lagging materials or an approved encapsulant is at hand ready for use.
- 1.1.2 The worker collecting the sample need only collect a few grams (i.e. teaspoon) of the material in question.
- 1.1.3 Wherever practical, the sample should be collected during quiet hours or when the area surrounding the sampling location is unoccupied.
- 1.1.4 If the material being sampled is friable in nature (i.e. fireproofing, mechanical insulation, etc.), first spray the material in the immediate area surrounding the point of collection with a light misting of water.
- 1.1.5 Where possible, sample collection should be performed adjacent to a point of existing damage. Avoid any unnecessary contact or disturbance.
- 1.1.6 Depending on the condition of the material being sampled, significant amounts of airborne fibres can be discharged during sample collection. The use of a respirator is recommended for all sampling.
- 1.1.7 To avoid possible sample cross-contamination, ensure the knife (or any other instruments) used to collect the sample is properly cleaned using a damp rag following the collection of each individual sample.
- 1.1.8 Should additional fragments or pieces of the material being sampled break off during sample collection, the associated debris must be cleaned up using a HEPA equipped vacuum or damp rag. Unless otherwise indicated through subsequent analysis, dispose of all debris collected as asbestos-containing waste.
- 1.1.9 Place each sample collected in an independently labelled plastic bag (c/w zip-lock closure) or in a sealed plastic vial. Ensure container being used is clean and dry. The exterior of the container

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must also be wiped clean using a damp cloth to ensure the removal of any visible debris following sample collection.

1.1.10 Place each sample collected in an independently labelled plastic bag (c/w zip-lock closure) or in a sealed plastic vial. Samples shall be identified with the following information:

- Date Sampled
- Sample Number
- Sample Description (i.e. cold water piping, boiler exhaust or sprayed fire proofing, etc.)
- Location at which the sample was collected (i.e. building, room number, etc.).
- Name of the individual who collected the sample.

1.1.11 Materials of differing composition or appearance should be sampled separately. Mechanical insulation must be sampled separately on a system-by-system basis as well as differentiating between the material present on the straight runs of the piping from that present on any fittings (i.e. tees, valves, elbows, etc.).

1.1.12 Ensure full-depth samples are collected as many products such as finishing plasters or mechanical insulation often involve multiple layers of application or coatings.

1.1.13 Follow sample collection, temporarily repair jacketing or seal exposed edges of underlying insulation using metal foil tape or approved asbestos encapsulant (i.e. Serpiflex Shield or approved equivalent).

1.1.14 Record sample location on a drawing and through a system of on-site labelling where appropriate. Ensure the data outlined in paragraph 1.1.7 above is recorded on a separate piece of paper and maintained on file prior to submitting the sample to the lab.

1.2 Analysis of Bulk Asbestos Samples

1.2.1 Following collection, each sample shall be submitted to an accredited laboratory for determination of its asbestos content using a combination of dispersion staining and polarized light microscopy.

1.2.2 Sample preparation and analysis shall follow the protocol outlined by NIOSH Method 9002 for bulk asbestos analysis, and the US EPA Method 600/R-93/116 dated July, 1993.

1.2.3 Sample results must be reported based on the lower limit of quantitation for this method of 0.1% by volume. If only a few asbestos fibres are detected in the analysis the asbestos content shall be reported as less than 0.1 percent.

1.2.4 The lab shall report each sample's asbestos content based on the following chart so as to be in compliance with provincial codes:

None Detected	5% to 25%
Less than 0.1%	25% to 50%

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0.1% to 1%
1% to 5%

50% to 75%
More than 75%

2.0 AIR SAMPLING BY PCM

2.1 Sample Collection

2.1.1 Sample collection shall be performed in accordance with the National Institute of Occupational Safety & Health (NIOSH) Method 7400 dated May 15, 1996.

2.1.2 Sample volumes shall be adjusted to allow statistically valid results to be reported down to levels equal to that outlined in the following chart.

Classification of Sampling	Detection Limit
Post-asbestos abatement clearances for all Type 3 work.	<0.05 Fibres/mL
Post-asbestos abatement clearances for all Type 2 work.	<0.05 Fibres/mL
Post-abatement clean-up as performed outside a sealed work enclosure while following Type 2 precautions.	<0.05 Fibres/mL
Sampling performed adjacent to, or following, the removal of asbestos-containing pipewrap as performed by "Glove Bag" method.	<0.05 Fibres/mL
Sampling performed adjacent to, or following, the repair of asbestos-containing mechanical insulation as performed while following Type 2 precautions.	<0.05 Fibres/mL
Sampling performed within a sealed Type 2 or 3 work enclosure shall have their sample volumes adjusted based on anticipated dust levels so as to obtain a minimum fibre density of 50 fibres/mm ² .	0.1 Fibres/mL (minimum)

2.1.3 Sampling equipment shall be flow calibrated on a daily basis.

2.1.4 For each sample collected, ensure the following information is recorded:

- | | | |
|----------------------------------------|-----------------------------------------|---------------------------------|
| <input type="checkbox"/> Date Sampled | <input type="checkbox"/> Sample Number | <input type="checkbox"/> Sample |
| <input type="checkbox"/> Location | <input type="checkbox"/> Pump Number | Description (i.e. |
| <input type="checkbox"/> Sample Volume | <input type="checkbox"/> On & Off Times | personal, area, |
| | | occupied, etc.) |

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2.2 Sample Analysis

- 2.2.1 Following collection, each sample shall be submitted to an accredited laboratory for determination of its asbestos content using Phased Contrast Microscopy (PCM). Sample results shall be expressed in terms of fibres per millilitre of air (Fibre/mL).
- 2.2.2 Sample preparation and analysis shall be performed in accordance with the National Institute of Occupational Safety & Health (NIOSH) Method 7400 dated May 15, 1996. Fibre identification shall be performed using the “A” set of counting rules.
- 2.2.3 Results of air sample analysis shall be may available on a same-shift basis wherever practicable and in all instances within a twenty-four (24) hour period following sample collection.
- 2.2.4 For quality control purposes the selected lab, as well as the individual technician performing the analysis, shall be accredited for the analysis of air samples by Phase Contrast Microscopy (PCM) by one or more of the following agencies. Written proof of such accreditation must be provided upon request.
- .1 The American Industrial Hygiene Association’s Asbestos Analysts Registry (AIHA AAR)
 - .2 The Institut de recherch  Robert-Sauv  en sant  et en s curite du travail (IRSST)

2.3 Interpretation of Data

- 2.3.1 When reviewing the results obtained form any PCM sampling, it is important to note that fibres are not identified by this method. All particles greater than 5 µm in length and with a length to diameter ratio of 3:1 or greater are included in the count. Fibres with a diameter of less than 0.3 µm cannot be detected by this method regardless of their length.

3.0 AIR SAMPLING BY TEM

3.1 General Comments & Policy

- 3.1.1 As a matter of general policy, monitoring of active asbestos work sites using Transmission Electron Microscope (TEM) test methods will not be performed due to a number of concerns surrounding its use (i.e. cost, tum-around times, lack of guidelines to establish safe levels) and should only be performed with the prior approval of the Asbestos Programs Officer.
- 3.1.2 Notwithstanding the above, the use of TEM monitoring can be beneficial in instances where air sampling by PCM or FAM indicates contamination of occupied areas by fibrous dust from an unknown source. However, should such a contamination occur as the result of a clear failure to observe prescribed precautions or a visible breach in the containment system, then TEM monitoring is not recommended.

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4.0 SURFACE DUST SAMPLING

- 4.1 As a matter of general policy, collection of random dust samples from surfaces concentrated throughout any occupied areas of a building must only be undertaken with the informed consent of the University's Asbestos Programs Officer. It shall not be common practice to collect dust samples in response to a clear failure to observe prescribed precautions; in the presence of any fallen or dislodged asbestos debris; or as a result of a visible breach in a containment system. Instead, access to such areas shall be restricted to authorized personnel until such time as the attending APO has had the opportunity to fully assess the area and the required clean-up has been completed.
- 4.2 Notwithstanding the above, should it be established that such a program of sampling is indeed desirable, then the collection of such samples shall be performed while in compliance with the test methods and prescribed protocol established by the University's Asbestos Programs Officer under separate cover.

APPENDIX G
RESPIRATOR FITTING, CARE
AND INSPECTION

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RESPIRATOR FITTING, CARE AND INSPECTION

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NOTE: The following applies to the use of a Half-face Negative Pressure Air Purifying Respirator equipped with HEPA filters.

WARNING: Such respirator does not generate or have their own supply of oxygen. They must not be used in oxygen deficient atmospheres (less than 19.5%); in poorly ventilated areas or enclosed spaces such as tanks or small rooms; for abrasive blasting or fire fighting; or for protection against contaminants excluded or not covered by the applicable Approval Label.

Respirators must be approved for protection against asbestos. Check for NIOSH certification.

1.0 RESPIRATOR FITTING

- 1.1 Persons required to wear a respirators must first pass a qualitative fit-test administered in accordance with the most current version of CSA standard Z-94.4. The fit-test should be repeated yearly.
- 1.2 The respirator wearer must be clean-shaven along all the seal points for proper protection to be obtained. Even stubble growth may be sufficient to reduce the seal of the face-piece, and therefore the protection. The respirator approval is voided for users with facial hair that may interfere with the seal.

2.0 CHECK PRIOR TO EACH USE

- 2.1 Examine face-piece for any:
- dirt (clean if necessary);
 - cracks, tears or holes (obtain new face-piece);
 - distortion and inflexibility (stretch and knead to restore shape and flexibility or obtain new face-piece);
 - cracks, or breaks in filter holders, worn threads and missing gaskets (replace or obtain new face-piece).
- 2.2 Examine head straps for any:
- breaks or tears (replace if discovered);
 - loss of elasticity (replace if discovered);
 - broken or malfunctioning buckles and attachments (replace if discovered).
- 2.3 Examine valves for signs of any:
- detergent residue, dust or other material on valves or valve seats (clean before use);
 - cracks, tears or distortion in the valve material (replace if discovered);
 - missing or defective valves or valve covers (replace if discovered).

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2.4 Examine filter for:

- proper filter for protection against asbestos (High Efficiency Particulate)
- incorrect installation, loose connections, missing or worn gaskets or cross threading (remove and re-install);
- cracks or dents in filter housing (replace if discovered).

2.5 Perform the following tests for leaks on each donning of the respirator:

- negative pressure test: cover inlets to filters, breathe in and hold breath; respirator should be drawn to face for minimum of 10 seconds (if not, check exhalation valve and fit);
- positive pressure test: cover exhalation valve cover and puff out slightly and hold breath; respirator should slightly pressurize and still hold seal (if not, check inhalation valves and fit).

3.0 RESPIRATOR CLEANING AND DISINFECTION

3.1 Remove filters and disassemble face-piece. Discard or repair defective parts.

3.2 Wash components in warm water (50°C - 60°C) with mild detergent, using a brush. Respirator suppliers can provide ready-made cleaning and disinfectant solutions and instructions for use.

3.3 Thoroughly rinse components in clean, warm water.

3.4 Air dry or hand dry components with a clean, lint-free cloth.

3.5 Reassemble respirator and test to ensure that all components are working properly (see above). Be careful to check that valves are not lost in cleaning.

APPENDIX H
WORKER TRAINING
CERTIFICATE

A P P E N D I X H

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WORKER TRAINING CERTIFICATE &
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WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBRES CAN CAUSE VARIOUS TYPES OF LUNG DISEASE INCLUDING CANCER. SMOKING INCREASES THE RISK OF LUNG CANCER FROM ASBESTOS EXPOSURE.

RESPIRATOR PROTECTION: I have been supplied with a respirator and received training for its proper use including qualitative fit testing (irritant smoke). I understand that I must be free of any facial hair which may interfere with the seal of the respirator with my face.

MEDICAL EXAMINATION: Medical examinations may be required for workers performing asbestos work. I acknowledge that I may have to undergo the necessary tests as prescribed by the Department of Labour, Workplace Safety & Health Division, Occupational Health Branch.

TRAINING COURSE: I have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. The topics covered in the course included the following:

- Physical Characteristics and Use of Asbestos
- Health Hazards Associated with Asbestos
- Sampling & Analytical Methods
- Regulations Concerning Work With Asbestos
- Assessment of Asbestos-Containing Materials
- Respiratory Protection
- Use of Protective Equipment
- Work practices including hands-on or on-job training for (tick as appropriate):
 - General Procedures for Type 1, 2 & Glove Bag Work
 - Procedures for Type 1 or Low Risk Work
 - Procedures for Type 2 or Moderate Risk Work
 - Procedures for the Removal of Mechanical Insulation by Glove Bag Method
 - Personal Decontamination Procedures
 - Emergency Procedures in the Event of a Suspect Asbestos Spill
 - Procedures for Emergency Work

By signing this certificate, I acknowledge that I have received the above training and agree to follow these procedures for all work assigned to me.

EMPLOYEE NAME: _____

DATE OF TRAINING: _____

RESPIRATOR MANUFACTURER: _____ SIZE: _____

SIGNATURE: _____ DATE: _____

TRAINER: _____ DATE: _____

APPENDIX I
CONTRACTOR'S NOTIFICATION
& ACKNOWLEDGEMENT

A P P E N D I X I

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CONTRACTOR'S NOTIFICATION & ACKNOWLEDGEMENT

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WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBRES CAN CAUSE VARIOUS TYPES OF LUNG DISEASE INCLUDING CANCER. SMOKING INCREASES THE RISK OF LUNG CANCER FROM ASBESTOS EXPOSURE.

Pinchin LeBlanc Environmental Ltd. has identified the presence of various friable and non-friable asbestos-containing materials as being present throughout Acadia University facilities. For a complete listing of any asbestos-containing or suspect asbestos materials known to be present, refer to the most recent version of the asbestos survey report maintained on file by the **Asbestos Programs Officer**.

Current asbestos Codes of Practice and associated guidelines apply to all maintenance and renovation work that may disturb asbestos or suspect ACM. Such codes and guidelines state that any disturbance of ACM may only be performed by workers qualified or competent to perform such work.

The following is a partial listing of typical activities that will or may disturb known asbestos-containing materials and hence requiring the implementation of Type 1, 2 or 3 asbestos precautions. Any Contractor required to perform any of the following activities and/or similar tasks that may result in the disturbance of a known or suspect asbestos-containing materials must first obtain a signed and authorized "**Asbestos Work Permit**" (as contained in *Appendix Q*) from the **Asbestos Programs Officer**.

- Access above a suspended or enclosed ceiling system at a location where known asbestos-containing spray or trowel applied fireproofing, thermal or acoustic insulation is present.
- Access within a crawlspace, pipe chase, service area or tunnel where damaged asbestos-containing materials are known to be present.
- Work that may disturb any spray or trowel applied fireproofing, thermal or acoustic insulation known to contain asbestos.
- Work that may disturb any asbestos-containing spray or trowel applied texture coats.
- Work that may disturb any asbestos mechanical insulation (i.e. pipes, ducts, vessels, boiler, etc.).
- Removal, clean-up or repair of any asbestos mechanical insulation (i.e. pipes, ducts, vessels, boilers, etc.).
- Removal of asbestos-containing ceiling tiles.
- Removal of asbestos-containing sheet flooring products.
- Removal, cutting, drilling or other such disturbance of any non-friable asbestos materials (i.e. vinyl composite tile, asbestos hardboard, transit panelling, asbestos cement pipes, etc.)
- Demolition, cutting, drilling or other such disturbance of any plaster finishes (i.e. wall or ceiling) known to contain asbestos and/or listed as a suspect material in the above mentioned asbestos survey report.
- Other materials, as informed by subsequent notices.

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As a condition of our contract to provide services and materials to Acadia University, we, the undersigned company hereby agree to perform our work in such a manor so as **NOT** to disturb any asbestos-containing materials without prior authorization and notification of Acadia University's designated **Asbestos Programs Officer**. We further acknowledge that this firm and it's employees are: a) familiar with all requirements as set forth by Acadia University's AMP document as they may pertain to work undertaken by an outside contractor; b) will conduct our work in accordance with such requirements and in compliance with all provincial regulation or guidelines pertaining to asbestos; c) and that all asbestos waste will be packaged and disposed of at a licensed landfill.

COMPANY NAME: _____

SIGNATURE: _____ DATE: _____

NAME & TITLE: _____

APPENDIX J
LIST OF PRE-QUALIFIED
ASBESTOS CONTRACTORS

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1.0 CONTRACTOR QUALIFICATIONS

1.1 To ensure the highest standard of care is maintained at all times, only those contractors with established reputations for quality workmanship in the field of asbestos control and remediation shall be considered for work at any Acadia University owned or occupied facility.

1.2 Before a contractor may be considered for work at any Acadia University owned or occupied facility, the contractor must first be able to demonstrate his compliance with the following requirements:

- Both the firm as well as all supervisory staff must have a minimum of three (3) years prior experience in the field of asbestos control and remediation.
- All supervisory staff must hold a recognized certificate proving attendance at an asbestos removal training course (2 day minimum duration) and have performed supervisory functions on at list five (5) other asbestos abatement projects of similar size and complexity.
- The firm must carry and/or be able to provide Commercial General Liability insurance endorsed specifically to provide coverage in respect of any claim arising from the exposure, clean-up, removal, containment, testing or monitoring of asbestos. Said policy must provide coverage in an amount not less than two (2) million dollars (\$ 2,000,000.00) per occurrence and must also be issued on an Occurrence-based form.
- Be licensed to transport asbestos waste and/or demonstrate that sufficient arrangements have been secured with a licensed waste hauler to ensure proper handling and final disposal of all waste at a licensed landfill site.
- Provide proof that all employees are medically fit to don a respirator and have been fit-tested for the class of respirator appropriate to the work at hand.
- Provide proof that all employees have had instruction on the hazards of asbestos exposure, the use of respirators and training on all other aspects of asbestos controls and procedures.

2.0 PRE-QUALIFIED ASBESTOS CONTRACTORS

2.1 The following is a list of contractors whose firms meet or exceed the above noted requirements and routinely carry out business within the Wolfville area.

Asbestos Abatement Limited
 19 Pettipas Drive, Unit L
 Dartmouth, Nova Scotia, B3B 1K1
 Phone: (902) 468-5275
 Fax: (902) 468-0700
 Contact: Jeff Conrad

Donalco Atlantic
 P.O. Box 41016
 Dartmouth, Nova Scotia, B2Y 4P7
 Phone: (902) 434-8963
 Fax: (902) 433-1387
 Contact: Blair Doucette

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LIST OF PRE-QUALIFIED ASBESTOS CONTRACTORS

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Guild Contracting Specialties

45B Raddall Ave.
Dartmouth, Nova Scotia, B2B 1L4
Phone: (902) 481-7933
Fax: (902) 468-5052
Contact: Joe Josey

Superclean

P.O. Box 2650
Windsor, Nova Scotia, B0N 2T0
Phone: (902) 483-9348
Fax: (902) 468-5632
Contact: Dale Benedict

PowerVac Services

933 Cobequid Road
Waverley, Nova Scotia, B0N 2S0
Phone: (902) 860-2425
Fax: (902) 860-2629
Contact: Ian Ross

EnviroBate

342 Bluewater Rd., Unit #3
Bedford, Nova Scotia, B4B 1J6
Phone: (902) 832-0820
Fax: (902) 832-0662
Contact: Rob MacDonald

APPENDIX K
GENERAL PROCEDURES FOR
TYPE 1, 2 & GLOVE BAG WORK

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GENERAL PROCEDURES FOR TYPE 1, 2 & GLOVE
BAG WORK

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All persons required to perform Type 1, 2 or Glove Bag remedial work while present at an Acadia University owned or occupied premises, shall comply with the following procedures at a minimum.

NOTE: The following procedures shall apply equally to all classifications (i.e. Type 1, 2 or Glove Bag) of work and shall be read in conjunction with all other requirements and procedures as set forth in the AMP document to which this appendix is attached.

1.0 LOCATION OF ASBESTOS-CONTAINING MATERIALS (ACM)

- 1.1 For a general description as to the location of asbestos-containing materials known to be present throughout each building, refer to the most current version of the Asbestos Survey Report. Copies of these documents are maintained on file by the Asbestos Programs Officer and are available for viewing.
- 1.2 Should any person encounter an unexpected material or material suspect of containing asbestos that has not clearly been identified in the above referenced survey documents, work in the immediate area at risk of disturbing such a material shall be halted. Immediately notify the individual manager or project coordinator assigned to the work seeking further direction. Do not resume work until it has been determined if the material in question contain asbestos.

2.0 QUALITY ASSURANCE

- 2.1 Removal, clean-up or repair of asbestos-containing or contaminated materials is to be performed by persons trained in the methods, procedures and industry practices for Asbestos Abatement.
- 2.2 Work shall be complete in such a manner so that at no time airborne dust, visible debris, or water runoff contaminate an area outside the established Asbestos Work Area.
- 2.3 Any contamination of surrounding area (indicated by visual inspection or air monitoring) shall necessitate an immediate clean-up of affected area. The Asbestos Programs Officer (if available) shall be notified as soon as possible following such an occurrence and informed of the measures being implemented to correct the situation.

3.0 INSPECTION

- 3.1 The Asbestos Programs Office or Inspection Agency designated by the Asbestos Programs Officer, shall review each active asbestos work site a minimum of once per day as a means of ensuring worker compliance with the procedures and work practices established by the AMP document. For work undertaken by Acadia University's own staff, the frequency of the above site inspection shall be reduced to a random basis and at a minimum frequency so as to comply with standards set out by the University's Asbestos Programs Officer.
- 3.2 Ensure each site inspection conforms to the requirements set out under Section 8.0 of the AMP document to which this appendix is attached.

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GENERAL PROCEDURES FOR TYPE 1, 2 & GLOVE
BAG WORK

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4.0 MONITORING

- 4.1 The Asbestos Programs Officer or Inspection Agency designated by the Asbestos Programs Officer, shall monitor all asbestos disturbances on a daily basis to ensure worker safety and compliance with control limits established by governing authorities and as set out under Acadia University's AMP document.
- 4.2 Ensure air monitoring is performed in compliance with Section 9 and *Appendix F* of the AMP document to which this appendix is attached.

5.0 PROJECT NOTIFICATION

- 5.1 Refer to Section 11 of Acadia University's AMP for additional information and requirements.
- 5.2 Ensure all project notifications and requirements as set forth in the above document are provided in advance of any asbestos disturbance.

6.0 SCHEDULING OF WORK

- 6.1 Schedule work during quiet times approved by the individual manager or project coordinator in charge of the work and/or when the area is unoccupied. If unauthorized persons are present, do not start work.
- 6.2 Schedule work during times when any HVAC systems that may be affected by the work can be shutdown and/or are otherwise isolated.
- 6.3 If work is required on an emergency basis and the area is occupied, have the individual manager or project coordinator in charge of the work advise occupants to vacate area until work is complete and clearance is given to return to the area.

7.0 WORKER PROTECTION

7.1 General

- 7.1.1 Before entry to an Asbestos Work Area, all personnel must have undergone asbestos training.
- 7.1.2 Such training shall, at a minimum, satisfy each of the requirements as set forth under Section 10 of the Asbestos Management Program document to which this appendix is attached.
- 7.1.3 Workers shall not eat, drink, smoke or chew neither gum nor tobacco except in established areas outside the designated Asbestos Work Area.
- 7.1.4 Workers shall be protected at all times when a possibility of asbestos disturbance exists.

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7.2 Respirator Protection

- 7.2.1 Respirators used shall be certified by the National Institute of Occupational Safety and Health (NIOSH) or other testing agency acceptable to governing authorities.
- 7.2.2 Filters used shall be tested following each use in accordance with manufacturer's specifications or replaced at the following minimum frequency:
- Replace filters for negative pressure respirator every sixteen (16) hours of wear unless tested on-site.
 - Replace PAPR cartridge filters every eight (8) hours of wear unless tested on-site.
- 7.2.3 No person who has facial hair that may effect the seal between the respirator and his/her face shall be granted entry to an Asbestos Work Area.
- 7.2.4 Respirators shall be cared for in accordance with the procedures as set forth in Appendix G of the AMP document to which this appendix is attached.

7.3 Protective Clothing

- 7.3.1 All persons required to enter an Asbestos Work Area must be fitted with disposable full body coveralls with attached head covering and elastic hand and pant cuffs. Once worn within the Asbestos Work Area, dispose of as asbestos waste.

8.0 SIGNAGE/LABELLING

- 8.1 Work Area Signs: Post signs at all access points to the Asbestos Work Area. Where possible, provide signage immediately prior to entering the Asbestos Work Area, but out of public view. Letters on signs shall be in upper case "HELVETICA MEDIUM" and read as follows:

- .1 CAUTION (25 mm high)
- .2 Asbestos Hazard Area (19 mm high)
- .3 Unauthorized Entry Prohibited (19 mm high)
- .4 Wear Assigned Protective Equipment (19 mm high)
- .5 Breathing Asbestos Dust May Cause Serious Bodily Harm (19 mm high)

- 8.2 Container Signs: Label containers for the disposal of asbestos as follows:

- .1 CAUTION CONTAINS ASBESTOS FIBRES (25 mm high)
- .2 Do Not Mishandle (19 mm high)

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9.0 WASTE & MATERIAL HANDLING

- 9.1 Asbestos-containing or contaminated materials removed shall be treated, packaged, transported and disposed of as asbestos contaminated waste.
- 9.2 Materials that could tear or puncture a 6 mil (0.15 mm) polyethylene bag shall be packaged and disposed of in sealed rigid waste containers acceptable to the Asbestos Programs Officer and local landfill authority.
- 9.3 Redundant non asbestos-containing materials, rubble and debris removed during contaminated work shall be treated, packaged, and disposed of as asbestos contaminated waste. With written approval of the Asbestos Programs Officer or Designated Inspection Agency, non-porous materials may be cleaned, sprayed with a sealer and disposed of as clean waste.
- 9.4 Waste removed off-site must be transported to an approved disposal site by a hauler licensed to transport asbestos waste.
- 9.5 Transportation of all waste and materials through Occupied Areas shall be covered or placed within unmarked carts. Clean-up waste route and loading area after each load. Use asbestos abatement precautions if appropriate or requested by the Asbestos Programs Officer or Designated Inspection Agency.
- 9.6 For work undertaken by Acadia University's own employees, ensure waste is relocated at the end of each work shift to authorized areas for temporary storage. Access to this area shall remain locked when not occupied and shall be properly posted to identify the presence of asbestos waste.
- 9.7 For work completed by an outside contractor, waste must be removed off-site at the end of each work shift.
- 9.8 As the waste is removed off-site, the worker in charge of the work shall ensure a copy of the completed waste waybills is obtained from the disposal firm and submitted to the Asbestos Programs Officer. A copy of the standardized "Asbestos Waste Manifest" is provided in Appendix S and forms part of the AMP document.

10.0 PRODUCTS & FACILITIES

- 10.1 Materials and equipment must be in good condition and free of asbestos, asbestos debris, and fibrous materials. Disposable items must be of new materials only.
- 10.2 Asbestos Waste Container: Impermeable container acceptable to local landfill authority, labelled as required and comprised of the following:
- A sealed 6 mil (0.15 mm) polyethylene bag or glove bag positioned inside a second 6 mil (0.15 mm) sealed polyethylene bag.

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- A sealed 6 mil (0.15 mm) polyethylene bag or glove bag positioned inside or outside a rigid sealed container of sufficient strength to prevent perforation during filling, transportation and disposal.
- 10.3 Bridging Encapsulant: Bridging encapsulant for purpose of encapsulating remaining asbestos-containing material at locations deemed to be inaccessible by the Asbestos Programs Officer and/or his appointed representative. Product shall be colour coded bright red and be capable of withstanding surface temperature of substrate. Apply product uniformly to minimum thickness of 10 mil.
- 10.4 HEPA Vacuum: Vacuum equipped with a HEPA filtration system and the necessary fittings, tools and attachments to execute the work properly. Vacuum must also be labelled appropriately to identify that it contains asbestos dust and must never be opened except within a sealed Asbestos Work Area while following Type 2 precautions at a minimum.
- 10.5 Lock-down Agent: Sealant for purpose of trapping residual dust and shall be capable of withstanding surface temperature of substrate. Product must be compatible with replacement materials and shall leave no stain when dry.
- 10.6 Negative Air Exhaust Ducting (Flexible): Air tight tubing with metal reinforcement. Mechanically affixed each exhaust duct to the unit's exhaust with metal hose clamp. Diameter of duct to equal negative air discharge. Acceptable product: Thermalflex S-LP 10 flexible ducting as manufactured by Flexible Technologies.
- 10.7 Negative Air Unit: Portable air handling system which extracts air directly from the Asbestos Work Area and discharges air to exterior of building. Equipped as follows:
 - Pre-filter and HEPA filter. Air must pass HEPA filter before discharge.
 - Pressure differential gauge to monitor filter loading.
 - Auto shut off and warning system for HEPA filter failure.
 - Separate hold down clamps to retain HEPA filter in place during change of pre-filter.
- 10.8 Polyethylene Sheeting: 6 mil (0.15 mm) minimum thickness in sheet size to minimize joints.
- 10.9 Protective Coveralls: Disposable full body coveralls complete with hoods and elasticized hand and pant cuffs. Acceptable material: Tyvek coveralls.
- 10.10 Rip-Proof Polyethylene Sheeting: 8 mil (0.20 mm) fabric made up from 5 mil (0.13 mm) weave and two (2) layers of 1.5 mil (0.05 mm) poly-laminate in sheet size to minimize on-site seams and overlaps.
- 10.11 Wetting Agent: Non-sudzing surface active agent. Acceptable product: Aqua-Gro.

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11.0 EXECUTION

- 11.1 Refer to *Appendix L to Appendix N* of the AMP document for detailed procedures pertaining to each of the various classification of Low to Moderate Risk asbestos work (i.e. Type 1, Type 2 and Glove Bag).

APPENDIX L
PROCEDURES FOR TYPE 1 OR
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NOTE: The following Type 1 procedures assume the non-friable material being handled can be removed with relatively little debris, nor visible release of airborne dust. Generation of debris is permissible so long as the debris is maintained in a dampened state. If the work will release more than a trivial amount of loose friable debris or should visible dust be emitted during the work, do not proceed. For more information, consult the Asbestos Programs Officer to determine which of the Type 1, 2 or 3 procedures are more appropriate.

NOTE: The following procedures shall be read in conjunction with all other requirements and procedures as set forth under *Appendix K* and the body of the AMP document.

1.0 EQUIPMENT

All tools, supplies and equipment necessary for the safe and effective completion of the work must be on-site before work proceeds.

1.1 Vacuum

Use of a vacuum is optional. Wet cleaning methods may be used in place of a vacuum where deemed to be more suitable to the work at hand. If a vacuum is to be used, it must be equipped with a high efficiency particulate aerosol (HEPA) filter and must also have the necessary brushes, fittings, etc. to execute the work properly.

1.2 Respirators

As a matter of corporate policy, the use of a half-face negative pressure respirator equipped with approved filters shall be mandatory for all Type 1 or Low Risk activities. Refer to *Appendix K* for additional information and requirements.

1.3 Protective Clothing

As a matter of corporate policy, the use of re-usable or disposable clothing shall be mandatory for all Type 1 or Low Risk activities.

1.4 Other Equipment

- Barrier tape and signage – to identify extent of work area.
- Plastic sheeting (6 mil polyethylene) - to serve as a drop cloth.
- Duct tape, spray glue, etc. – to secure drop cloth in place.
- Pump sprayer with misting nozzle or alternative method to wet material before handling.
- Labelled asbestos waste bags (6 mil) or barrels – for all waste, disposable clothing, plastic, etc.
- Misc. small tools & cleaning supplies – i.e. scraper, sponge, rags, wire brush, bucket, utility knife, etc.

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2.0 SITE ACCESS & EGRESS

- 2.1 Before entering an established Asbestos Work Area, each worker shall first don an approved respirator (c/w new or tested filters), a set of disposable coveralls, hood and all other personal protective equipment deemed appropriate to the work at hand.
- 2.2 Before leaving an established Asbestos Work Area, each worker shall complete the following:
- .1 Remove any disposable coveralls and place them within a labelled asbestos waste receptacle for final disposal. If coveralls are to be re-used, pre-clean them using a HEPA vacuum prior to their removal then neatly fold them, or hang them up, at a point immediately adjacent to the point of egress.
 - .2 Once a worker's coveralls have been removed, the worker should then step across the established barricade before removing his/her respirator.
 - .3 The worker should then proceed directly to the established wash station with respirator in hand.
 - .4 Once at the wash station, the worker shall then proceed to wash-up ensuring his/her face, hands, and respirator are adequately cleaned using soap and warm water. Dispose of respirator cartridge filters in container provided unless tested on-site and approved for re-use.

3.0 PREPARATION

- 3.1 Before undertaking any asbestos-related work, a copy of a signed and approved "Asbestos Work Permit" as presented in *Appendix Q* of the AMP, must be obtained from the Asbestos Programs Officer.
- 3.2 Relocate from the area, all non-essential equipment, tools, etc..
- 3.3 Isolate the Asbestos Work Area from adjoining spaces through the placement of a taped barrier, sawhorse or by closing any doors, windows, etc. at the perimeter of each work area.
- 3.4 Isolate or otherwise shutdown HVAC system, vents and diffusers located within the Asbestos Work Area.
- 3.5 Locate any tools, supplies and equipment necessary for the safe and effective completion of the work to inside the designated Asbestos Work Area.
- 3.6 Wherever settled dust on surfaces throughout the Asbestos Work Area is likely to be disturbed, pre-clean such surfaces using a HEPA vacuum or damp cloth prior to commencing any other work in the area.
- 3.7 Before disturbing non-friable asbestos materials (excluding floor tile), cover floor and surrounding surfaces situated directly beneath the work with polyethylene sheeting of sufficient size to catch all fallen debris.

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- 3.8 Post signage at all points of entry clearly identifying the area as an Asbestos Work Site and that access by unauthorized personnel is strictly prohibited.
- 3.9 Do not proceed with any asbestos disturbance until the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

4.0 EXECUTION

4.1 Removal of Vinyl Asbestos Floor Tile

- 4.1.1 The use of a power scraper to assist in the removal of floor tile shall be strictly prohibited unless specifically approved for use by the Asbestos Programs Officer or Designated Inspection Agency.
- 4.1.2 Remove tile by wedging a heavy duty scraper in seam of two (2) adjoining tiles and gradually force edge of one (1) tile up and away from floor. While being careful not to break off pieces of tile, continue to force balance of tile upward.
- 4.1.3 Continue removal of tiles using hand tools, removing tiles intact wherever possible. When adhesive is spread heavily or is quite hard, it may prove easier to force scraper through tightly adhered areas by striking scraper handle with a hammer using blows of moderate force while maintaining scraper at a 25° to 30° angle to floor. When even this technique cannot loosen tile, removal can be simplified by heating tile thoroughly with a hot air gun until heat penetrates through tile and softens the underlying adhesive.
- 4.1.4 As the tiles are removed, place into asbestos waste receptor. Avoid any unnecessary breakage of these tiles during packaging.
- 4.1.5 After removal, scrape up remaining adhesive from floor with a hand scraper until only a thin smooth film remains. Where deposits are heavy or difficult to scrape, a hot air gun may be used. Deposit scrapings in an approved asbestos waste disposal bag. Do not dry scrape surface of adhering pieces of tile.
- 4.1.6 On completion of removal in each work area, clean floor surface with HEPA vacuum or wet mop.
- 4.1.7 Dispose of mop head as contaminated waste or store this and other materials which cannot be cleaned effectively in a labelled polyethylene bag until needed again (open only inside an Asbestos Work Area).
- 4.1.8 Proceed with the dismantlement of any barricades only after the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

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4.2 Installing, Cutting or Drilling Non-Friable Asbestos Materials

- 4.2.1 Work requiring the use of any power tools (except a power drill) not equipped with a HEPA filter dust collector, must not be performed as Type 1 work.
- 4.2.2 Where possible wet all materials to be disturbed.
- 4.2.3 Immediately place waste into approved asbestos waste receptor. Clean area frequently during work with HEPA vacuum or by wet methods.
- 4.2.4 At completion of work, clean drop sheets to be re-used with HEPA vacuum or by wet methods.
- 4.2.5 Drop sheets not cleaned shall be disposed of as asbestos waste.
- 4.2.6 Proceed with the dismantlement of any barricades only after the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

4.3 Removal of Other Non-Friable Asbestos Materials

- 4.3.1 The following Type 1 procedures apply only to materials that can be removed intact, or in sections, without producing any pulverized or powdered waste. This method is most applicable to the removal of asbestos-cement hardboard panelling (i.e. transite), mechanical gaskets, limited quantities of drywall joint compound and some forms of perforated ceiling tiles.
- 4.3.2 Wet all material to be disturbed, ceiling tiles excepted.
- 4.3.3 Undo fasteners necessary to remove material. Whenever possible, remove asbestos-cement panels intact. Break only if unavoidable. If broken, maintain freshly exposed edges in a dampened state.
- 4.3.4 Where sections are adhered to substrate, wet material and use hand scraping to remove adhering material.
- 4.3.5 Place removed material into approved asbestos waste receptor. Clean surrounding surfaces and Asbestos Work Area frequently with HEPA vacuum or with wet methods provided all cleaning rags are disposed of as asbestos waste.
- 4.3.6 Drop sheets that are not cleaned shall be disposed of as asbestos waste.
- 4.3.7 Proceed with the dismantlement of any barricades only after the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

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4.4 Removal or Working with Asbestos-Containing Plaster Finishes

- 4.4.1 For installing hangers or fixtures where only surface contact, and no physical disturbance of the plaster or base coat is necessary then no special requirements are needed.
- 4.4.2 For patching holes or filling cracks in walls where no removal or disturbance of the plaster is required then no special requirements are needed.
- 4.4.3 For direct installation of hangers, fixtures, etc. (penetration such as hammering or screwing into wall only, no reverse drilling or removal of fasteners permitted) in which cases, plaster will not become airborne, then no special requirements are needed.
- 4.4.4 For operations installing hangers or fixtures which require pre-drilling into the wall with drill bits not exceeding 13mm in diameter then the following procedures are to be used:
- .1 Place a drop sheet on the floor surface directly below the area to be drilled.
 - .2 A HEPA equipped vacuum is to be used during the drilling operation to collect any dust or particles that may be generated.
- 4.4.5 For operations that involve coring holes or removing sections of plaster **less than 1 square foot in size** then the following procedures are to be used:
- .1 Work is to be performed by personnel trained in the proper work procedures.
 - .2 The air handling systems (if present and operating) servicing the immediate work area is to be disabled.
 - .3 Workers are to wear properly assigned respiratory protection.
 - .4 Isolate the work area.
 - .5 Place a drop sheet on the floor surface directly below the area to be drilled, cored, or cut.
 - .6 A HEPA equipped vacuum is to be used during the operation to collect any dust or particles that may be generated.

**CHECKLIST FOR TYPE 1
OR LOW RISK WORK**

Checklist for Type 1 or Low Risk Work

The following checklist should be used to ensure all requirements as set forth by the AMP document for Type 1 or Low Risk work have been complied with before, during and following any asbestos disturbance.

1. The required "Asbestos Work Permit" as contained in *Appendix Q* of the AMP document has been obtained from the Asbestos Programs Officer.
2. Arrangements have been made with the Asbestos Programs Officer and/or Designated Inspection Agency to complete any required site inspections or air monitoring during the abatement process.
3. All non-essential equipment and personnel have been removed from the established work area.
4. The area affected by the work has been isolated from adjoining areas of the building and the required signage has been posted identifying the site as an "Asbestos Work Area".
5. Adjoining surfaces and equipment (excluding floor tile) have been covered with a polyethylene drop cloth.
6. Personal protective equipment (i.e. disposable coveralls, respirators, etc.) has been provided to all workers.
7. Required tools, equipment and waste receptacles have been located within the established work area.
8. HVAC systems, vents and diffusers within the Asbestos Work Area have been shutdown or otherwise isolated.
9. Suitable wash facilities have been located immediately adjacent to or near the established work area.
10. Written authorization to proceed with the contaminated phase of the work has been received from the Asbestos Programs Officer and/or Designated Inspection Agency.
11. Non-asbestos dust on surfaces likely to be disturbed has been pre-cleaned using a HEPA vacuum or damp cloth.
12. Where possible, wet all asbestos-containing materials to be disturbed.
13. Maintain established work area free of accumulated waste, dust or debris. All material removed shall be placed directly into approved and labelled asbestos waste receptacles as the work progresses.
14. Drop sheets that will be re-used have been cleaned or placed within a sealed and labelled polyethylene bag.
15. Final clean the work area to remove any visible trace of dust or debris.
16. Continue to restrict access to the work area and maintain perimeter barricades in place until the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.
17. An "Asbestos Work Report" as contained in *Appendix R* of the AMP document has been filed with the Asbestos Programs Officer detailing the extent of asbestos work completed and the location of any remaining asbestos-containing materials.

APPENDIX M
PROCEDURES FOR TYPE 2 OR
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NOTE: The following procedures shall be read in conjunction with all other requirements and procedures as set forth under *Appendix K* and the body of the AMP document.

1.0 EQUIPMENT

All tools, supplies and equipment necessary for the safe and effective completion of the work must be on-site before work proceeds.

1.1 Vacuum

An asbestos-approved vacuum (HEPA filtered), equipped with miscellaneous brushes, fittings, etc.. Vacuum must not be opened, except by a fully protected worker while within a sealed Type 2 enclosure.

1.2 Respirators

The use of a negative pressure non-powered half-face respirator equipped with HEPA cartridge filters shall be mandatory for all work performed within an established Type 2 work area.

1.3 Other Equipment

- Plastic sheet (6 mil polyethylene) – to erect a total enclosure and to serve as a drop sheet.
- Wood framing or clips to support polyethylene sheeting as may be appropriate to work at hand.
- Duct tape to fasten plastic enclosure to ceiling, walls, or to tape drop sheet to floor; 3/4" double-sided tape recommended for attaching polyethylene to T-bar ceiling and floor surfaces.
- Labelled asbestos waste bag (6 mil) – for all asbestos waste, disposable suits, plastic for disposal, etc..
- Pump sprayer with misting nozzle or alternative method to wet material before handling.
- Barrier tape and signage – to identify extent of work area.
- Misc. small tools – i.e. scrapers, wire brushes, utility knives, hammer, nails, stapler and staples, etc..
- Cleaning supplies – i.e. scouring pads, sponges, rags, brushes, buckets, etc..
- Insulation repair supplies (lagging compound, canvas, PVC covers).
- Encapsulating sealer, for brush or airless spray application.

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2.0 SITE ACCESS & EGRESS

- 2.1 Before entering Asbestos Work Area, each worker shall first don an approved respirator with new or tested filters, coveralls and all other personal protective equipment deemed appropriate to the work at hand.
- 2.2 Before leaving the Asbestos Work Area, remove contamination from protective clothing and equipment using a HEPA vacuum or damp cloth.
- 2.3 Immediately after exiting the Asbestos Work Area, each worker shall complete the following:
- .1 Notwithstanding the above, and wherever an attached airlock has been provided, each worker shall reseal the curtained doorway upon exiting the Asbestos Work Area.
 - .2 Remove contaminated clothing and place it into a labelled asbestos waste container for disposal.
 - .3 Clean contaminated footwear, hard hats, etc., or place into a sealed polyethylene bag for re-use.
 - .4 Wash hands in wash bucket provided for this purpose.
- 2.4 Following the above, remove respirator then proceed directly to wash station and complete the following:
- .1 Notwithstanding the above, and wherever an attached airlock has been provided, each worker shall exit the airlock and reseal curtain doorway before removing their respirator.
 - .2 Wash exposed skin and respirator with soap and water.
 - .3 Seal inlet side of respirator filters with tape then remove filters for testing or dispose of as asbestos contaminated waste.

3.0 PREPARATION

- 3.1 Before undertaking any asbestos-related work, a copy of a signed and approved "Asbestos Work Permit" as contained in *Appendix Q* of the AMP document must be obtained from the Asbestos Programs Officer.
- 3.2 Shutdown ventilation systems to and from the work area. Seal over all ventilation openings, diffusers, grilles, etc., with polyethylene and tape.
- 3.3 Wherever any non-asbestos dust settled on surfaces throughout the Asbestos Work Area is likely to be disturbed, pre-clean such surfaces using a HEPA vacuum or damp cloth prior to commencing any other work in the area.

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- 3.4 Where practical, clear areas of movable furnishings and equipment. This should include anything which occupants may wish to use during the work period. Any furnishings or equipment not removed shall be adequately covered and sealed over using polyethylene and tape. The intent of the protection is to provide an airtight envelope to protect the articles from airborne dust or splashed debris, water, sealer, etc..
- 3.5 For small rooms, cover walls with polyethylene such that the complete room becomes the work area. For larger rooms, erect enclosure of polyethylene of suitable dimensions to enclose the work area and any scaffolds or ladders that may be required to gain access. If a suspended ceiling is present, the enclosure shall extend to the u/s of ceiling line. The enclosure shall be as airtight as conditions permit including the provision of a double overlapping flap at the entrance. The floor of the work area shall be covered with a layer of polyethylene sealed to the plastic walls of the enclosure.
- 3.6 At locations where a sealed work enclosure has been erected, provide an attached airlock to facilitate access and egress to and from the work area while minimizing any air movement.
- 3.7 Install temporary lighting to provide for safe and effective completion of the work.
- 3.8 At locations where a sealed Type 2 enclosure has been provided, establish negative pressure within the Asbestos Work Area as follows:
- .1 Provide a minimum of two (2) HEPA vacuums or required number of negative pressure units within each work area.
 - .2 Operate vacuums (or negative pressure units) continuously from this point until completion of site dismantlement.
 - .3 Provide additional vacuums (or negative air units) as necessary to maintain desired pressure drop and to ensure at all times air movement at perimeter of enclosure flows inward into the work area.
- 3.9 Locate any additional tools, supplies and equipment necessary for the safe and effective completion of the work to the designated Asbestos Work Area.
- 3.10 Post signs or barrier tape to indicate asbestos hazard and requirement for protective clothing for anyone entering the space.
- 3.11 Do not proceed with any asbestos disturbance until the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

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4.0 EXECUTION

4.1 Asbestos Removal, Clean-up or Ceiling Entry

- 4.1.1 Thoroughly wet asbestos-containing materials to be removed both prior to and throughout the removal process, ceiling tiles excepted.
- 4.1.2 Remove dust and loose friable material likely to be disturbed in the process of doing the work, with a HEPA vacuum or by damp wiping.
- 4.1.3 To remove mechanical insulation, first wet any area of damage, then carefully cut exterior jacket. Keep exposed surface of insulation wet. Remove insulation in large sections and place immediately in disposal bag. After all large pieces have been removed, saturate debris on mechanical equipment and clean all exposed surfaces with abrasive pads, sponges, cloths, etc..
- 4.1.4 Remove ceiling tiles required to complete work by carefully removing first tile and vacuum while still in a horizontal position. Vacuum other tiles to be removed while still in place and prior to removing from grid. Do not break tiles or allow them to drop to the floor.
- 4.1.5 Ensure complete saturation of spray or trowel applied materials before removal. Place materials removed directly into a waste container. Do not allow scrapped materials or debris to fall to the floor.
- 4.1.6 When asbestos material is removed, all pieces should be placed directly into an approved asbestos waste receptacle as each piece is removed. Avoid dropping material to floor wherever possible. After bulk removal is complete, brush clean completely, and wet wash the exposed surface.
- 4.1.7 Frequently, and at regular intervals during the work, clean-up dust, waste materials and debris throughout the work area by wet mopping or by HEPA vacuuming.
- 4.1.8 After the completion of any mechanical insulation removal, seal exposed ends of insulation with heavy coating of encapsulant.
- 4.1.9 At completion of work, decontaminate work enclosure, any equipment, tools and materials used in the work area by wet cleaning or HEPA vacuum.
- 4.1.10 Apply a generous coating of lock-down agent (sealer) to surfaces from which any asbestos material was removed and to any polyethylene.
- 4.1.11 Where ceiling tiles were removed to facilitate work in the ceiling space above, re-establish such tiles before exiting the work enclosure.
- 4.1.12 Do not dismantle the work enclosure until after the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

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4.2 Repair of Damaged Asbestos-Containing Mechanical Insulation

- 4.2.1 A sealed work enclosure is not required for areas where repair of mechanical insulation alone is to be performed. Floor and equipment in the vicinity of work must however be covered with polyethylene drop sheets prior to commencement of repairs.
- 4.2.2 Spray surface of insulation to be repaired and adjacent material with amended water to reduce dust generation prior to patching or repair.
- 4.2.3 Saturate fully all material that must be removed to accommodate installation of patch or repairs and place directly into asbestos waste container for disposal. Do not allow material removed to fall to the floor.
- 4.2.4 Repair insulation using eight (8) oz. canvas pasted with lagging and overcoat of flame resistant coating.
- 4.2.5 Extend new canvas finish 12" (300 mm) either side of damaged area.
- 4.2.6 Paint repaired areas to match existing finishes.
- 4.2.7 HEPA vacuum fallen ACM, settled dust, etc., from surfaces throughout the Asbestos Work Area prior to and throughout the course of the work.
- 4.2.8 Proceed with the dismantlement of any barricades only after the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

4.3 Removal of Sheet Flooring

- 4.3.1 Remove binding strips or other restrictive mouldings.
- 4.3.2 Make series of cuts 100 to 200 mm (4" to 8") apart through top layers and about halfway through felt backing, parallel to wall.
- 4.3.3 Pry up corner of a strip at end of room furthest from access to work area.
- 4.3.4 Pull sheet back upon itself along with any adhering felt backing which remains adhered to top layers.
- 4.3.5 Roll strip face out into tight roll, tape or tie, and place into asbestos waste container.
- 4.3.6 Remove maximum of three (3) strips before wet scraping residual exposed felt underlay.
- 4.3.7 Remove remaining adhered underlay by wet scraping as follows:
 - .1 Soak area with water applied by sprayer.

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- .2 Allow water to penetrate felt.
 - .3 Scrape off remaining material.
 - .4 Place scrapings in asbestos waste container.
 - .5 Allow floor to dry. Clean with HEPA vacuum.
- 4.3.8 Treat all materials removed as ACM and dispose of as such. If materials or equipment removed to access sheet flooring are to be re-used, wet clean or vacuum.
- 4.3.9 Wet clean entire enclosure, including equipment, floor and wall surfaces, mechanical equipment and similar items not covered with polyethylene sheeting.
- 4.3.10 Apply coat of sealer to surface of floor and to any surfaces covered by polyethylene.
- 4.3.11 Do not dismantle the work enclosure until after the final air clearance results are made available and the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.
- 4.4 Site Dismantlement & Clean-up**
- 4.4.1 Carefully roll polyethylene inward onto itself. As polyethylene is rolled away from underlying finishes, immediately remove any visible debris using a HEPA vacuum or damp cloth.
- 4.4.2 Place polyethylene, tape, cleaning material, clothing and other contaminated waste in approved waste receptacle and dispose of as asbestos waste.
- 4.4.3 Equipment used in contaminated Asbestos Work Area shall be washed to remove any visible signs of asbestos contamination.
- 4.4.4 Dismantle and remove from the area, temporary framework used to support polyethylene.
- 4.4.5 Immediately upon shutdown of negative air unit(s), seal air inlet grill and exhaust vent with polyethylene and tape. Dispose of unit pre and intermediate filters as asbestos contaminated waste.
- 4.4.6 Seal vacuum hoses and fittings, flexible ductwork and any tools unable to be properly cleaned in a polyethylene bag prior to removal from work area.
- 4.4.7 Vacuum and/or wash and mop with clean water all floor surfaces throughout the work area.

**CHECKLIST FOR TYPE 2
OR MODERATE RISK WORK**

Checklist for Type 2 or Moderate Risk Work

The following checklist should be used to ensure all requirements as set forth by the AMP document for Type 2 or Moderate Risk work have been complied with before, during and following any asbestos disturbance.

1. The required "Asbestos Work Permit" as contained in *Appendix Q* of the AMP document has been obtained from the Asbestos Programs Officer.
2. Arrangements have been made with the Asbestos Programs Officer and/or Designated Inspection Agency to complete any required site inspections or air monitoring during the abatement process.
3. All non-essential equipment and personnel have been removed from the established work area.
4. The area affected by the work has been isolated from adjoining areas of the building and the required signage has been posted identifying the site as an "Asbestos Work Area".
5. Adjoining surfaces and equipment (excluding sheet flooring) have been covered with a polyethylene drop cloth.
6. Personal protective equipment (i.e. disposable coveralls, respirators, etc.) has been provided to all workers.
7. Required tools, equipment and waste receptacles have been located within the established work area.
8. HVAC systems, vents and diffusers within the Asbestos Work Area have been shutdown or otherwise isolated.
9. Suitable wash facilities have been located immediately adjacent to or near the established work area.
10. Written authorization to proceed with the contaminated phase of the work has been received from the Asbestos Programs Officer and/or Designated Inspection Agency.
11. Non-asbestos dust on surfaces likely to be disturbed has been pre-cleaned using a HEPA vacuum or damp cloth.
12. Wet all asbestos-containing materials to be disturbed.
13. Maintain established work area free of accumulated waste, dust or debris. All material removed shall be placed directly into approved and labelled asbestos waste receptacles as the work progresses.
14. Drop sheets that will be re-used have been cleaned or placed within a sealed and labelled polyethylene bag.
15. The work area has been final cleaned to remove any visible trace of dust or debris.
16. Continue to restrict access to the work area and maintain sealed work enclosure and/or barricades in place until the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.
17. An "Asbestos Work Report" as contained in *Appendix R* of the AMP document has been filed with the Asbestos Programs Officer detailing the extent of asbestos work completed and the location of any remaining asbestos-containing materials.

APPENDIX N
PROCEDURES FOR THE REMOVAL OF
MECHANICAL INSULATION BY
GLOVE BAG METHOD

Asbestos Management Program
Acadia University, Wolfville, Nova Scotia
PROCEDURES FOR THE REMOVAL OF MECHANICAL
INSULATION BY GLOVE BAG

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The following procedures are to be adhered to by all persons required to complete any removal of mechanical pipewrap insulation performed by glove bag method.

NOTE: The following procedures shall be read in conjunction with all other requirements and procedures as set forth under *Appendix K* and the body of the AMP document.

NOTE: The following procedures assume the quantity, access and overall configuration of the piping from which the insulation is being removed is suited to removal by glove bag method. If in the opinion of the Asbestos Programs Officer and/or Designated Inspection Agency such work can not be completed safely, complete the work from within a sealed Type 2 Enclosure or in the alternative, from within a Full Enclosure (Type 3) be an outside contractor experienced in such work.

1.0 EQUIPMENT

All tools, supplies and equipment necessary for the safe and effective completion of the work must be on-site before work proceeds.

1.1 Glove Bag

Single use prefabricated, 0.25 mm (10 mil) minimum thickness polyvinylchloride bag with integral 0.25 mm (10 mil) thick polyvinylchloride gloves and elasticized ports. Bag must be equipped with reversible double-pull, double throw, zipper to facilitate progressive movement along pipe and also be equipped with interior zip and nylon straps for sealing ends of bag around pipe. Acceptable product: Safe-T-Strip manufactured by Asbesguard Equipment Inc., in configurations suitable for work.

1.2 Vacuum

An asbestos-approved vacuum (HEPA filtered), equipped with miscellaneous brushes, fittings, etc.. Vacuum must not be opened, except by a fully protected worker while within a sealed Type 2 enclosure.

1.3 Respirators

The use of a negative pressure non-powered half-face respirator equipped with HEPA cartridge filters shall be mandatory for all worker required to enter or complete work within an established Asbestos Work Area.

1.4 Knife

Utility knife with fully retractable blade for use inside a glove bag and/or wire cut saw.

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Acadia University, Wolfville, Nova Scotia
PROCEDURES FOR THE REMOVAL OF MECHANICAL
INSULATION BY GLOVE BAG

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1.5 Other Equipment

- Plastic sheet (6 mil polyethylene) – to wrap damaged sections of piping or to serve as a drop sheet.
- Labelled asbestos waste bag (6 mil) – for all asbestos waste, disposable suits, plastic for disposal, etc..
- Pump sprayer with misting nozzle or alternative method to wet material before handling.
- Barrier tape and signage – to identify extent of work area.
- Misc. small tools – i.e. scrapers, wire brushes, utility knives, duct tape, etc..
- Cleaning supplies – i.e. scouring pads, sponges, rags, brushes, buckets, etc..
- Encapsulating sealer, for brush or airless spray application.

2.0 SITE ACCESS & EGRESS

- 2.1 Before entering an established Asbestos Work Area, each worker shall first don an approved respirator (c/w new or tested filters), a set of disposable coveralls, hood and all other personal protective equipment deemed appropriate to the work at hand.
- 2.2 Before leaving an established Asbestos Work Area, each worker shall complete the following:
- .1 Remove any disposable coveralls and place them within a labelled asbestos waste receptacle for final disposal. If coveralls are to be re-used, pre-clean them using a HEPA vacuum prior to their removal then neatly fold them, or hang them up, at a point immediately adjacent to the point of egress.
 - .2 Once a worker's coveralls have been removed, the worker should then step across the established barricade before removing his/her respirator.
 - .3 The worker should then proceed directly to the established wash station with respirator in hand.
- 2.3 Once at the wash station, the worker shall then proceed to wash-up ensuring his/her face, hands, and respirator are adequately cleaned using soap and warm water. Dispose of respirator cartridge filters in container provided unless tested on-site and approved for re-use.

3.0 PREPARATION

- 3.1 Before undertaking any asbestos-related work, a copy of a signed and approved "Asbestos Work Permit" as contained in *Appendix Q* of the AMP document must be obtained from the Asbestos Programs Officer.
- 3.2 Shutdown ventilation systems to and from the work area. Seal over all ventilation openings, diffusers, grilles, etc., with polyethylene and tape.

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PROCEDURES FOR THE REMOVAL OF MECHANICAL
INSULATION BY GLOVE BAG

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- 3.3 Wherever any non-asbestos dust settled on surfaces throughout the Asbestos Work Area is likely to be disturbed, pre-clean such surfaces using a HEPA vacuum or damp cloth prior to commencing any other work in the area.
- 3.4 Where practical, clear areas of movable furnishings and equipment. This should include anything which occupants may wish to use during the work period. Any furnishings or equipment not removed shall be adequately covered using polyethylene and tape.
- 3.5 Isolate the Asbestos Work Area from adjoining spaces through the placement of a taped barrier, sawhorse or by closing any doors, windows, etc. at the perimeter of each work area.
- 3.6 Locate any additional tools, supplies and equipment necessary for the safe and effective completion of the work to the designated Asbestos Work Area.
- 3.7 Post signs or barrier tape to indicate asbestos hazard and requirement for protective clothing for anyone entering the space.
- 3.8 Do not proceed with any asbestos disturbance until the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

4.0 EXECUTION

- 4.1 Provide polyethylene drop sheet under piping where damaged or unjacketed insulation is present.
- 4.2 Spray surface of damaged jacketing with mist of amended water then tape over area of damage to provide temporary repair.
- 4.3 Mist areas of insulation with no jacketing and wrap with polyethylene.
- 4.4 Clean surface of pipe or minor amounts of fallen insulation by HEPA vacuuming or by damp wiping.
- 4.5 Place tools necessary to remove insulation in tool pouch then zip bag onto pipe and seal ends of bag with cloth securing straps. For valve glove bags, seal valve cover with wire tie or equivalent.
- 4.6 Place hands into gloves and use necessary tools to remove insulation from pipe.
- 4.7 Arrange insulation in bag to obtain full capacity of bag.
- 4.8 Roll jacketing carefully to minimize the possibility of ripping or puncturing bags.
- 4.9 Insert nozzle of spray pump into bag through valve and wash down pipe and interior of bag thoroughly. Alternate use of each hand to aid washing process.

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PROCEDURES FOR THE REMOVAL OF MECHANICAL
INSULATION BY GLOVE BAG

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- 4.10 Wet surface of insulation in lower section of bag and any exposed end of insulation remaining on pipe.
- 4.11 If bag is to be removed from pipe for use at a new location, seal closure strips from inside of bag then insert nozzle of HEPA vacuum into valve opening and evacuate air from balance of bag. Re-install and seal in new location before re-opening closure strips. Repeat insulation removal operation.
- 4.12 If bag is to be moved along the same pipe, insert nozzle of HEPA vacuum into valve opening and evacuate air from bag prior to loosen holding straps then carefully move bag along length of pipe and re-seal to pipe. Using double-pull zipper to pass hangers. Repeat insulation removal operation.
- 4.13 Should the glove bag become ripped, cut or opened in any way, cease work and repair opening before continuing work. If the rip, cut or opening cannot be easily repaired, dispose of as contaminated waste and replace with new.
- 4.14 Spilled material must be cleaned up using a HEPA vacuum immediately upon discovery.
- 4.15 To remove bag after completion of insulation removal or as each bag is filled:
- .1 Wash top section of glove bag and tools thoroughly.
 - .2 Place tools in one hand (glove), then pull out inverted, twist to create a separate pouch, tape inverted hand at two (2) separate locations 1" apart to seal pouch.
 - .3 Remove inverted glove and tools by cutting between the two (2) tape seals.
 - .4 Place inverted glove and tools into the next clean glove bag to be used or into a water bucket, open pouch underwater and clean tools and then allow to dry.
 - .5 Insert nozzle of HEPA vacuum into valve opening and evacuate air from bag. Remove nozzle from valve opening and seal over end of valve with tape.
 - .6 Pull a 6 mil polyethylene bag over glove bag before removing from pipe.
 - .7 Remove securing straps, unfasten zipper and place sealed glove bag into a sealed 6 mil polyethylene bag so as to create an asbestos waste container.
- 4.16 Ensure that newly exposed sections of pipe are free of residue before resuming removal work or leaving the area. If necessary, after removal of each section of asbestos, vacuum all surfaces of pipe, using HEPA filtered vacuum equipment or wet wipe with damp cloth.
- 4.17 Before completion of shift, seal surfaces of exposed pipe with lock-down agent to seal any residual fibres.

Asbestos Management Program Acadia University, Wolfville, Nova Scotia PROCEDURES FOR THE REMOVAL OF MECHANICAL INSULATION BY GLOVE BAG	Appendix: N Page: 5 of 5 Issue: 01 Amendment 00 Date: April, 2008
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- 4.18 Cover exposed ends of remaining asbestos insulation with heavy coat of bridging encapsulant.
- 4.19 Remove drop sheet and dispose of as contaminated waste.
- 4.20 Proceed with the dismantlement of any barricades only after the results of any final air clearances are made available and the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

**CHECKLIST FOR THE REMOVAL OF
MECHANICAL INSULATION
BY GLOVE BAG METHOD**

Checklist for Glove Bag Work

The following checklist should be used to ensure all requirements as set forth by the AMP document for Glove Bag removal work have been complied with before, during and following any asbestos disturbance.

1. The required "Asbestos Work Permit" as contained in *Appendix Q* of the AMP document has been obtained from the Asbestos Programs Officer.
2. Arrangements have been made with the Asbestos Programs Officer and/or Designated Inspection Agency to complete any required site inspections or air monitoring during the abatement process.
3. All non-essential equipment and personnel have been removed from the established work area.
4. The area affected by the work has been isolated from adjoining areas of the building and the required signage has been posted identifying the site as an "Asbestos Work Area".
5. Adjoining surfaces and equipment have been covered with a polyethylene drop cloth.
6. Personal protective equipment (i.e. disposable coveralls, respirators, etc.) has been provided to all workers.
7. Required tools, equipment and waste receptacles have been located within the established work area.
8. HVAC systems, vents and diffusers within the Asbestos Work Area have been shutdown or otherwise isolated.
9. Suitable wash facilities have been located immediately adjacent to or near the established work area.
10. Written authorization to proceed with the contaminated phase of the work has been received from the Asbestos Programs Officer and/or Designated Inspection Agency.
11. Non-asbestos dust on surfaces likely to be disturbed has been pre-cleaned using a HEPA vacuum or damp cloth.
12. Wet all asbestos-containing materials to be disturbed.
13. Drop sheets that will be re-used have been cleaned or placed within a sealed and labelled polyethylene bag.
14. The work area has been final cleaned to remove any visible trace of dust or debris.
15. Continue to restrict access to the area and maintain barricades in place until the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.
16. An "Asbestos Work Report" as contained in *Appendix R* of the AMP document has been filed with the Asbestos Programs Officer detailing the extent of asbestos work completed and the location of any remaining asbestos-containing materials.

APPENDIX O
PROCEDURES IN THE EVENT
OF A SUSPECT ASBESTOS SPILL

Asbestos Management Program
Acadia University, Wolfville, Nova Scotia
EMERGENCY PROCEDURES IN THE EVENT OF A
SUSPECT ASBESTOS SPILL

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The following procedures shall be adhered to in the event that any asbestos or suspect asbestos-containing materials are encountered, damaged or are otherwise disturbed during routine maintenance, construction, etc..

1. Immediately stop work in the area and notify the Asbestos Programs Officer or Designated Inspection Agency should any unexpected materials or materials suspect of containing asbestos be encountered. Do not clean-up, cover, move or otherwise disturb the suspect asbestos-containing material in question.
2. Have the Asbestos Programs Officer, or others in his/her absence, advise occupants to vacate the area.
3. Where practical, or where such actions will not interfere with established emergency or fire routes, isolate the area in question by closing and locking all perimeter exists. In the alternative, workers shall establish a tape or rope barricade c/w necessary signage at all points of entry.
4. The Asbestos Programs Officer or others in his/her absence shall make arrangements to shutdown ventilation systems to or from the affected area.
5. The Asbestos Programs Officer shall then determine if the material in question contains any asbestos, the extent of any contamination (if any) to surrounding areas and the desired course of action. If necessary, the Asbestos Programs Officer shall collect a representative sample of the material (debris) in question and have it submitted for analysis at a laboratory that meets or exceeds the requirements set forth under *Appendix F* of the AMP document.
6. Should the material (debris) in question be determined to be asbestos, the affected area shall be cleaned-up while following the appropriate asbestos precautions (i.e. Type 1, 2 or 3) as prescribed by the Asbestos Programs Officer.
7. Do not resume work in the area until it has been determined if the material in question contains asbestos, the required clean-up (if necessary) has been completed, and that authorization to return to the area has been given.

In case of any emergency maintenance work, work shall proceed as set forth in *Appendix P*.

APPENDIX P

**PROCEDURES FOR
EMERGENCY WORK**

A P P E N D I X P

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Acadia University, Wolfville, Nova Scotia
PROCEDURES FOR EMERGENCY WORK

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In the event that standard Type 2 or Glove Bag procedures cannot strictly be observed due to the urgency of the situation to which the workers are responding, some judgement will be required of the person responsible for the work, and other staff or contractors responding to the emergency. The general principles of emergency response work is to protect the workers performing the repairs and to minimize the exposure of others to airborne asbestos. The procedures given below should be followed to the extent possible or modified as required given the specific circumstances surrounding each emergency.

1. Clear area of all non-essential personal. Provide personal protective gear to all persons required to remain.
2. Isolate the affected area by establishing a perimeter barricade (i.e. by placing a rope or tape barrier) or by closing all exits, windows, doors, etc.. If time permits, post signage at all points of entry clearly identifying the area as being temporarily off limits to all personal.
3. Shut down ventilation systems servicing or otherwise affected by the emergency work.
4. Worker(s) responding to the emergency shall wear protective respirator and disposable coveralls. If normal work clothes are worn they must be laundered or disposed of following the completion of the repairs.
5. Provide drop sheet in the immediate area of the work to minimize contamination and to aid clean-up efforts.
6. Wherever the use of water does not pose an additional hazard to the workers performing the repairs, workers shall ensure the asbestos or suspect asbestos-containing material in question is saturated both prior to and throughout its disturbance.
7. Perform emergency repairs with minimum disturbance of asbestos.
8. As workers are required to exit the controlled work area, other than on an emergency basis (i.e. explosion, fire, etc.) each worker shall first wipe off or vacuum clean all protective gear and footwear. If disposable coverall were used, they shall be removed prior to exiting the work area. Worker shall then proceed to a pre-established wash area and wash-up.
9. Notify the Asbestos Programs Officer of the need to have performed emergency repairs and obtain his/her direction as to the extent of required clean-up and desired course of action while continuing to restrict access to the area in question.
10. Obtain the necessary asbestos abatement equipment then proceed with a clean-up of the affected area and in a manner consistent with the direction provided by the Asbestos Programs Officer or Designated Inspection Agency. At a minimum, such an efforts must address the clean-up of all visible debris and/or settled dust in the immediate area of the repairs. Dispose of all waste materials and cleaning supplies as contaminated waste.
11. Proceed with the dismantlement of any barricades only after the results of any final air clearances are made available and the Asbestos Programs Officer or Designated Inspection Agency has reviewed the area and his/her subsequent authorization to proceed is granted.

The above emergency procedure would in most instances be appropriate in the event of a breach or failure of a Type 2, Glove Bag or Type 3 enclosure.

APPENDIX Q
ASBESTOS WORK
REQUISITION/PERMIT



Asbestos Management Program

ASBESTOS WORK REQUISITION/PERMIT - INTERNAL

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NOTE: It is the responsibility of individual Project Coordinator or Manager assigned to the work to ensure the following form is completed, and then forwarded to the University's Asbestos Programs Officer, a minimum of 72 hours before the anticipated start of the work. Ensure the work DOES NOT commence until a signed and duly authorized permit is obtained.

NOTICE: All work shall conform to Federal, Provincial, Municipal standards, codes and guidelines in addition to the requirements set forth by the University's Asbestos Management Program and any project specifications. In the case of any conflict, the most stringent requirements shall apply.		PERMIT NO.
Project Co-ordinator or Manager:		Telephone No.:
Project Title/Description:		
Building Name/Description:		
Room No.:	Room Name/Description:	
Date of Request: (Y/M/D)	Anticipated Start: (Y/M/D)	Anticipated Completion: (Y/M/D)
Description of Work Being Undertaken: _____ _____ _____		
Note: The above must clearly describe the scope of work completed. Include equipment reference, estimated quantities, location, etc.		
Department Reference: (Completing the Work)	Contact: Phone No.:	

ASBESTOS PROCEDURES (Check all applicable)

- | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> TYPE 1 – REMOVAL OR REPAIRS
<input type="checkbox"/> TYPE 2 – CEILING TILE REMOVAL
<input type="checkbox"/> TYPE 2 – REMOVAL OR REPAIR OF MECHANICAL INSULATION
<input type="checkbox"/> TYPE 2 – ACCESS TO CONTAMINATED CEILING SPACE OR AREAS
<input type="checkbox"/> TYPE 2 – SPRAYED FIREPROOFING REMOVAL OR REPAIR | <input type="checkbox"/> TYPE 2 – ASBESTOS CLEAN-UP
<input type="checkbox"/> TYPE 2 – REMOVAL OF SHEET FLOORING
<input type="checkbox"/> TYPE 2 – REMOVAL OF MECHANICAL INSULATION BY GLOVE BAG
<input type="checkbox"/> TYPE 2 – SPRAYED TEXTURE COAT REMOVAL OR REPAIR
<input type="checkbox"/> TYPE 2 – EMERGENCY CLEAN-UP, REMOVAL AND/OR REPAIRS |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

OTHER: _____

OTHER RESTRICTIONS

<input type="checkbox"/> Restricted Hours of Work	Specify Hours:
<input type="checkbox"/> Weekend Work	Specify Hours:
<input type="checkbox"/> Occupant Access Required	Specify Areas/Equipment:
<input type="checkbox"/> HVAC Shut Down	Specify Hours and Zones:
<input type="checkbox"/> Other System Shut Down	Specify:
<input type="checkbox"/> Other: _____ _____	

AUTHORIZATION (The following section is to be completed by a duly authorized Asbestos Programs Officer)

Name: (APO)	Signature:	Date: (Y/M/D)
Additional Restrictions: _____ _____		



Asbestos Management Program

ASBESTOS WORK REQUISITION/PERMIT - EXTERNAL

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NOTE: It is the responsibility of individual Project Coordinator or Manager assigned to the work to ensure the following form is completed, and then forwarded to the University's Asbestos Programs Officer, a minimum of 72 hours before the anticipated start of the work. Ensure the work DOES NOT commence until a signed and duly authorized permit is obtained.

NOTICE: All work shall conform to Federal, Provincial, Municipal standards, codes and guidelines in addition to the requirements set forth by the University's Asbestos Management Program and any project specifications. In the case of any conflict, the most stringent requirements shall apply.		PERMIT NO.
Project Co-ordinator or Manager:		Telephone No.:
Project Title/Description:		
Building Name/Description:		
Room No.:	Room Name/Description:	
Date of Request: (Y/M/D)	Anticipated Start: (Y/M/D)	Anticipated Completion: (Y/M/D)
Description of Work Being Undertaken: _____ _____ _____		
Note: The above must clearly describe the scope of work completed. Include equipment reference, estimated quantities, location, etc.		
Asbestos Contractor: (Completing the Work)	Contact: Phone No.:	

ASBESTOS PROCEDURES (Check all applicable)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> TYPE 1 – REMOVAL OR REPAIRS
<input type="checkbox"/> TYPE 2 – CEILING TILE REMOVAL
<input type="checkbox"/> TYPE 2 – REMOVAL OR REPAIR OF MECHANICAL INSULATION
<input type="checkbox"/> TYPE 2 – ACCESS TO CONTAMINATED CEILING SPACE OR AREAS
<input type="checkbox"/> TYPE 2 – SPRAYED FIREPROOFING REMOVAL OR REPAIR
<input type="checkbox"/> TYPE 3 – REMOVAL OF MECHANICAL INSULATION (PIPING OR EQUIPMENT)
<input type="checkbox"/> OTHER: _____ | <input type="checkbox"/> TYPE 2 – ASBESTOS CLEAN-UP
<input type="checkbox"/> TYPE 2 – REMOVAL OF SHEET FLOORING
<input type="checkbox"/> TYPE 2 – REMOVAL OF MECHANICAL INSULATION BY GLOVE BAG
<input type="checkbox"/> TYPE 2 – SPRAYED TEXTURE COAT REMOVAL OR REPAIR
<input type="checkbox"/> TYPE 2 – EMERGENCY CLEAN-UP, REMOVAL AND/OR REPAIRS
<input type="checkbox"/> TYPE 3 – REMOVAL OF SPRAYED TEXTURE COAT OR FIREPROOFING |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

OTHER RESTRICTIONS

<input type="checkbox"/> Restricted Hours of Work	Specify Hours:
<input type="checkbox"/> Weekend Work	Specify Hours:
<input type="checkbox"/> Occupant Access Required	Specify Areas/Equipment:
<input type="checkbox"/> HVAC Shut Down	Specify Hours and Zones:
<input type="checkbox"/> Other System Shut Down	Specify:
<input type="checkbox"/> Other: _____ _____	

AUTHORIZATION (The following section is to be completed by a duly authorized Asbestos Programs Officer)

Name: (APO)	Signature:	Date: (Y/M/D)
Additional Restrictions: _____ _____		

APPENDIX R
ASBESTOS WORK REPORT

A P P E N D I X R



Asbestos Management Program

ASBESTOS WORK REPORT - INTERNAL

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NOTE: The following form has been designed to maintain a current record of all asbestos-related work undertaken by the University's own staff and/or workforce. It shall be the responsibility of the individual Project Coordinator or Manager assigned to the work to ensure the following form is completed; and then forwarded to the Asbestos Programs Officer.

ASBESTOS REQUISITION/PERMIT: _____

BLDG.: _____

ROOM. NO.: _____

ROOM NAME/DESCRIPTION: _____

WORK COMMENCED: _____
(Y/M/D)

WORK COMPLETED: _____
(Y/M/D)

DESCRIPTION OF WORK: _____

Note: The above must clearly describe the scope of work completed. Include equipment reference, estimated quantities, location, etc.

CLASSIFICATION OF WORK:

- TYPE 1 – REMOVAL OR REPAIRS
- TYPE 2 – ASBESTOS CLEAN-UP
- TYPE 2 – CEILING TILE REMOVAL
- TYPE 2 – REMOVAL OF SHEET FLOORING
- TYPE 2 – REMOVAL OR REPAIR OF MECHANICAL INSULATION
- TYPE 2 – REMOVAL OF MECHANICAL INSULATION BY GLOVE BAG
- TYPE 2 – ACCESS TO CONTAMINATED CEILING SPACE OR AREAS
- TYPE 2 – SPRAYED TEXTURE COAT REMOVAL OR REPAIR
- TYPE 2 – SPRAYED FIREPROOFING REMOVAL OR REPAIR
- TYPE 2 – EMERGENCY CLEAN-UP, REMOVAL AND/OR REPAIRS
- OTHER: _____

DEPARTMENT: _____
(Performing the Work)

SUPERVISOR: _____ PHONE: _____
(In charge of the Work)

DESIGNATED INSPECTION AGENCY: _____

LIST OF ASBESTOS WORKERS (CONTRACTORS EXCLUDED)

<u>NAME</u>	<u>HOURS</u>	<u>NAME</u>	<u>HOURS</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

COMPILED BY: _____ PHONE: _____
(Name & Title)

SIGNATURE: _____ DATED: _____



Asbestos Management Program

ASBESTOS WORK REPORT - EXTERNAL

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NOTE: The following form has been designed to maintain a current record of all asbestos-related work undertaken by the University through the engagement of any outside contractors, service firms, etc.. It shall remain the responsibility of the individual Project Coordinator or Manager assigned to the work to ensure the following form is completed; and then forwarded to the Asbestos Programs Officer.

REQ 7 - REFERENCE: _____ ASBESTOS REQUISITION/PERMIT: _____

BLDG.: _____ ROOM NO.: _____

ROOM NAME/DESCRIPTION: _____

WORK COMMENCED: _____ (Y/M/D) WORK COMPLETED: _____ (Y/M/D)

DESCRIPTION OF WORK: _____

Note: The above must clearly describe the scope of work completed. Include equipment reference, estimated quantities, location, etc.

CLASSIFICATION OF WORK:

- TYPE 1 – REMOVAL OR REPAIRS
- TYPE 2 – CEILING TILE REMOVAL
- TYPE 2 – REMOVAL OR REPAIR OF MECHANICAL INSULATION
- TYPE 2 – ACCESS TO CONTAMINATED CEILING SPACE OR AREAS
- TYPE 2 – SPRAYED FIREPROOFING REMOVAL OR REPAIR
- TYPE 3 – REMOVAL OF MECHANICAL INSULATION (PIPING OR EQUIPMENT)
- OTHER: _____
- TYPE 2 – ASBESTOS CLEAN-UP
- TYPE 2 – REMOVAL OF SHEET FLOORING
- TYPE 2 – REMOVAL OF MECHANICAL INSULATION BY GLOVE BAG
- TYPE 2 – SPRAYED TEXTURE COAT REMOVAL OR REPAIR
- TYPE 2 – EMERGENCY CLEAN-UP, REMOVAL AND/OR REPAIRS
- TYPE 3 – REMOVAL OF SPRAYED TEXTURE COAT OR FIREPROOFING

PROJECT COORDINATOR: _____ PHONE: _____
(Assigned by the University)

ASBESTOS CONTRACTOR: _____

FOREMAN/SUPERVISOR: _____ PHONE: _____
(Assigned by the Contractor)

TESTING AGENCY/FIRM: _____ PHONE: _____

COMPILED BY: _____ PHONE: _____
(Name & Title)

SIGNATURE: _____ DATED: _____

APPENDIX S
ASBESTOS WASTE
TRANSPORTATION MANIFEST

A P P E N D I X S

APPENDIX T
ON-SITE LABELLING OF
ASBESTOS

Asbestos Management Program
Acadia University, Wolfville, Nova Scotia
ON-SITE LABELLING OF ASBESTOS

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Existing asbestos guidelines and good practice dictates, that consideration be given to the development of a system of on-site identification whereby general work area signage, placards or stencilling is used to provide a final line of defense against the accidental disturbance of known asbestos-containing materials.

In many instances however, the physical labelling of known asbestos-containing materials represents a series of technical or logistical concerns. For example, the labelling of architectural finishes such as sheet flooring products, vinyl asbestos floor tile (VAT), ceiling tiles, sprayed texture coats, wall plasters or other similar material are almost always exempt from physical labelling. In addition, access to these materials and others is not always practical. The use of visually similar products or jacketing of mechanical systems often makes it impossible to readily distinguish between known asbestos-containing materials and newer, non-asbestos products.

Acadia University will be undertaking a specialized program of labelling all known asbestos-containing materials as a matter of corporate policy.

Notwithstanding the above, conditions within a specific service area or building may arise whereby the on-site labelling of asbestos may be desirable. In such instances, workers shall, with the informed consent and knowledge of the Asbestos Programs Officer, proceed with any labelling in a manner consistent with the following sections.

1.0 GENERAL INVENTORY AND LABELLING PROCESS

1.1 In rooms where asbestos-containing material (ACM) is present, labels shall be placed on the inside of the door frame or where the door frame is not wide enough, the labels shall be placed to the right of the door frame. In hallways where ACM is present, labels shall be placed at each end of the hallway. The labels will identify the presence of asbestos using the following numbering system (if the asbestos is not readily described, then an alternate label with a hand-written description will be used):

1. Asbestos above ceiling spaces
2. Asbestos on ceiling surfaces
3. Asbestos on walls (drywall or cement board)
4. Asbestos below floor areas
5. Asbestos on visible piping and/or ducting
6. Asbestos in floor material
7. Asbestos in fire doors

1.2 The number identification system will be used in combination with the colours yellow and red. Yellow will indicate the location contains wrapped, enclosed or non-friable asbestos and poses minimal health hazard unless damaged or disturbed (i.e. a red 6 would indicate that non-friable asbestos containing floor material is present). Red will indicate the location contains friable

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ON-SITE LABELLING OF ASBESTOS

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asbestos-containing material and that special entry procedures are required (i.e. a red 1 would indicate that friable asbestos-containing material is present above the ceiling space and entry is only permitted following specific work procedures).

- 1.3 Such signage shall be posted in close proximity to all points of entry and must be clearly visible to all personnel upon entry.
- 1.4 In the case of most service shafts or crawlspaces, where access is controlled via a limited number of doorways, hatches, etc., it shall be permissible to post such signage on the backside of each doorway, hatch, etc..

2.0 MECHANICAL SYSTEMS & SERVICES

Individual mechanical systems or services insulated with asbestos shall be labelled (using bright red upper case "HELVETICA MEDIUM" lettering) as follows and in such a manner as to clearly define the extent and approximate location of known asbestos-containing materials.

- 2.1 At locations where asbestos-containing pipewrap is present on straight runs and fittings of mechanical services, label as follows with continuous runs labelled at maximum intervals of 12 feet (3.6 m):

← CAUTION: ASBESTOS →

- 2.2 At locations where asbestos-containing pipewrap is present on fittings of mechanical services alone, label as follows with continuous runs labelled at maximum intervals of 12 feet (3.6 m):

← CAUTION: ASBESTOS PRESENT AT FITTINGS →

- 2.3 At locations where asbestos-containing insulation is present on the surface of mechanical equipment label as follows and on each conversing side of the equipment exposed to view:

CAUTION: ASBESTOS
DO NOT DISTURB

- 2.4 At locations where existing asbestos-containing insulation has been removed and replaced with asbestos-free insulation, label mechanical services as follows at locations where the newly applied insulation butts up against the remaining asbestos:

← ASBESTOS FREE | CAUTION: ASBESTOS →

APPENDIX U
EQUIPMENT LIST FOR
IN-HOUSE ASBESTOS WORK

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The completion of Type 1, Type 2 and Glove Bag remedial work by Acadia University's own employees can be accomplished with tools normally maintained on hand by the building's maintenance department supplemented by the following asbestos-related equipment.

1.0 PROTECTIVE EQUIPMENT & APPAREL

- 1.1 Disposable Coveralls: Disposable full body coveralls complete with hood and elasticized hand and pant cuffs. Extra-large in size. Acceptable products: Kleen-guard and/or Tyvek.
- 1.2 Respirators: A half face-piece negative pressure air purifying respirator equipped with high efficiency (P-100) cartridge filters. Respirators should be individually assigned.
- 1.3 Respirator wipes/sanitizing pads.
- 1.4 Rubber Boots: To ease cleaning of footwear after use. As an alternative, disposable boot covers.
- 1.5 Safety glasses, hardhats and other construction related safety items.

2.0 EQUIPMENT

- 2.1 HEPA Vacuum: Vacuum as equipped with necessary attachments (i.e. crevice tools). Discharged air must pass through a High Efficiency Particulate Air (HEPA) filter prior to being discharged.
- 2.2 Signage: Appropriately worded to clearly identify the Asbestos Work Area and the need to don protective equipment, etc. prior to entry.
- 2.3 Misc. Tools & Cleaning Supplies: i.e. buckets, sponges, scrapers, utility knives c/w retractable blade, wire brushes, cleaning/scouring pads, rags, etc..
- 2.4 Water Sprayer: Manual garden-type hand pump c/w nozzle capable of providing a fine mist.

3.0 SUPPLIES

- 3.1 Asbestos Disposal Bags: 6 mil (0.15 mm) polyethylene bags. Labelled as containing asbestos waste.
- 3.2 Barrier Tape: Worded appropriately. Used to define the extent of an established Asbestos Work Area.
- 3.3 Glove Bags: Single use prefabricated, 0.25 mm (10 mil) minimum thickness polyvinylchloride bag with integral 0.25 mm (10 mil) thick polyvinylchloride gloves and elasticized ports. Bag must be equipped with reversible double-pull, double-throw, zipper to facilitate progressive movement along pipe and also be equipped with interior zip and nylon straps for sealing ends of bag around pipe. Acceptable product: Safe-T-Strip manufactured by Asbesguard Equipment Inc., in configurations suitable for work.

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- 3.4 High Temperature Bridging Encapsulant: Bridging type lagging compound suitable for surface temperatures up to 1000 °C (1800 °F). Acceptable products: Serpiflex Shield or Childers product CP-210.
- 3.5 Insulator's Canvas: 8 oz canvas sheeting to be used in the repair of piping, ducts, etc.. Ensure product purchased has appropriate flame spread and smoke generation ratings.
- 3.6 Lock-down Agent: For post-abatement application. Acceptable product: Serpiflex Shield
- 3.7 Low Temperature Bridging Encapsulant: Bridging type lagging compound suitable for surface temperatures up to 80 °C (180 °F). Acceptable products: Bakelite 120-19 or Childers product CP-211.
- 3.8 Polyethylene Sheeting: 6 mil (0.15 mm) minimum thickness in sheet size to minimize joints.
- 3.9 Rip-proof Polyethylene Sheeting: 8 mil (0.20 mm) fabric made up from 5 mil (0.13 mm) weave and two (2) layers of 1.5 mil (0.05 mm) poly-laminate in sheet size to minimize on-site seams and overlaps.
- 3.10 Tape: To include a variety of duct tape, double sided tapes, and packing tape to suit varying conditions.
- 3.11 Wetting Agent: Non-sudzing surface active agent. Acceptable products: Aqua-Gro or Palmolive dish soap.

APPENDIX V
ASBESTOS CONSULTANT/INSPECTION AGENCY
LIST OF PRE-QUALIFICATIONS

Asbestos Management Program
Acadia University, Wolfville, Nova Scotia
ASBESTOS CONSULTANT/INSPECTION AGENCY
LIST OF PRE-QUALIFICATIONS

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1.0 CONSULTANT QUALIFICATIONS

- 1.1 To ensure the highest standard of care is maintained at all times, only those firms with established reputations for quality workmanship in the field of asbestos consulting, design, inspection, and testing shall be considered for work at any Acadia University owned or occupied facility.
- 1.2 Before a firm may be considered for work at any Acadia University owned or occupied facility, they must first be able to demonstrate compliance with each of the requirements as set out below or as may reasonably be requested of them, by the University, as part of any request for proposal or similar solicitation of services.

2.0 EXPERIENCE

- 2.1 The firm, as well as all senior project officers, consultants and any supervisory staff, who may have occasion to offer services in association with the firm's involvement at Acadia University, must have a minimum of five (5) years prior experience in the field of asbestos control and remediation.
- 2.2 The firm's senior project officer or consultant assigned to any project involving the design and preparation of any project specific specifications, drawings, etc., shall furnish evidence of having provided similar services in association with a minimum of five (5) other projects of similar size and complexity.
- 2.3 All senior project officers, consultants, any supervisory staff and all project inspectors must hold a recognized certificate proving attendance at an asbestos management course of a minimum three (3) day duration.
- 2.4 All project inspectors must have a minimum of three (3) years experience in the field of asbestos control and remediation and must also have performed inspection and air monitoring services on a minimum of five (5) other asbestos abatement projects of similar size and complexity.

3.0 CAPABILITIES OF THE FIRM

- 3.1 To avoid any unnecessary delay in the work, the firm must be capable of providing an experienced and duly accredited technician on site for the analysis of all PCM air samples as performed following the NIOSH 7400 test method. In such instances, the results of any air sampling must be available to all parties within two (2) hours of the sample being collected.
- 3.2 The firm must be able to successfully demonstrate its ability, and willingness, to staff the project with sufficient, and duly qualified staff members, when and as required, so as to avoid any possible delay to the performance of the work.
- 3.3 All supervisory staff, in addition to the firm's senior project officer or consultant assigned to the project, must be able to be reached on a twenty-four (24) hour, seven (7) day a week basis, to respond to any emergencies that may arise.

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- 3.4 The firm must also be able to demonstrate its ability to provide competent asbestos related consulting services including, but not limited to the following items.
- .1 Comprehensive asbestos surveys.
 - .2 Collection of air, bulk, and surface dust samples.
 - .3 Detailed risk assessments.
 - .4 Preparation of site specific recommendations concerning any required remedial action.
 - .5 Preparation of site specific specifications, drawings, etc..
 - .6 Project management and administration.
 - .7 Inspection of active asbestos abatement work.

4.0 QUALITY ASSURANCE

- 4.1 All services provided by the firm, including any inspection or air monitoring services, shall be under the supervision of a Registered Occupational Hygienist (ROH) or Registered Engineer (P.Eng.) who shall be responsible for the firm's quality assurance program and final interpretation of all air sampling and any other test data.
- 4.2 The firm, as well as the individual technician performing the analysis of any air samples by Phase Contrast Microscopy (PCM) shall be accredited by one or more of the following agencies.
- .1 The American Industrial Hygiene Association's Asbestos Analysts Registry (AIHA AAR).
 - .2 The Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST).
- 4.3 Programs, such as the American Industrial Hygiene Association's Proficiency Analytical Test Program (AIHA PAT), that qualifies the lab only, are not acceptable.

5.0 INSURANCE

- 5.1 In addition to providing evidence of coverage for any General Civil Liability Insurance, Property Damage Liability or Automobile Insurance policies requested of them, by Acadia University, the firm must also have in place, an Errors and Omissions policy, endorsed to provide coverage for pollution or discharge of pollutants to air, soil, or water, including asbestos, with a minimum coverage of \$5,000,000.00 per occurrence.

APPENDIX W
STANDARDIZED
WORK PROCEDURES

A P P E N D I X W

Asbestos Management Program
Acadia University, Wolfville, Nova Scotia
STANDARDIZED WORK PROCEDURES

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- 1.0 The following appendix shall be used to house a copy of any “Standardized Work Procedures” that may be developed from time-to-time while in communication with Acadia University’s Asbestos Programs Officer and/or designated representative.
- 2.0 It is the intent of Acadia University, that the following “Standardized Work Procedures” shall be used to provide workers with instruction regarding a specific or unique work function or task. As such, the following may contain modifications (deletions and/or additions) to the specific work practices and procedures otherwise set out under *Appendix K to Appendix N*.



ASBESTOS HANDLING PROTOCOL – PLASTER FINISHES

ACADIA UNIVERSITY WOLFFVILLE, NOVA SCOTIA

Some of the plaster finishes within the Acadia University buildings have been identified to contain asbestos. The plaster consists of two distinct layers: the inner brown/grey layer (brown coat or scratch coat) contains asbestos (ranging percentages typically around 1-5% chrysotile), and the thin, white outer finish coat layer is asbestos free. This document along with the procedures has been established to ensure that occupational exposure to asbestos is kept to a minimum during the minor handling and management of in place plaster.

There are several activities that can be classified as “minor” removal or disturbances that have the potential to disturb in-place asbestos-containing material (ACM). These types of activities may include:

- Repairing holes or cracks in ACM plaster walls or ceilings
- Drilling holes into ACM plaster walls or ceilings
- Creating openings in ACM plaster for ductwork, plumbing, electrical items
- Securing studding, channels, strapping, supports to ACM plaster
- Running of cables or conduit through existing ACM plaster

The following procedures are provided to ensure the protection of building occupants, visitors and construction personnel. As asbestos-containing plaster is anticipated to remain in the building the following procedures are provided to deal specifically with this type of product for “minor” work operations. This type of work (minor/small scale) is typically referred to in the industry as Type 1 (Low Risk) work operations.

Asbestos work must be performed by those properly trained in the hazards and work procedures associated with asbestos.

This document does not address “major” (high-risk or moderate-risk) asbestos removal work (referred to in the industry as Type 3 (High Risk) and Type 2 (Moderate Risk) work) as significant disturbance can occur during these undertakings.

This document has been prepared for the use of Acadia University and its maintenance staff, and specifically for ACM plaster disturbances. The guidelines and work procedures described herein shall not be extrapolated for asbestos-containing materials other than the ACM plaster.

PROCEDURES FOR TYPE 1 (LOW RISK) WORK ON ASBESTOS-CONTAINING PLASTER

This type of work is defined as work that involves disturbance of **one (1) square foot or less of plaster material**. The procedures for this type of work are as follows:

- .1 For installing hangers or fixtures where only surface contact, and no physical disturbance of the plaster or base coat is necessary then no special requirements are needed.
- .2 For patching holes or filling cracks in walls where no removal or disturbance of the plaster is required then no special requirements are needed.
- .3 For direct installation of hangers, fixtures, etc. (penetration such as hammering or screwing into wall only, no reverse drilling or removal of fasteners permitted) in which cases, plaster will not become airborne, then no special requirements are needed.
- .4 For operations installing hangers or fixtures which require pre-drilling into the wall with drill bits not exceeding 13mm in diameter then the following procedures are to be used:
 - .1 Place a drop sheet on the floor surface directly below the area to be drilled.
 - .2 A HEPA equipped vacuum is to be used during the drilling operation to collect any dust or particles that may be generated.
- .5 For operations that involve coring holes or removing sections of plaster **less than 1 square foot in size** then the following procedures are to be used:
 - .1 Work is to be performed by personnel trained in the proper work procedures.
 - .2 The air handling systems (if present and operating) servicing the immediate work area is to be disabled.
 - .3 Workers are to wear properly assigned respiratory protection.
 - .4 Isolate the work area.
 - .4 Place a drop sheet on the floor surface directly below the area to be drilled, cored, or cut.
 - .5 A HEPA equipped vacuum is to be used during the operation to collect any dust or particles that may be generated.



ASBESTOS HANDLING PROTOCOL – VINYL FLOOR TILES

ACADIA UNIVERSITY WOLFVILLE, NOVA SCOTIA

Some of the vinyl floor tiles within the Acadia University buildings have been identified to contain asbestos. Vinyl floor tiles are considered a non-friable asbestos product. This document along with the procedures has been established to ensure that occupational exposure to asbestos is kept to a minimum during the cleaning activities of in place asbestos-containing vinyl floor tiles.

The following procedures are provided to ensure the protection of building occupants, visitors and construction personnel. Cleaning Procedures for Asbestos Containing Vinyl Floor Tiles

Normal polishing, cleaning or buffing may have the potential to release minor amounts of asbestos, but not likely enough to pose a health threat. To minimize this possible risk, the following procedures should be followed;

Stripping

- Using a mop, apply the floor finish remover or stripper. Provide adequate time to allow the finish remover to liquefy the floor finish.
- Using the least abrasive pad as possible for the flooring machine, scrub the floor.
- Use the machine at the lowest possible speed (175-275 rpm).
- Always strip the floor tiles wet.
- When scrubbing is completed, thoroughly clean the area using a wet vacuum fitted with a HEPA filter.

Finishing

- Apply several coats of sealer and then apply several coats of a finisher. Allow each coat to cure before applying a new coat. These multi coats should provide a protective layer over the floor tiles.
- After the floor is well sealed, buff the floor with a flooring machine running at the lowest possible speed (300-1000 rpm).

Provided the proper cleaning methods are used, it should not be necessary to wear a respirator or disposable coveralls during the above activities.

APPENDIX X
MISCELLANEOUS REQUISITIONS
& STANDARDIZED FORMS

A P P E N D I X X

Asbestos Management Program Acadia University, Wolfville, Nova Scotia MISCELLANEOUS REQUISITIONS & STANDARDIZED FORMS	Appendix: X Page: 1 of 1 Issue: 01 Amendment 00 Date: April, 2008
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- 1.0 The following appendix shall be used to house a copy of any requisitions and/or standardized forms that may be developed from time-to-time to assist Acadia University with its control and management of any asbestos-related issues.



Asbestos Management Program

ASBESTOS DAMAGE REPORT

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NOTE: The following form has been designed to assist individual staff members, outside contracting firms, etc., in their obligation, under Acadia University's current Asbestos Management Program, to report any damage to a known or suspect asbestos-containing material. In the case of an Acadia University staff or faculty member, such damage shall be reported to his/her immediate supervisor who shall in turn, provide an executed copy of the following form to the University's designated Asbestos Programs Officer. Any outside contractors or service firms shall provide an executed copy of the following form to their designated contact at the University, who shall in turn, forward a copy of this document to the University's designated Asbestos Programs Officer.

REPORTED BY

COMPILED BY: _____ <small>(Name & Title)</small>	EMPLOYEE NO.: _____
DEPARTMENT: _____ <small>(or Outside Contracting Firm)</small>	PHONE: _____
SIGNATURE: _____	DATED: _____

FORM FORWARDED TO/RECEIVED BY

RECEIVED BY: _____ <small>(Name & Title)</small>	EMPLOYEE NO.: _____
DEPARTMENT: _____	PHONE: _____
SIGNATURE: _____	DATED: _____

GENERAL DESCRIPTION AND LOCATION OF DAMAGE

BLDG.: _____	ROOM NO.: _____
ROOM NAME/DESCRIPTION: _____	
URGENCY OF REQUEST: <input type="checkbox"/> High (Immediate Response Required) <input type="checkbox"/> Moderate (3-5 Day Turnaround) <input type="checkbox"/> Low	
If the response time is critical, i.e. Access to the area has been shutdown or risk of exposure is high. Please follow-up with a phone call directly to the University's designated APO.	
General Description and Location of Damage: _____	

<small>(See Attached Sketch - Optional)</small>	

REQUIRED ACTION/TRACKING OPTIONS

To be completed by the attending APO. Please specify any site specific instructions, required compliance dates, etc..		
General Comments/Requirements: _____		

Requested Compliance Date:	Actual Compliance Date:	
<small>(Y/M/D)</small>	<small>(Y/M/D)</small>	
Name: <small>(APO)</small>	Signature:	Date: <small>(Y/M/D)</small>



Asbestos Management Program

NOTICE OF ASBESTOS WORK

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Location _____ **Date Posted** _____

ASBESTOS PROCEDURES BEING UNDERTAKEN

- | | |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <input type="checkbox"/> TYPE 1 – REMOVAL OR REPAIRS | <input type="checkbox"/> TYPE 2 – ASBESTOS CLEAN-UP |
| <input type="checkbox"/> TYPE 2 – CEILING TILE REMOVAL | <input type="checkbox"/> TYPE 2 – REMOVAL OF SHEET FLOORING |
| <input type="checkbox"/> TYPE 2 – REMOVAL OF MECHANICAL INSULATION | <input type="checkbox"/> TYPE 2 – REMOVAL OF MECHANICAL INSULATION BY GLOVE BAG |
| <input type="checkbox"/> TYPE 2 – ACCESS TO CONTAMINATED AREAS | <input type="checkbox"/> TYPE 2 – REPAIR OF MECHANICAL INSULATION |
| <input type="checkbox"/> TYPE 2 – SPRAYED FIREPROOFING REMOVAL OR REPAIR | <input type="checkbox"/> TYPE 2 – SPRAYED TEXTURE COAT REMOVAL OR REPAIR |
| <input type="checkbox"/> TYPE 3 – REMOVAL (As performed by an outside Contractor) | <input type="checkbox"/> TYPE 2 – EMERGENCY REMOVAL OR REPAIRS |
| <input type="checkbox"/> OTHER: _____ | |

Details of Work (Describe)

Times

Start Date _____	Finish Date _____
Start Time _____ am pm	Finish Time _____ am pm

Contact Information

Person on-Site _____	Tel _____
Departmental Contact _____	Tel _____
Project Coordinator _____	Tel _____

- If you have any concerns regarding the work being undertaken, please contact the Asbestos Programs Officer at (902) 585-1545.
- If there is an Emergency Situation, call Security at (902) 585-1103.



ASBESTOS INSPECTION REPORT

TO:	INSPECTOR:
	CONTRACTOR:
	NO. OF WORKERS:

WORK IN PROGRESS:

1. AIR MONITORING	4. NEGATIVE AIR	7. WASTE HANDLING
2. SITE ISOLATION	5. WORKER PROTECTION	8. CLEAN-UP
3. FACILITIES/EQUIPMENT	6. DUST SUPPRESSION	9. OTHER

SAMPLE NO.	PUMP NO.	TIME TAKEN	DURATION (MIN.)	VOLUME SAMPLED (L.)	DESCRIPTION OF SAMPLE	RESULTS (Fibers/mL)

1. Air Monitoring -

2. Site Isolation -

Signed: _____

Date:

Report No.:

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ASBESTOS INSPECTION REPORT

TO:

CONTRACTOR:

INSPECTOR:

3. Facilities/Equipment -

4. Negative Air -

5. Worker Protection -

6. Dust Suppression -

Signed: _____

Date:

Report No.:

Page: of



ASBESTOS INSPECTION REPORT

TO:

CONTRACTOR:

INSPECTOR:

--

7. Waste Handling -

8. Clean-up -

9. Other -

Signed: _____

Date:

Report No.:

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APPENDIX Y
RELATED CORRESPONDENCE,
POLICIES & MEMORANDA

A P P E N D I X Y

Asbestos Management Program
Acadia University, Wolfville, Nova Scotia
RELATED CORRESPONDENCE, POLICIES &
MEMORANDA

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- 1.0 The following Appendix shall be used to house a copy of all relevant correspondence with regulatory authorities, internal policies, memoranda, etc. pertaining to the control and management of asbestos at all Acadia University owned or occupied buildings.