RemovAll Remediation ltd.

Asbestos Exposure Control Plan



506 Davis Street, Victoria BC

RemovAll Remediation Services Ltd

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REMOVALL REMEDIATION SERVICES LTD

Asbestos Exposure Control Plan

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Statement of Purpose and Responsibilities

WorkSafeBC introduced the current *Occupational Health and Safety Regulation.* Compliance with this regulation is mandatory and provides a basis for both employers and workers to work together to solve health and safety issues by successfully identifying potential health hazards.

The company is committed to ensuring the well-being of its employees and outside contractors and to this end has developed a comprehensive Asbestos Exposure Control Plan (AECP) for the company workers in order to satisfy these needs with regard to asbestos issues.

The single most important factor in developing this AECP is to ensure that all employees and contract workers do not become inadvertently exposed to asbestos fibres. From a responsibility standpoint, this program is made up of two basic components.

Firstly, management procedures and operation and maintenance procedures:

Part A) Management Procedures include:

- Co-ordination of work activities that relate to asbestos containing areas.
- Informing workers and contractors of asbestos locations.
- Asbestos identification program.
- Inspection and reassessment procedures.
- Program review.

Part B) Operations and maintenance procedures include:

- Work procedures.
- Worker awareness training.
- Ensuring work is carried out using appropriate Work Procedures as defined by regulation.
- Ensuring workers at risk have appropriate training.
- Emergency work procedures.
- Waste management.

Secondly, Staff responsibilities.

Staff Procedures include:

- Ensuring asbestos containing materials are not damaged or disturbed in areas they occupy.
- Informing Facilities Management & the Environmental Health & Safety Department of any damage to asbestos containing materials.

1.0 Introduction

In response to current WorkSafeBC Regulations, we have concluded that a safeguard policy regarding asbestos exposure control should be established for our sites. This plan addresses not only the effects that asbestos containing materials will have on the routine maintenance of the site, but also the health and safety of the employees and contractors involved with renovation work, general repairs and routine maintenance. In addition, a clear procedure for carrying out emergency repair work must be documented to ensure that no worker is accidentally exposed to asbestos fibres.

The Asbestos Exposure Control Plan (AECP) is intended to detect, assess and control any potential health hazard caused by the presence of asbestos identified in the building. The primary focus of the plan is to eliminate accidental worker and/or workers/contractor exposure to asbestos fibres and to ensure the health and safety of the site and visitors.

To accomplish these goals, we have developed an AECP. Specific work procedures, general work practices and training to facilitate the implementation of the Plan are an integral part of this document.

The AECP includes an asbestos survey report which identifies the materials that contain asbestos.

There are two components to the AECP:

Part A of the program is a management system which provides for a periodic reassessment of materials containing asbestos. Should routinely scheduled inspections indicate continuing disturbance or deterioration of friable asbestos, such material shall be removed or addressed in some other manner compliant with the requirements of the prevailing Workers Compensation Board Occupational Health & Safety Regulations. In addition, any proposed building renovation, expansion or demolition project shall incorporate the removal of asbestos containing materials whenever such renovation work impacts on the existing asbestos products.

Part B of the program is Operations and Maintenance System which controls all routine maintenance, alteration, repair or other work activities which may disturb existing asbestos containing materials.

The second section of the program is staff procedures to ensure that asbestos materials are not damaged during normal activities and a reporting structure in the event that damage does occur.

All routine, scheduled annual inspections of asbestos containing materials are recorded and documented. Similarly, changes to the asbestos inventory list due to systematic or scheduled removal are also recorded and documented.

2.0 Asbestos

Asbestos is a generic term used to describe a group of naturally occurring fibrous minerals, divided on the basis of their mineralogical properties, into serpentines ("S" shaped) and amphiboles ("needle like"). The most significant health effecting property of asbestos is the presence of long, thin fibres that can be easily separated into small respirable fibres.

2.1 Potential Health Effects of Asbestos

Asbestos has been recognized as a health hazard for people employed in its production and processing for centuries. However, it was not until the late nineteenth century, with the onset of the Industrial Revolution, that its use became widespread, and it was not until the early part of the Twentieth century that the relationship between the use of asbestos and a variety of health effects became a source of concern to the medical profession.

Since the beginning of this century many serious, debilitating and often fatal diseases have been linked to the respiration of asbestos fibres. Although the mechanism of asbestos related diseases is still not fully understood, it is known that there is normally a long waiting (latency) period between the time of exposure and the occurrence of disease. This latency period can typically be between ten to over forty years. Asbestosis, Mesothelioma and Lung Cancer are the diseases most commonly associated with asbestos exposure, although several other diseases have been linked to asbestos exposure.

2.2 Asbestos Use

Asbestos was inexpensive to mine and has some very useful physical properties. As a result, it has been used in over 3000 different commercial products worldwide. Some of these physical properties include:

- High temperature resistance
- Tensile strength greater than steel
- Good soundproofing properties
- High chemical resistance
- Good electrical insulating properties
- Good mechanical strength

Asbestos has been widely used in building construction over many years and some uses continue today. Asbestos products are generally classed into two groups: friable and non-friable. Friable materials are those that, when dry, can be crumbled, pulverized or reduced to powder using moderate hand pressure. The use of friable materials in construction is banned today but due to its widespread use in the past, these materials are still present in many buildings today. In order to establish an AECP, the possible uses of asbestos must be known.

2.3 Potential Effects of Asbestos

Asbestos health risk of contracting an asbestos related disease is negligible for building workers however the risk for maintenance workers is higher. This is because maintenance workers are more likely to come into contact with and disturb asbestos containing materials in the normal cause of their work.

The asbestos survey conducted at sites identifies the asbestos containing materials present in the building on a room by room and department by department basis. If any worker or contractor is unsure of the material he is dealing with, it is the policy of to have this material sampled. Samples of the suspect materials are to be analysed before undertaking any work.

The quantities of asbestos found at have had an impact on routine maintenance and renovation work. Regular maintenance activities have become more difficult and more expensive if they involve dealing with asbestos containing materials, as well as dealing with emergency repairs.

3.0 Asbestos Exposure Control Plan (AECP)

The Asbestos Exposure Control Plan (AECP) contains two components: a management component designed to deal with the identification of all asbestos containing materials and the regular inspection of these materials and an operations and maintenance program.

The operations and maintenance program includes procedures for dealing with unidentified products that may be encountered during maintenance which may contain asbestos.

3.1 Objectives of the Asbestos Exposure Control Plan

The maintenance of a safe environmental for site production and maintenance workers depends on the establishment of an effective program. The program requires the following actions:

- The assignment of an Asbestos Exposure Control Plan Owner.
- A comprehensive building survey of suspected asbestos containing materials.
- Suitably identify and label all asbestos containing materials.
- Remove or repair materials which have become damaged, are in poor condition or which will be disturbed by building renovations.
- The development and implementation of procedures for building maintenance personnel for those activities which may require the assignment of an experienced asbestos removal contractor to supervise.
- Provision of appropriate training and personal protective equipment (PPE) and appropriate equipment to workers who may come into contact with asbestos containing materials.
- Provision for re-inspection and re-evaluation of all asbestos containing materials on a regular, scheduled basis.

3.2 Co-ordination of Work Activities

Due to the overall perception that the general public has regarding asbestos, an important part of the management function will be to provide factual information and reassurance to employees, who may feel affected by the presence of asbestos. In addition, the management function should be involved in the selection and overview of outside technical expertise. The following issues will be addressed by the co-ordinating function:

- Maintain an inventory identifying asbestos materials and locations throughout the building.
- Implement a program to identify asbestos materials by labelling.
- Ensure employees and contractors are aware of the AECP.
- Undertake periodic inspections of identified asbestos containing materials.
- Amend the AECP based on the findings of these inspections.
- Investigate complaints immediately and take immediate action.
- Develop and implement work procedures relating to asbestos removal or enclosure. All asbestos removal, handling or facsimile will be carried out by an outside qualified agency – ie. Envirotech or similar agency.
- Ensure that work procedures for the handling and disposal of asbestos waste are followed.
- Conduct training seminars in asbestos awareness as required.

3.3 Management

3.3.1 Asbestos Exposure Control Plan Coordinator

THE ASBESTOS EXPOSURE CONTROL PLAN COORDINATOR FOR IS:

NAME: _____
TITLE, LOCATION: _____
PHONE: ( ) -

Overall responsibility and authority for the administration of the AECP has been assigned to the AECP Coordinator who shall:

a) Implement and manage the AECP in a conscientious manner and be qualified through training and experience in the safe handling of asbestos, in accordance with Workers' Compensation Board of British Columbia requirements.

b) Ensure that the location of asbestos containing materials and presence of suspected asbestos containing materials are documented in a written

inventory. The condition, friability and accessibility of asbestos containing materials must be assessed to determine the potential for fibre release.

c) Inform site and maintenance personnel as well as contracted trades about the presence and location of asbestos containing materials, the tagging and identification system, the hazards of asbestos exposure including safe work procedures that must be followed when working in close proximity to, or contacting, asbestos containing materials.

d) Develop and implement an inspection program to monitor the condition of asbestos containing materials throughout the site. Damaged or deteriorated asbestos containing materials must be promptly removed, enclosed or encapsulated to prevent the release of airborne asbestos fibres. The AECP must be formally re-evaluated at least annually. This will include a reassessment of the potential hazard, remedial action as required and an update of the tagging and identification system.

e) Ensure that a “Notice of Project Asbestos” (N.O.P.A.) is sent to the Workers’ Compensation Board of British Columbia and the Environmental Health & Safety department (EHS) prior to performing any work activities involving asbestos containing materials. Detailed site specific work procedures must be submitted with the N.O.P.A.

f) Develop and maintain written work procedures for all service and maintenance activities involving asbestos containing materials.

g) Monitor and review work performed by maintenance personnel, including contracted trades, to ensure that their work activities are not disturbing asbestos containing materials and that identifying tags are not being inadvertently removed, damaged or painted.

h) Communicate with Staff/workers to ensure that their activities are not disturbing asbestos containing materials.

i) Renovations and maintenance activities increase the potential for disturbance of asbestos containing materials. Prior to conducting any renovation or maintenance work, the AECP Coordinator will review the work to assess the likelihood of asbestos containing materials being disturbed and take the appropriate action to ensure that no asbestos fibres are released. The AECP coordinator will ensure that safe work practises will be used in accordance with the WorksafeBC regulations and that work is only carried out by suitably trained and qualified personnel.

3.3.2 Contractors and Maintenance Personnel

Contractors and Maintenance personnel shall include all contracted trades and shall:

a) Be made aware of the presence and location of all the asbestos containing materials, the AECP and the tagging and identification system.

b) Not be permitted to disturb any asbestos containing materials.
c) Be trained in the safe handling of asbestos, if required. All work activities relating to asbestos containing materials will only proceed after being authorized by the AECP coordinator.
d) Only carry out renovation, routine maintenance or service work, which is likely to disturb asbestos containing materials, after the work has been quantified and authorized by the AECP coordinator.
e) Immediately inform the AECP Coordinator if damage or disturbance of asbestos containing materials occurs during the course of their work.
f) Not damage, remove, paint or otherwise interfere with the AECP Identification tags.

3.3.3 Staff and Employees

Staff and employees shall:

a) Be made familiar with the presence and location of asbestos containing materials and the AECP, including the labelling and identification system.
b) Not disturb asbestos containing materials. This will prevent any asbestos fibres from being released.
c) Have all renovation, maintenance or service work authorized by the AECP coordinator prior to any work being carried out.
d) Not damage, remove or paint over any of the AECP Identification labels.
e) Immediately inform the AECP coordinator if any asbestos containing materials are damaged or disturbed.

3.3.4 Identification Program

An important part of the AECP is the physical identification of all the asbestos containing materials. To this end, all asbestos containing materials must be clearly labelled.

Asbestos containing materials are identified on each label. Any labelled material containing asbestos must not be disturbed by maintenance or employees until the work has been quantified and identified by the AECP coordinator. Only suitably trained and qualified personnel familiar with current asbestos safety precautions will be permitted to work on the material. Those materials not labelled or identified otherwise, shall be considered asbestos containing until analysis of the suspect material determines otherwise.

3.3.5 Inspections

Periodic inspections of all asbestos containing materials are an integral and required part of the AECP. The inspections are intended to document the condition of these materials, on a minimum, at an annual basis to determine if they are deteriorating or have become damaged since the previous inspection.

3.4 Operations and Maintenance

Procedures for carrying out work involving asbestos containing materials are discussed in Section 3.4.1. Details for informing employees of the overall management program and development of suitable work procedures for work involving asbestos are also included in this section.

3.4.1 Work Procedures

Contractors may have to work near or actually disturb asbestos containing materials during the normal course of their work. In order for these workers to proceed in a safe manner, work procedures covering a variety of tasks will be developed by all contracted workers to submit with their N.O.P.A. These procedures will include all work involving:

- Repair of damaged friable asbestos containing materials.
- Working with non-friable asbestos containing materials.
- Moderate and High Risk work procedures.
- Waste handling.

Contractors and maintenance workers may be required to perform emergency work in areas where asbestos containing materials are located. In these instances, the nature of the work will not permit compliance with all normal WCB Regulations insofar as notification of the work to be done is required. Notification will be done after the fact in these situations.

3.4.2 Training

Worker training is a regulated requirement for all individuals that may have cause to come into contact with asbestos containing materials during the normal course of their work. The training for maintenance staff that may inadvertently disturb asbestos containing materials will typically be less involved than that of contracted workers, who will be required to show that they have had the relevant training. Maintenance personnel will be required to recognize any damaged materials or debris that they may encounter and report their findings immediately to the AECP coordinator for action.

All contract employees working in areas containing asbestos containing materials will be informed of the presence of the material and will be responsible for adequately training their workers to deal correctly with the hazard.

The training program will be carried out by an asbestos knowledgeable person with expertise in the area and will include:

- An asbestos awareness program, including health effects and elements of risk.
- Training in the use of protective clothing and equipment, work procedures and air monitoring.

- An appreciation of current WCB Regulations.
- The use of respirators and their maintenance.
- An awareness of the AECP.

3.4.3 Waste Management

Any asbestos materials accumulated during routine maintenance activities will be disposed of by qualified environmental contractor. When the site undertakes to remove asbestos containing materials as part of a removal schedule, this may be disposed of along with any other materials removed by a reputable asbestos abatement contractor. All asbestos containing materials will be bagged and labelled and will be disposed of in accordance with current WCB Regulations.

Asbestos waste includes:

- Debris or asbestos containing materials.
- Disposable coveralls and boots used during asbestos work.
- Sponges and other disposable cleaning materials.
- Plastic drop sheets.
- HEPA vacuum bags.

Asbestos waste must be stored in a sealed, lockable container. They must be transported to the disposal facility by a licensed hazardous waste carrier for the Province of British Columbia in accordance with the requirements of the Ministry of the Environment Hazardous Waste Transportation Regulations.

The handling and loading of asbestos waste must be undertaken in accordance with established low risk procedures.

All asbestos waste shall be disposed of in a duly authorized hazardous waste landfill. In order to ship hazardous waste, the contractor must first obtain the company's exclusive Special Waste Generator number. This number must accompany all waste generator manifests when material is being shipped for disposal.

The responsibility to complete the waste manifest for transportation is that of the owner; however this will be assigned to the Contractor conducting the work. The owner shall be required to retain one copy of the completed manifest.

3.4.4 Air Monitoring

Air monitoring if required will be conducted in accordance with the requirements of the WCB OH&S Regulation - Part 6: Substance Specific Requirements (for asbestos).

4.0 Asbestos Inventory & Risk Assessment

The following table lists the asbestos containing materials identified in the preliminary survey report and identifies the minimum work procedures required for asbestos removal:

Table 1: Asbestos Inventory & Risk Assessment

Asbestos Material	Minimum Work Procedures Required For Asbestos Removal
Drywall Taping Compound *	Modified Moderate Risk (Negative air unit required)
Ceiling Texture coat	High Risk
Spray applied fireproofing	High Risk
Mechanical insulation	High Risk/Moderate Risk (size dependant)
***Floor tile**	**Moderate Risk**
Cement board	Moderate Risk
Gaskets	Moderate Risk
Cement / stucco finishes	High Risk/Moderate Risk (size dependant)
Duct caulking/mastic	Moderate Risk
***Roof water run off down spouts**	**High Risk**

** these materials exist as identified at .*

Appendix B

Contingency Plan Emergency Clean Up Work Procedures
Contingency Plan – Emergency Clean Up Procedures

Special precautions will be required in order to minimize the spread of asbestos fibres in the event of an inadvertent disturbance of asbestos containing materials. In the event of a fibre release episode, the following procedures are to be observed.

a) Nobody is to attempt to clean up the asbestos containing materials without prior authorization from the AECP Manager.

b) Isolate the area from the rest of the building by closing doors and erecting barriers to restrict access to the area.

c) Post signs at all conceivable entrances to the area to prevent personnel not involved in the clean up operation from inadvertently entering the area.

d) Where practicable all heating, ventilation and air conditioning system (HVAC) components that are present within the area or supply or pass through the area must be shut down and isolated. All intake and exhaust vents in the area will be sealed with polyethylene and tape to prevent air movement and contamination of these systems.

e) The AECP coordinator must be contacted: Phone # (_____) _____ - _____.____

The AECP coordinator will arrange for the cleanup to be performed in a manner that ensures that safe work practices in accordance with the Workers' Compensation Board of British Columbia are followed and that the work is carried out by trained and competent personnel. Wherever practical, a specialist asbestos abatement contractor should be contacted to deal with the asbestos.

Emergency Response Kit

Maintenance workers should prepare an emergency response kit for work involving asbestos containing materials. Typically, the kit will include the following:

- Vacuum equipped with HEPA filter.
- Disposable plastic drop sheets.
- Sponges, buckets and cleaning supplies.
- Asbestos waste disposal bags.
- Duct tape.
- Disposable coveralls and boots.
- Warning signs and barrier tape.
- Ladders, tools and other appropriate equipment required in the work area.

Exposure Control Plan Request for Information

The following information is to be provided to the Asbestos Exposure Control Plan (AECP) Coordinator, or designated representative, prior to the start of any work that might disturb asbestos containing materials. The AECP Coordinator shall review the hazard survey records prior to the start of work and inform all parties affected.

Work Location:			
Building:			
Floor and Room Area:			
Type of Work:			
Start Date:		Start Time:	
Duration of Work:		Areas Affected:	
Contact Person:		Phone Number:	( ) -
Work Requested by:		Date:	

Notes/Comments:

Appendix C

Sample Collection

The first step towards developing an Asbestos Exposure Control Plan (AECP) is to conduct an asbestos hazard assessment. The assessment involves collecting representative samples of materials throughout the site.

The following steps are the components of the bulk sample collection method conducted for the premises. These procedures are also to be used to collect additional samples for specific projects or additional sampling of unidentified materials should that be necessary.

- All persons working in the immediate area of the sampling will be informed as to the nature of the work being carried out and suitable precautions will be taken to prevent them from being exposed to airborne asbestos fibres. If practicable, only the person collecting the material (sample) should be present in the area.

- A representative sample shall be taken from within the suspect material by penetrating the entire depth of the material. One sample should be taken from each different floor or area of material of different appearance. Mechanical insulation must be sampled on all straight runs, elbows and fittings on piping as well as from tanks, vessels and furnaces.

- The material should be sampled when the area is not in use. Only persons needed for sampling should be present in the immediate area.

- The material to be sampled must be sprayed with a light mist of water to prevent fibre release during sampling and the material must not be disturbed any more than absolutely necessary.

- The use of a respirator during sampling is normally required, since significant amounts of airborne fibres can be generated during sampling of deteriorating materials.

- If pieces of material break off during sampling, the contaminated area must immediately be cleaned up with a vacuum cleaner equipped with a **H**igh **E**fficiency **P**articulate **A**erosol (HEPA) Filter or by wet cleaning. Small amounts of material must be placed in plastic ziplock bags, labelled, sealed and disposed of as asbestos waste, using the approved waste disposal procedure.

Documentation of Results

The results (whether positive or negative for asbestos containing) shall be documented in a readily accessible format and shall be available to building maintenance staff, contractors and any workers likely to come into contact with asbestos containing materials during the course of their work. The report should include:

- A list of all materials containing asbestos.
- Comprehensive results of bulk sample analysis.
- Description by room number or location of all sample locations.
- A list of materials requiring prompt removal due to severe deterioration.
- A list of materials requiring minor removal or repair due to slight deterioration.

The hazard assessment report will be in the custody of the AECP coordinator, who will inform all workers likely to disturb any asbestos containing material. This will permit them to use appropriate procedures to protect both themselves and other building occupants from the release of any airborne asbestos fibres. Ready access to all sample analysis results and this AECP plan must be provided to all workers who may come into contact with asbestos during the course of their employment.

Visual Re-Evaluation

All asbestos containing materials identified in the survey shall be re-inspected visually on a regular (minimum requirement is annually) basis. The re-inspection shall be performed by either the same person who carried out the initial survey or by a technical expert. Further bulk samples will not be needed, but the re-evaluation must encompass all factors originally noted and should concentrate on any signs of deterioration, delamination or disturbance by maintenance staff, renovation or occupant activity. In the event of disturbance of friable material by water leak, structural failure or other unforeseen occurrence, all asbestos in the area shall be re-evaluated promptly.

Any recommendations made as a result of these inspections will include details regarding the priority, nature and extent of any corrective actions.

Common corrective actions are:

- Encapsulation of damaged or exposed materials.
- Repair of damaged asbestos materials.
- Removal of damaged or exposed materials.

It is essential that maintenance procedures and contract documents include information regarding the presence of asbestos containing materials. Consideration must be given to the need for protection of maintenance and service workers that may be affected by work as well as the safety of employees.

Site SURVEY AND EXPOSURE ASSESSMENT SUMMARY

Building:	
Total Area (m^2):	**Number of Occupants:**
Type of Construction:	
Use:	
Sprayed-on Material: ☐ **Yes** ☐ **No**	**Date:**

This form should be completed even in the absence of sprayed or textured asbestos containing materials and should be kept on file for future reference.

Materials

Location of Material (Identify room or space and location and surface area in m² of material):

Location	Area

Asbestos Content: ☐ Yes ☐ No	
Type of Asbestos:	State % where determined:

Exposure Assessment

Carry out an exposure assessment in each room or space where sprayed or textured asbestos containing materials are located. Mark the appropriate rating.

Factors

Condition of Material

- ☐ Good condition
- ☐ Minor damage
- ☐ Poor condition

Water Damage

- ☐ No water damage
- ☐ Minor water damage
- ☐ Moderate to major water damage

Exposed Surfaced Area

- ☐ Insulation not exposed
- ☐ 10% or less exposed
- ☐ More than 10% exposed

Accessibility

- ☐ Not accessible
- ☐ Rarely accessible
- ☐ Accessible

Potential for Disturbance

- ☐ Low
- ☐ High

Air Plenum and Air Stream

- ☐ No air plenum or air stream
- ☐ Air plenum or air stream

Friable: ☐ **Yes** ☐ **No**

Definitions

- **Good condition** means no water damage, physical damage or deterioration.
- **High potential** means that ACM is exposed or accessible, in an air plenum or airstream, or is subject to vibration.
- **Friable** means a material which, when dry, can easily be crumbled or powdered by hand.

Analysis

Corrective Action: ☐ **Yes** ☐ **No**

Corrective Action:

Remarks

Additional sheets may be attached.

Appendix D

Asbestos Inventory / Updates
Annual Review Reports