FINAL

Asbestos Management Program (West Lincoln Memorial Hospital) Part B - Procedures

169 Main Street East, Grimsby, Ontario

Prepared for:

Hamilton Health Sciences

1200 Main Street West, Room 1D13
Hamilton, Ontario L8N 3Z5

Attention: Corey LeGris
Hazardous Materials Specialist

March 25, 2019

Pinchin File: 217420.028

MEMBER OF
THE PINCHIN GROUP

TABLE OF CONTENTS

APPENDICES

GLOSSARY

Amended Water	Water with wetting agent added for purpose of reducing surface tension to allow thorough wetting of ACM.
Asbestos-Containing Material(s) (ACM)	A material that contains 0.5% or more asbestos as measured by U.S. Environmental Protection Agency Test Method EPA/600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials, June, 1993.
Asbestos	Any of the following fibrous silicates: Actinolite; Amosite; Anthophyllite; Chrysotile; Crocidolite; Tremolite.
Asbestos Work Area	Area where work is being performed which will or may disturb ACM including overspray and fallen material or settled dust that may contain asbestos.
Competent Worker	In relation to specific work, means a worker who, is qualified because of knowledge, training and experience to perform the work is familiar with the Act and with the provisions of the regulations that apply to the work, and has knowledge of all potential or actual danger to health or safety in the work.
Encapsulation	The application of a liquid sealant to asbestos-containing materials; the sealant may penetrate and harden the material (penetrants) or cover the surface with a protective coating (bridging sealants). Also called encasement. This is generally not advisable.
Enclosure	Enclosure of ACM means the construction of solid enclosure (walls, ceiling, bulkhead etc.) around ACM, or An Enclosure means the site isolation including hoarding walls, polyethylene sheeting and seals that isolates an Asbestos Work Area.
Friable Material	Material that: when dry, can be crumbled, pulverized or powdered by hand pressure or is crumbled, pulverized or powdered.
Glove Bag Removal	A method of removing friable insulation from a piping system using a prefabricated bag which isolates the section of insulation being removed. This is a Type 2 Procedure.
HEPA Filter	High Efficiency Particulate Aerosol filter that is at least 99.97 percent efficient in collecting a 0.3 micrometre aerosol.

HEPA Filtered Negative Pressure Unit:	Portable air handling unit which extracts air directly from the Asbestos Work Area and discharges the air to the exterior of the building after passing through a HEPA filter.
JHSC	Joint Health and Safety Committee.
MOE	Ontario Ministry of the Environment.
MOL	Ontario Ministry of Labour.
Phase Contrast Microscopy (PCM)	A method which uses an optical microscope to determine airborne fibres, normally in an occupational setting. Particles are observed for shape and size. Results are presented as a number of fibres per cubic centimetre or millilitre of air (f/mL). The method of analysis in Ontario is based on the US National Institute for Occupational Safety and Health (NIOSH) Manual of Analytical Methods, Method 7400, issue 2, Asbestos and Other Fibres by PCM (August 15, 1994).
Transmission Electron Microscopy (TEM)	A method which uses an electron microscope to determine airborne asbestos fibres. Results are presented in fibres per cubic centimetre of air (f/cc). The method of analysis in Ontario is The U.S. National Institute of Occupational Safety and Health (NIOSH) Manual of Analytical Methods, Method 7402, Issue 2: Asbestos by TEM (Aug 15, 1994).
Type 1, 2 and 3 Procedures	Procedures defined under Ontario Ministry of Labour Regulation 278/05. The specific operations and their classification into these procedures are described under the Classification of Work Section.
US EPA	United States Environmental Protection Agency.

1.0 PURPOSE AND SCOPE

The Asbestos Management Program (AMP) provides information and procedures for Asbestos Management in West Lincoln Memorial Hospital (WLMH), 169 Main Street East, Grimsby, Ontario. The AMP applies to all Hamilton Health Sciences (HHS) staff as well as all service providers and contractors performing work in Hamilton Health Sciences facilities.

The AMP consists of two parts; PART A outlines the policies, purpose, and responsibilities and PART B (this document) includes the procedures to be followed when completing asbestos related work in the facility.

APPENDIX A
Bulk Sample Collection Procedures

BULK SAMPLE COLLECTION PROCEDURES

1.0 OBJECTIVES

To obtain a sample for analysis to determine if asbestos is present within a material.

To determine the type of asbestos and the quantity of asbestos of each type.

Sampling of vermiculite is specifically excluded from these procedures.

2.0 EQUIPMENT AND SUPPLIES

- Pen and Sharpie marker.
- Retractable knife (with extra blades).
- Hook knife.
- Flashlight and batteries.
- Screwdriver(s) with multiple bits.
- Small hammer.
- Sample bags.
- Insulation tape or duct tape.
- Spray bottle.
- Wipes for cleaning tools so as to not contaminate subsequent samples.
- NIOSH approved half-face respirator with P100 filters.

3.0 SAMPLE COLLECTION

A member of the JHSC must be notified prior to any sampling being conducted and invited to be present at the start of sampling.

Only those persons needed for sampling should be present in the immediate area.

Where necessary, provide a drop sheet below sample location if debris or dust may be generated by sampling operation (e.g. below a ceiling tile if sprayed fireproofing is above).

Use new tools, or clean the re-used tools to be used with a sanitizing wipe prior to sample collection. Wipe or wash again prior to each subsequent sample.

Spray the material with a light mist of water if necessary to prevent fibre release during sampling. Do not disturb the material any more than necessary. Note that using water may delay the receipt of sample results as samples cannot be analyzed if wet.

Each homogeneous material should be sampled separately. Number of samples required is in Table 1 of O. Reg. 278/05 and is as follows:

Type of Material	Size of Homogeneous Material	Minimum Number of Bulk Samples
Surfacing material, including without limitation material that is applied to surfaces by spraying, by troweling or otherwise, such as acoustical plaster on ceilings, fireproofing materials on structural members and plaster	Less than 90 square metres	3
	90 or more square metres, but less than 450 square metres	5
	450 or more square metres	7
Thermal insulation, except as described below	Any size	3
Thermal insulation patch	Less than 2 linear metres or 0.5 square metres	1
Other materials	Any size	3

Collect the sample by penetrating the entire depth of the material to the underlying substrate since it may have more than one layer. Examples of materials with more than one layer include plaster, sweatwrap with tar paper, and parging cement over other insulations, etc. The following points are exceptions to this rule.

- When collecting drywall joint compound samples, do not sample the paper on the drywall or the drywall itself. To ensure that the drywall joint compound itself is sampled, collect the sample at previously damaged outside corners or above ceiling where unpainted.
- When sampling texture coat that is applied in a thin layer to drywall, try to ensure that you only collect a sample of the texture coat and not any drywall compound beneath that may skew the sample result. Try to sample at an area that is 1‘x 1’ away from a corner (and likely away from drywall joint compound), or sample overspray above ceiling. Do not sample too deep, trying only to remove the texture coat itself.
- When collecting samples try to minimize damage to finishes. A piece a big as your thumbnail is all that is required.
- When sampling VAT, try to obtain a sample of the mastic whenever possible. If the survey is for pre-construction, the mastic must be analyzed. Add this note to the transmittal.

If pieces of material break off and fall during sampling, remove the debris by wet wiping and place wipe in sample bag for disposal.

Scrape directly into, or place sample into a Ziploc bag and seal closure strip. Write the following information on the sample bag:

- Sample Number. Ensure that samples of the same homogenous material are numbered the same number but with a different letter to signify it is a different sample of the same homogeneous material (e.g. 001A, 001B, and 001C for three samples of the same type of ceiling tile).
- Date (year/month/day).
- Collected by.
- Company name.
- Material.
- Location. Include building name, room name, location number, type of system etc.

Temporarily seal any openings created to collect the sample, for example, with metal foil tape or duct tape wrapped completely around pipe insulation where the jacket was cut.

4.0 PERSONAL SAFETY

The use of a respirator is recommended for all sampling of materials. However, sampling can be performed without a need for one but depends on care used and the friability of the material being sampled.

Wash your hands after sampling, and you must wash your hands prior to eating drinking or smoking.

5.0 SAMPLE SUBMISSION

Samples must be analyzed at only NVLAP or AIHA certified laboratories. Acceptable labs include:

Pinchin Ltd.. Mississauga Laboratory, 2470 Milltower Court, Mississauga ON, L5N 7W5, Contact: Kendra Bertuzzi, (905) 363-1433 (Direct line).

Complete the Bulk Sample Transmittal. On the transmittal ensure that you instruct the lab to use the Stop Positive approach.

6.0 SAMPLE HANDLING AND SHIPPING

Include the Bulk Sample Transmittal. Bulk samples do not require special handling (temperature, pressure etc.).

7.0 ANALYSIS

The analytical method follows the Ontario Ministry of Labour Code for the Determination of Asbestos from Bulk Samples, August 1985 and U.S. EPA Method 600/R-93/116 dated July 1993.

Analysis is to be completed using a stop positive approach. Only one result of greater than 0.5% asbestos content is required to determine that a material is asbestos-containing, but all samples must be analyzed to conclusively determine that a material is non-asbestos (O. Reg. 278/05). The laboratory will stop analyzing samples from a homogeneous material once greater than 0.5% asbestos is detected in any of the samples of that material. All samples are analyzed if no asbestos was detected.

8.0 INTERPRETATION OF BULK SAMPLE RESULTS

Any material containing more than 0.5% asbestos is considered an asbestos-containing material in Ontario.

9.0 NOTIFICATION OF STAFF

The Hazardous Materials Specialist will be responsible to distribute the laboratory results to the Asbestos Sub-Committee and the site Joint Health and Safety Committee. The manager who requested sampling or who manages the affected work area will also be notified. It is the manager's duty to notify staff of any changes.

BULK SAMPLE TRANSMITTAL FORM

Pinchin Ltd.
Asbestos Laboratory
2470 Milltower Court
L5N 7W5
Attention: Kendra Bertuzzi
Phone: 905.363.1433

Building Name:		**Results/Invoice To:**
		Name: Company: Address: Fax: Email:
Project No.:		
Submitted By:		
Date:	P.O.:	
# of Samples:	Date Required:	Priority: ☐Reg (5 day) ☐Rush (24 hr.)

SAMPLE NUMBER	MATERIAL/SYSTEM/LOCATION	RESULT

E.g. Vinyl floor tile, beige and white, Managers Office, 2nd Floor, Room 123, Location 22.
E.g. Parging cement insulation on pipe fitting, domestic hot water system, Basement, Boiler Room, Room B1, Location 1.

TO BE COMPLETED BY LAB PERSONNEL ONLY	**LAB REF. #:**
Analyzed By:	**Date:**

APPENDIX B

Type 1 Asbestos Work Procedures

TYPE 1 ASBESTOS WORK PROCEDURES

These procedures are to be followed by workers and contractors performing the following work at HHS buildings.

- Installing or removing ceiling tiles which are an asbestos-containing material, if the tiles cover an area less than 7.5 square metres and are installed or removed without being broken, cut, drilled abraded, ground, sanded or vibrated and friable asbestos-containing material is NOT likely to be lying on the surface of the ceiling tile.
- Installing or removing non-friable asbestos-containing material, other than ceiling tiles, if the material is installed or removed without being broken, cut drilled, abraded, ground, sanded or vibrated.
- Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if,
    - The material is wetted to control the spread of dust or fibers, and
    - The work is done only by means of non-powered hand-held tools.

These Type 1 Asbestos Procedures assume the non-friable material can be removed with relatively little loose dry dust released. Generation of debris is permissible as long as the debris can be well wetted before being removed. If the work will release more than a trivial amount of dry loose dust, do not proceed further with work. The Hazardous Materials Specialist or Project Designate will determine which of Type 1, 2 or 3 procedures are appropriate.

1.0 EQUIPMENT

All equipment must be on site before proceeding.

1.1 HEPA Vacuum

Use of a vacuum is optional. Wet cleaning methods may be used in place of a HEPA vacuum. If a vacuum is used, it must be equipped with a high efficiency particulate aerosol (HEPA) filter. The vacuum must only be opened to be cleaned or dislodging of blocked objects in an enclosure following Type 2 procedures. The vacuum exterior should be carefully wet cleaned after each use or after each emptying.

1.2 Respirators

Use of a respirator is optional. However, a respirator is recommended for all Type 1 work. The employer will supply at the workers' request a half face respirator with P100 (HEPA) filters, with training on use and qualitative fit testing. Respirator must be used according to written use procedures provided to worker as

per training procedures. Filters must be changed after 16 hours of wear or sooner if breathing resistance increases as filters become damp. No person using a respirator shall have facial hair that affects the seal between respirator and face.

1.3 Protective Clothing

Disposable protective clothing is optional. The employer will supply at the workers request. Non-disposable clothing with visible asbestos contamination shall be cleaned with a HEPA vacuum and laundered as asbestos contaminated. Disposable clothing and respirator filters are to be disposed of as asbestos waste.

1.4 Other Equipment

The following equipment will also be required to perform the work.

- 6 mil polyethylene to serve as a drop sheet.
- Pump sprayer with misting nozzle or alternative method to wet material.
- Labelled yellow asbestos waste bags (6 mil) - for all asbestos waste, disposable equipment, plastic, etc.
- Small tools and cleaning supplies - e.g. scouring pads, sponges, brushes, buckets, etc.

2.0 OTHER PROTECTIVE MEASURES

Do not eat, drink or smoke in the work area.

Upon leaving the work area, proceed to the washroom and wash all exposed skin on hands and face.

3.0 SCHEDULING OF WORK

Schedule work when occupants are absent. If persons are present, do not start work.

If work is required on an emergency basis and the area is occupied, the Hazardous Materials Specialist or Project Designate is to advise occupants to vacate area until work is complete and clearance is given to return.

4.0 PREPARATION

Before disturbing non-friable asbestos materials, cover floor (vinyl tile excepted) and surfaces below work with polyethylene sheeting as appropriate to catch debris.

Wherever dust on a surface is likely to be disturbed, pre-clean and remove using a HEPA vacuum or damp cloth.

5.0 EXECUTION

5.1 Removal of Vinyl Asbestos Floor Tile

Do not use electric powered scrapers.

Wet material with amended water.

Start removal by wedging a heavy-duty scraper in seam of two adjoining tiles and gradually force edge of one tile up and away from floor. Do not break off pieces of tile, but continue to force balance of tile up.

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 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 adhesive.

When tiles are removed, place into asbestos waste receptor. Do not break into smaller pieces.

After removal, scrape up adhesive remaining on 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 the asbestos waste disposal bag. Do not dry scrape surface of adhering pieces of tile. Do not use powered electric scrapers.

On completion of removal, vacuum clean floor with HEPA vacuum or wet mop.

Dispose of the mop head as contaminated waste. Alternatively, store this and other materials that cannot be cleaned in asbestos waste bags until next use (open only inside work area.)

5.2 Installing, Cutting, or Drilling Non-Friable Asbestos Materials

Work using power tools or power equipment must not be performed as Type 1 work.

Where possible wet all materials to be disturbed. If wetting is not possible use Type 2 procedures.

Immediately place waste in asbestos waste container. Clean area frequently during work with HEPA vacuum or by wet methods.

At completion of work, clean drop sheets and dispose of as asbestos waste.

5.3 Removal of Other Non-Friable Asbestos Materials

The Type 1 procedures apply only to materials that can be removed intact, or in sections, without producing a pulverized or powdered waste. This method is most applicable to transite and small quantities of lay-in ceiling tiles.

Wet all material to be disturbed with amended water.

Undo fasteners necessary to remove material. Whenever possible remove asbestos cement panels intact. Break only if unavoidable. If broken, wet freshly exposed edges.

Where sections are adhered to the substrate, wet material and use hand scraping to remove adhering material.

Place removed material into asbestos waste receptor. Clean surrounding surfaces and asbestos work area frequently with HEPA vacuum or with wet methods (i.e. damp cloth disposed of as asbestos waste after cleaning).

Drop sheets shall be cleaned and disposed of as asbestos waste.

5.4 Waste Transport and Disposal

Place waste into asbestos labelled disposal bag, seal with tape, clean the exterior of the bag with a clean cloth, and place into a second clean asbestos labelled bag, also to be sealed with tape.

HHS will provide a storage area for holding minor amounts of asbestos waste in sealed containers. Garbage containers shall be labelled and assigned exclusively for asbestos waste. Contractors will be responsible for storage and disposal of any waste that is more than two asbestos waste bags.

When waste is removed from site, collect the completed waste waybills from the disposal firm. For work performed by a contractor, the contractor will complete and provide to the Hazardous Materials Specialist or Project Designate copies of a waste manifest. Waste generated by staff will be stored at a secure location until sufficient accumulates for a waste pick-up. Staff should request the room number for internal storage from the Hazardous Materials Specialist or Engineering. If the container is full notify Engineering.

APPENDIX C

Type 2 Asbestos Work Procedures

TYPE 2 WORK PROCEDURES

These procedures are to be followed by all maintenance personnel and contractors performing the following work at HHS buildings.

- Entry into any ceiling space, wall chase or other area in which friable asbestos-containing debris is present.
- Removal of any part of a false ceiling if asbestos-containing debris is likely to be lying on the surface of the false ceiling.
- Removal of glued-on compressed mineral fibre tiles containing asbestos or removal of more than 7.5 square metres of lay-in tiles of this type at one time.
- Clean up of asbestos-containing debris from mechanical insulations or sprayed fireproofing.
- Enclosure of friable material containing asbestos.
- Repair (such as application of tape or sealant or other covering) of any extent of asbestos mechanical insulation.
- Removal of non-friable materials with hand-tools where the material has not been wetted.
- Removing asbestos-containing pipe insulation from a pipe, duct or similar structure using a glove bag. (See Appendix D)
- Removal of minor amounts of friable asbestos-containing materials including, texture coat, sprayed fireproofing and mechanical insulation. (Minor removal is defined by most provincial regulations – in Ontario this is limited to wet removal of 1 square metre or less, or an equivalent amount of pipe insulation).

1.0 EQUIPMENT

Equipment required for the work must be on site before proceeding.

1.1 HEPA Vacuum

An asbestos-approved vacuum (HEPA filtered) equipped with brushes, fittings, etc. A vacuum can be opened to empty only by a fully protected worker within a Type 2 enclosure.

1.2 Respirators

Workers within the work area must wear an approved respirator. Respirators and filters will be provided by the employer, and individually assigned to workers. Respirator shall be a half-facepiece respirator with high efficiency (P100) filters, for all classifications of Type 2 work, except as follows: Full face piece air purifying respiratory or powered air purifying respirator with high efficiency (P100 or HEPA filters) shall be

used for ceiling access with ACM debris on ceiling or for use of power tools equipped with HEPA filtered dust collector to cut, grind or abrade non-friable ACM. Respirators must be kept in position on the face during the entire time the worker is in the Type 2 Work Area. This is the period from the first removal of the ceiling tile, opening of hatches or the first disturbance of the asbestos material until the final cleaning of the area and the bagging of waste is completed. Change filters after 24 hours of wear or sooner if breathing resistance increases as filters become damp. No person wearing a respirator shall wear facial hair which affects seal between respirator and face.

1.3 Protective Clothing

All workers shall wear disposable Tyvek coveralls (or equivalent) with attached elasticized hood. Coveralls should be worn with the hood in place at all times. Suit and head cover shall remain in place until worker leaves the Type 2 enclosure or work area. Boot covers are required if wet wiping or HEPA vacuuming cannot effectively clean footwear. Disposable coveralls must be disposed of as asbestos waste at the end of each shift or at each break.

1.4 Other Equipment

Polyethylene (6 mil polyethylene) - to erect a total enclosure or to serve as drop sheet;

Wood framing or clips to support polyethylene sheeting, as appropriate to work area

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

Labelled asbestos waste bag (6 mil) - for all asbestos waste, disposable suit, plastic for disposal, etc.

Pump sprayer containing water with wetting agent to wet asbestos as necessary; dilute wetting agent 2 oz. per gallon of water.

Asbestos warning signs

Cleaning supplies - e.g. scouring pads, sponges, brushes, buckets, etc.

Insulation repair supplies (lagging compound, cloth, PVC covers)

Encapsulating sealer, for brush or airless spray application

2.0 OTHER PROTECTIVE MEASURES

Do not eat, drink or smoke in the work area.

On completing clean-up of work area, use vacuum or wet cloth to clean hands, face, respirator and boots. Remove protective equipment and proceed to nearest washroom to wash exposed skin on hands and face.

3.0 SCHEDULING OF WORK

Schedule work when occupants are absent. If persons are present, do not start work.

If work is required on an emergency basis and the area is occupied, the Hazardous Materials Specialist or Project Designate is to advise occupants to vacate area until work is complete and clearance is given to return.

4.0 PREPARATION

4.1 Enclosure Required

Shut down ventilation systems to and from the work area. Seal over all ventilation openings, diffusers, grilles, etc. with plastic and tape.

Where practical, clear areas of movable furnishings or equipment. This should include anything which occupants may wish to use during work period. Any furnishings or equipment not removed shall be adequately covered and sealed using 6-mil polyethylene and tape.

Construct enclosure using polyethylene sheeting, tape and glue. For small rooms, cover walls with plastic such that the complete room becomes the work area. For larger rooms, erect enclosure of 6-mil polyethylene of suitable dimensions to enclose the work area. If a suspended ceiling is present, the enclosure shall extend to the 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 a layer of minimum 6-mil polyethylene sealed to the plastic walls of the enclosure. Post warning signs at the entrance to the enclosure.

Use a HEPA vacuum or appropriately sized air unit equipped with HEPA filter to induce negative pressure inside work area. Vacuum should be outside the enclosure with hose inserted inside enclosure to extract air from enclosure.

Don protective clothing and respirator prior to disturbing any asbestos-containing materials in Type 2 enclosure.

4.2 No Enclosure Required

Shut down ventilation systems to and from the work area. Seal over all ventilation openings, diffusers, grilles, etc. with plastic and tape.

Where practical, clear areas of movable furnishings or equipment. This should include anything which occupants may wish to use during work period. Any furnishings or equipment not removed shall be adequately covered and sealed using 6-mil polyethylene and tape.

Post signs or caution tape to indicate the asbestos work area and identify an asbestos hazard and requirement for protective clothing for anyone entering the space. Identify a designated area for worker decontamination.

Don protective clothing and respirator prior to disturbing any asbestos-containing materials in Type 2 work area.

5.0 EXECUTION

To provide access into ceiling spaces where asbestos-containing debris may be present perform the following:

- Erect site isolation and don protective clothing as per Preparation Section 4.1.
- Carefully remove one tile or small portion of ceiling and clean top of removed section with HEPA vacuum.
- Vacuum top of remaining ceiling while still in place.
- Do not break tile or allow tiles to drop to floor.
- Perform all work above ceiling inside Type 2 enclosure.

To remove mechanical systems insulation perform the following:

- Erect site isolation and don protective clothing as per Preparation Section 4.1.
- Wet any area of damage, then carefully cut jacket. Keep insulation surface wetted by mist of water with wetting agent.
- Remove insulation in large sections and place immediately in disposal bag.
- After all large pieces have been removed, saturate debris and clean all exposed surfaces with abrasive pads, sponges, cloths, etc.
- When only a section of the mechanical insulation is to be removed the remaining exposed ends must be sealed with appropriate cloth and lagging.
- Maximum removal is 1 square metre of material.

To repair mechanical systems insulation, perform the following:

- Don protective equipment as per Preparation Section 4.2.

- Use drop sheet under area of work to aid clean-up of any dislodged material. Plastic enclosure is not required.
- Mist any exposed insulation to wet surface and apply lagging paint and canvas or PVC jacketing as required.

To remove ceiling tiles perform the following:

- Erect site isolation and don protective clothing as per Preparation Section 4.2.
- Wet tiles and remove intact as much as possible and place immediately in disposal bag.
- After all large pieces have been removed, saturate debris and clean all exposed surfaces and support structure with abrasive pads, sponges, cloths, etc.

To cut or drill into non-friable ACM using a power tool equipped with a HEPA filter perform the following: (wet method):

- Don protective equipment as per Preparation Section 4.20.
- Wet all material to be disturbed.
- Undo fasteners if necessary to remove material.
- Use hand held powered tools with a HEPA filtered dust collection device to remove, cut, grind, abrade, break or vibrate ACM.
- Scrape to remove any remaining material adhered to substrate.
- Place removed ACM directly into an asbestos waste container.
- Wet clean or HEPA vacuum the entire Asbestos Work Area, including surfaces not covered with polyethylene sheeting. Any materials or equipment removed to access ACM that are to be reused, must be wet cleaned or vacuumed prior to reinstatement.

To cut or drill into non-friable ACM using a power tool equipped with a HEPA filter perform the following: (dry method):

- Don protective equipment as per Preparation Section 4.2 with full face piece air purifying respirator or powered air purifying respirator with high efficiency (P100 or HEPA filters) as per Respirator Section 1.2.
- Undo fasteners if necessary to remove material.
- Use hand held powered tools with a HEPA filtered dust collection device to remove, cut, grind, abrade, break or vibrate ACM.
- Scrape to remove any remaining material adhered to substrate.

- Place removed ACM directly into an asbestos waste container.

General for all Operations:

HEPA vacuum the entire Asbestos Work Area, including surfaces not covered with polyethylene sheeting. Any materials or equipment removed to access ACM that are to be reused, must be vacuumed prior to reinstatement.

Frequently, and at regular intervals during the work, clean up dust and waste in the work area by wet mopping, placing in disposal bags, or by HEPA vacuuming.

Apply post removal sealer and coat surfaces from which asbestos material was removed.

At completion of work, decontaminate equipment, tools and materials used in the work area by wet cleaning or HEPA vacuum.

Dispose of drop sheets and enclosures by wetting the polyethylene, then folding into disposal bags. Do not reuse drop sheets or enclosures.

Before leaving work area, decontaminate shoes and protective clothing by using HEPA vacuum or damp wiping. When protective clothing is to be disposed of, it shall be decontaminated as above and placed in labelled disposal bags. Workers shall vacuum all exposed skin, suit and respirator, and proceed to nearest washroom to wash hands and face.

6.0 WASTE TRANSPORT AND DISPOSAL

Place waste into asbestos labelled yellow disposal bag, seal with tape, clean the bag, and place into a second clean bag. Seal outer bag with tape.

HHS will provide storage area for holding minor amounts of asbestos waste in sealed containers. Containers shall be labelled and assigned exclusively for asbestos waste.

When waste is removed from site, collect copies of the waste waybills from the disposal firm. For work performed by a contractor, the contractor will complete and provide to the Facility Manager copies of a waste manifest. Waste generated by personnel will be stored in a secure location until sufficient accumulates for a waste pick-up. Staff should request the room number for internal storage from the Hazardous Materials Specialist or Engineering. If the container is full notify Engineering.

APPENDIX D

Glove Bag Work Procedures

GLOVE BAG WORK PROCEDURES

These procedures are to be followed by maintenance staff and contract persons performing the removal of asbestos-containing pipe insulation using glove bag procedures work at HHS buildings.

NOTE: If more than a minor amount of insulation (more than 1 square metre) is to be removed a notification to the Ministry of Labour will be required.

1.0 EQUIPMENT

All equipment must be on site before proceeding with the work.

1.1 Single Use Glove Bag

A pre-fabricated plastic bag with air-tight sleeves and gloves permanently sealed to the bag to allow access to pipe insulation. Bag shall be equipped with valves or openings for vacuum hose and nozzle of water sprayer, a tool pound with a drain, a seamless bottom and a means of sealing off the lower portion of the bag.

1.2 Moveable Glove Bag

A Glove Bag as defined in 1.1 but equipped with a high strength double throw zipper and removable straps. Required if the bag is to be moved during the removal operation.

1.3 HEPA Vacuum

An asbestos-approved vacuum (HEPA filtered) equipped with brushes, fittings, etc. A vacuum can be opened to empty only by fully protected worker within a Type 2 enclosure.

1.4 Respirators

Workers using glove bag must wear approved respiratory protection. Respirators and filters must be provided by the employer, and individually assigned to workers. Respiratory protection shall be a half-face piece respirator with high efficiency (P100) filters. Respirators must be kept in position from the time the worker attaches bag to pipe until final cleaning of the pipe and bagging of waste is completed. Filters shall be changed after 24 hours of wear or sooner if breathing resistance increases. No person using respirator shall wear facial hair which affects the seal between respirator and face.

1.5 Protective Clothing

Workers shall wear disposable Tyvek coveralls (or equivalent) with attached elasticized hood. Coveralls and hood shall remain in place until worker completes cleaning of pipe. Disposable coveralls must be disposed of as asbestos waste at the end of each shift or at each break.

1.6 Other Equipment

Labelled asbestos waste bags (6 mil) - for all asbestos waste in glove bag, disposable suit, cleaning materials, etc.

Asbestos warning signs.

Wire saw - saw with flexible serrated wire blade and handles to allow use inside glove bag.

Knife with fully retractable blade or carpet (hook) knife for use inside glove bag.

Securing Straps - Reusable nylon straps at least 1" wide with metal buckle for sealing ends of Moveable Glove Bag around pipe and/or insulation.

Water Sprayer - Garden reservoir type, low velocity, capable of producing mist or fine spray with water containing wetting agent. Wetting agent shall be diluted 2 oz. per gallon of water.

Plastic sheet (2 mil polyethylene) to cover exposed or damaged sections of pipe prior to attaching glove bag.

Plastic drop sheet (6 mil polyethylene) to protect furnishings, flooring or equipment in the event of a spill.

Sealer or encapsulant suitable for service temperature of pipe applied by brush, cloth or hand sprayer.

Miscellaneous tools and cleaning supplies, wire cutters, snips, scouring pads, sponges, brushes, buckets, tape etc.

2.0 OTHER PROTECTIVE MEASURES

Do not eat, drink or smoke in the work area.

On completing cleanup of work area, use HEPA vacuum or wet cloth to clean hands, face, respirator and boots. Remove protective equipment and proceed to nearest washroom to wash all exposed skin on hands and face.

3.0 SCHEDULING OF WORK

Schedule work when occupants are absent. If persons are present, do not start work.

If work is required on an emergency basis and the area is occupied, the Hazardous Materials Specialist or Project Designate is to advise occupants to vacate area until work is complete and clearance is given to return.

4.0 PREPARATION

Where practical, clear area below pipe of moveable furnishing or equipment. Provide scaffold as required to reach pipe.

Install plastic drop sheet over furnishings, flooring or equipment for protection in the event of a spill. Drop sheet shall be sufficient size to capture any material dislodged from the pipe.

Post an asbestos warning sign at all entrances to room in which the procedure is being used. If necessary use rope or tape barriers to separate work area.

Disable ventilation system in area of Glove Bag operation. Seal voids and openings in the proximity of the Glove Bag operation, including ventilation ducts.

Don protective clothing and respirator prior to disturbing any asbestos-containing material by any work.

Pre-clean with HEPA vacuum or wet methods any loose material on surface of pipe or any material on the floor. If asbestos-containing material is on floor, Type 2 procedures may be required for clean-up. (See Type 2 Procedures.)

Check condition of pipe insulation where removal will be performed. If the insulation has minor damage, mist surface and patch with tape. If damage is more extensive, wrap pipe with 2 mil plastic and "candy stripe" with duct tape first. If pipe insulation is severely damaged and cannot be simply repaired, glove bag is not appropriate. (Use Type 2 or Type 3 Procedures.)

5.0 EXECUTION

- Follow manufacturer’s instructions for Glove Bag being used.
- Place tools necessary to remove insulation in tool pouch. Fasten bag onto pipe and seal all openings to pipe with cloth securing straps or tape.
- Place hands into gloves and use necessary tools to remove insulation. Arrange insulation in bag to obtain full capacity of bag. Do not use glove bag method on insulation jacketing made of aluminium of thickness greater than 0.51 mm (24 gauge) or steel.
- Insert nozzle of spray pump into bag through valve and wash down pipe and interior of bag thoroughly. Use one hand to aid washing process. Wet surface of insulation in lower section of bag and exposed end of asbestos insulation remaining on pipe by spraying with water prior to moving bag.
- If Glove Bag is to be moved along pipe, adjust strap tension, move bag and re-seal to pipe using double-pull zipper to pass hangers. Repeat stripping operation.
- If Glove Bag is removed from pipe for use on new section of pipe, extract the air from the Glove Bag with a HEPA vacuum and seal interior zip lock. Re-install in new location before opening zip lock.

- If Glove Bag is ripped, cut or opened in any way, cease work and repair with tape before continuing work. If damage is not readily repaired, discontinue use of Glove Bag, thoroughly wet contents, extract the air from the Glove Bag with a HEPA Vacuum and place Glove Bag in an asbestos waste container.
- To remove bag once filled, wash top section and tools thoroughly. Place tools in 1 hand (glove), pull hand out inverted, twist to create separate pouch, double tape to seal. Cut between tape and place pouch with tools in next glove bag; or into water bucket, open pouch underwater, clean tools and allow to dry.

  Extract air from the Glove Bag with a HEPA vacuum and pull asbestos waste container over Glove Bag before removing the pipe. Remove securing straps or tape. Remove Bag from pipe directly into asbestos waste container.
- After removal of bag ensure pipe is clean of residue and clean surfaces of pipe or wipe with wet cloth.

Before completion of shift, apply sealer to all surfaces of freshly-exposed pipe. Apply heavy coat of sealer or end cap to exposed ends of asbestos insulation to remain.

Once Glove Bag is filled dispose of as contaminated waste. Do not reuse bag.

Clean work area with HEPA vacuum or by damp wiping.

6.0 WASTE TRANSPORT AND DISPOSAL

All asbestos transportation and disposal must meet the requirements of Ontario Environmental Protection Act (O. Reg. 347) and the Ontario Occupational Health and Safety Act (O. Reg. and its regulations). As all asbestos waste shall be stored in rigid, impermeable, sealed containers of sufficient strength to accommodate the weight and nature of the waste. Containers shall be labelled and assigned exclusively for asbestos waste and the exterior surface of the asbestos waste containers must be kept free of asbestos waste.

Asbestos waste removed from site shall be removed by a qualified contractor trained in the disposal of asbestos wastes. When waste is removed from site, collect the completed waste waybills from the disposal firm. For work performed by a contractor, the contractor will be responsible for preparing all waste transfer documentation and for providing copies of all documents to HHS. Waste generated by HHS staff will be stored in a secure location until sufficient waste accumulates for a pick-up.

7.0 NOTICE OF PROJECT

If a contractor or Maintenance staff will use glove bags for major amounts of removal (more than one square meter of pipe insulation measured on the outside diameter of the insulation), they must submit a written Notice of Project to the Ministry of Labour as required by Regulation 278/05.

APPENDIX E

Asbestos Project Work Record

ASBESTOS PROJECT WORK RECORD

Building: _____
(Building Address or Name)

Date: _____
(Today's Date)

Project Number: _____
(HHS Project Number or Purchase Order Number)

Project Type: ☐ Emergency ☐ Type 1 ☐ Type 2
☐ Planned Project ☐ Glove Bag ☐ Type 3

Area of Work: _____
(Room Name, Number, Floor etc.)

_____

Description: _____
(Brief description of abatement, material, system, etc.)

_____

Tenant: _____
(Tenant name if any, department or group)

Project Start Date: _____
(Mobilization date)

Project End Date: _____
(After dismantling/clean-up)

Contractor: _____
(Contracting firm or employee)

Telephone: _____
(Contractor or employee telephone)

Consultant: _____
(Name of consulting firm/contact if any)

Telephone: _____
(Consultant telephone)

Pre-Construction Survey for ACM performed and report provided to Contractor?

☐ Yes ☐ No (Explain) _____

Air Sampling during abatement?

☐ Yes ☐ No

Clearance Air Monitoring performed (Regulated requirement after Type 3 abatement)?

☐ Yes ☐ No

Air Monitoring results to Joint Health and Safety Committee?

☐ Yes ☐ No

Asbestos Survey Updated to Reflect Changes in ACM Inventory?

☐ Yes ☐ No No changes to ACM inventory resulted.

☐ No Forward copies to Consultant prior to next re-assessment.

Asbestos waste removed from site and disposed of?

☐ Yes Dump tickets attached. ☐ No. ACM waste not generated.

☐ No ACM waste remains on site for later disposal.

Append the following information relating to asbestos abatement to this work record, if applicable, and file Asbestos Work Record and attachments with Asbestos Management Program. Check where attached.

Submittals including Insurance	☐ Yes	☐ No
Dump tickets, waybills, etc. for waste.	☐ Yes	☐ No
Specifications, Change Orders, Drawings.	☐ Yes	☐ No
Consultant Inspection Reports.	☐ Yes	☐ No
Air Monitoring Results.	☐ Yes	☐ No
Analytical Certificates.	☐ Yes	☐ No
Correspondence as required.	☐ Yes	☐ No

APPENDIX F

Asbestos Medical Surveillance Procedure

1.0 PURPOSE

To protect the health of workers by: ensuring fitness to perform asbestos-related work, evaluating pulmonary health and work history of workers and the possible association with performance of asbestos-related work, enabling remedial action to be taken when necessary and providing health education.

2.0 PROCEDURE

The medical surveillance for workers who have potential asbestos exposure was developed because of the potential long-term health effects associated with asbestos exposure. The medical surveillance program includes the following:

- pre-placement examinations;
- periodic medical examinations
- clinical tests;
- health education; and
- record keeping.

3.0 EMPLOYEE MEDICAL SURVEILLANCE

HHS departments, based on a review by the Health, Safety and Wellness (HSW) and the Hazardous Materials Specialist (HMS), will identify workers performing asbestos-related work, and those who may have previously been exposed to asbestos, who require medical surveillance.

The HMS will provide a copy of the annual Form 1 submitted to the Ministry of Labour to Employee Health Services (EHS).

The EHS Nurse will be advised in writing by the worker's department that the worker has performed asbestos-related work (Form 1). The EHS nurse will arrange for the appropriate initial medical examination, and will add the employee to the recall group, where testing is to be completed every 2 years (periodic medical examinations).

Worker participation in the workplace asbestos medical surveillance program is voluntary. Workers involved currently or previously in work which may result in exposure to asbestos are encouraged to participate in the medical surveillance program. Those workers choosing not to participate in the medical surveillance program are advised to discuss their potential for asbestos exposure with their own physician, and be followed on a regular basis.

EHS will send each worker identified one notice that he or she is encouraged to contact the EHS office to pick up necessary requisitions for surveillance testing. If the worker does not present to EHS, one reminder will be sent. This will occur biannually, on years indicated as medical surveillance years.

The EHS Nurse will maintain a recall list of all active employees requiring monitoring in the asbestos medical surveillance program to facilitate necessary recall for periodic medical examinations. The worker's department will notify (EHS) in writing if the worker ceases employment with HHS.

Workers who cease employment with HHS, who have participated in medical examinations conducted under the asbestos medical surveillance program, will be advised in writing that the surveillance should be continued by their personal physician. Each worker will be informed that copies of their medical record and a summary of their surveillance program can be forwarded to their physician upon written request.

4.0 PRE-PLACEMENT AND PERIODIC MEDICAL EXAMINATIONS

Medical examinations are offered to workers every 2 years, for workers identified as having current or previous potential for asbestos exposure

The clinical examination will include a medical questionnaire, clinical tests and a physical examination. Clinical tests may include a postero-anterior chest x-ray, and pulmonary function test.

Once notified that an employee must be included in the asbestos medical surveillance program, the EHS Nurse will add the employee's name to the list of those requiring bi-annual medical examinations and clinical testing.

Pursuant to the EHS Medical Directives for pulmonary function testing and PA chest radiographs, the EHS Nurse will order a pulmonary function test (spirometry) and PA chest radiograph, and request that the employee complete the Medical Evaluation Questionnaire for Respiratory Protection Users and Confined Space Entry in advance of arranging the asbestos medical surveillance program medical examination.

An assessment of fitness for work shall be based on the clinical examination in conjunction with the clinical tests.

5.0 HEALTH EDUCATION

At the time of the medical examination each employee will be offered information about the health effects of asbestos, use of PPE, and the importance of smoking cessation in preventing asbestos-related diseases.

6.0 FITNESS FOR WORK WITH ASBESTOS AND REPORTING

An assessment of fitness for work shall be based on the clinical examination in conjunction with the clinical tests. The Occupational Health Physician (OHP) shall inform the worker and HHS if the employee is fit, fit with limitations or unfit to work in an asbestos exposure. The OHP shall not give or disclose the records or results of the examination or tests, in advising HHS that the worker is fit with limitations or unfit to work in an environment with potential asbestos exposure because of a condition resulting from exposure to asbestos.

If the OHP determines that signs of asbestos-induced disease are present, the worker shall be removed from performing asbestos-related work and be advised to complete a Safety Occurrence Report to report an occupationally acquired illness before consultation with the medical consultant of the Ministry of Labour and to the Workplace Safety and Insurance Board (WSIB). To qualify for compensation or rehabilitation further assessment by WSIB will be necessary. If asbestos induced disease is confirmed, the OHP shall then determine whether the worker is fit, fit with limitations or unfit.

Upon advising the employer and the worker that the worker, because of a condition resulting from exposure to asbestos, is fit with limitations or unfit for performance of asbestos-related work, the Safety Specialist shall advise the Joint Health and Safety Committee in writing.

In the circumstance above, where the OHP advises the employer that a worker is fit with limitations or is unfit for work in an environment with potential asbestos exposure, the Safety Specialist shall also notify the Provincial Physician, Ministry of Labour.

Where a worker is removed from exposure to asbestos because a physical examination or clinical test discloses that the worker may have or has a condition resulting from exposure to asbestos and suffers a loss of earnings occasioned thereby, the worker is entitled to compensation for the loss in the manner and to the extent provided by the Workplace Safety and Insurance Act.

7.0 RECORD KEEPING

A worker's health records, including records of exposures of the worker to airborne asbestos furnished by HHS, and results of the physical examinations and clinical tests of a worker, shall be kept in a secure place by the examining physician for the longer of:

- a period of forty years from the time such records were first made, or
- a period of twenty years from the time the last of such records were made.

Where the examining physician or his/her successor is no longer able or willing to keep the records, the records are to be forwarded to the Provincial Physician, Ministry of Labour, who will keep them in a secure place.

Copies of the exposure records and results of the physical examinations and clinical tests of a worker shall be given by the physician conducting the examinations or tests,

- to the worker or the worker's physician upon the request in writing of the worker; and
- in the case of a deceased worker, to the next of kin or personal representative of the worker, upon request in writing of such next of kin or personal representative, and any authorization of another person by the worker or the worker's next of kin or personal representative is of no effect.

"Transfer of records." Whenever an employer ceases to do business and there is no successor employer to receive and retain records for the prescribed period or the employer intends to dispose of any records required to be preserved under this section, the employer shall consult the Medical Consultant, Occupational Health and Safety Branch, Ontario Ministry of Labour.

APPENDIX G

Letter of Notification to Tenants Regarding Asbestos in Premises

The following wording should be utilized in communicating the presence of asbestos to a tenant or lessee.

To Tenant Management Representative

This letter is being provided as notification of the presence of asbestos within the building at [address], Ontario. HHS has had an asbestos survey performed of the entire building and have established a program to manage all asbestos in a safe and prudent fashion. O. Reg. 278/05 requires notification of the building's tenants of the location of such material, as well as, notification of workers who may work in close proximity to the material and who may disturb it.

Our consultant inspected all areas of the building and made recommendations, where necessary, for removal or repair of asbestos. All such work [has been completed/will be completed shortly] with appropriate inspection and supervision. All asbestos remaining is subject to the Asbestos Management Program as required by Provincial Regulations and our own due diligence. A copy of the survey and Asbestos Management Program are available for review at the Engineer's Office.

The continuing presence of the remaining asbestos does not pose a risk of exposure to your employees as long as it remains under this management program. Staff that may disturb these materials have been given appropriate training and are aware of its presence. If you are planning maintenance or renovation work please notify the Hazardous Materials Specialist who will determine if the planned work will affect the asbestos in any way and provide information regarding necessary work practices and obligations to maintain a safe and healthy environment for your staff and contractors.

Please ensure that your staff and sub-contractors are aware of the above information. If you have any concerns please contact the facility management office at _____.

Building (Hospital & Address): _____

Tenant: _____

Name and Title: _____

Signature: _____

Date: _____

Owner Representative: _____

APPENDIX H

Contractor Notification and Acknowledgement Form

HHS has identified the presence of various friable and non-friable asbestos-containing materials in the Building. An asbestos inventory report showing the locations and amounts of these materials is available for viewing from the Project Designate.

Ontario Regulation 278/05 (Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations) applies to workers that may disturb asbestos materials. The disturbance of asbestos building materials are only to be undertaken by Asbestos Abatement Contractors that maintain the appropriate insurance coverage and meet the requirements set out in the Asbestos Management Program (AMP). The following activities may disturb asbestos materials. The Project Designate must be notified prior to performing the following:

- Removal or repair of asbestos mechanical insulation.
- Ceiling entry which may disturb mechanical systems insulation.
- Removal or repair of asbestos vinyl sheet flooring or vinyl floor tiles.
- Any other operation which may generate airborne asbestos from friable asbestos.
- Any removal, cutting or other disturbance of non-friable asbestos material (acoustic tiles, transite and floor tiles).
- Disturbing any material excluded from the survey.

Declaration by Contractor

The Contractor and their sub-contractors shall follow the work procedures as specified by HHS's Asbestos Management Program (AMP) and shall not disturb ACM without using proper procedures in accordance with Regulation 278/05 and this AMP.

HHS reserves the right to take any and all actions necessary to enforce safe asbestos work practices and strict adherence to the AMP and Regulation 278/05 including if necessary alerting the MOL to infractions on construction projects

We agree that our staff will not disturb asbestos-containing materials without prior notification to the Facility Manager. This firm and our staff will follow all procedures specified by the HHS Asbestos Management Program and/or O. Reg. 278/05. All asbestos waste will be packaged and disposed of in accordance with Ministry of the Environment requirements.

Notification of Asbestos Abatement

All contractors and HHS employees who perform work at facilities where ACM is present should be notified of the presence of the ACM if their work may bring them into contact or close proximity to the ACM and they may disturb it. This notification may include janitorial, security, telephone, computer

cabling suppliers, mechanical maintenance contractors, etc. This notification shall be performed by the Hazardous Materials Specialist or Project Designate.

It is the Contractor's responsibility to:

- Notify orally and in writing, an inspector at the office of the Ontario Ministry of Labour nearest the project site (Notice of Project), as per Regulation 278/05, prior to commencing Type 3 abatement or Glove Bag abatement of more than one square meter of friable material.
- Notify Sanitary Landfill site as per Ontario MOE Regulation 347 as amended.
- Inform all sub trades of the presence of ACM identified in the contract documents.
- Notify the Project Designate if friable materials not identified in the contract documents are discovered during the course of the work. The contractor is to notify the MOL and the Joint Health and Safety Committee if the friable material is asbestos containing, as required by Regulation 278/05.

Building (Hospital & Address): _____

Project/Work Order: _____

Contractor: _____

Name and Title: _____

Signature: _____

Date: _____

Owner Representative: _____

APPENDIX I

HHS Asbestos Work Area Signage

DANGER ASBESTOS DUST HAZARD

Access Restricted to Workers Wearing PPE as Detailed Below

Scope of Work			
Companies Involved		Contact and Phone	
Classification of Work		PPE Required	
Project Name			
Start Date		Est. End Date	
Posted by: (Name/contact No.)		Date, time posted:	

*Post Varied Type 3 procedures at the entrance of the asbestos work area if the Varied Procedures differ from what is written in the HHS AMP. Ensure Varied Procedures have been summited to the JHSC, as necessary.

APPENDIX J

Powder Actuated Nail Fastener Type 2 Varied Work Procedure

PART 1 GENERAL

1.1 General

.1 The following Type 2 varied procedure is to be followed when using a powder actuated nail fastner to install metal wall bases to concrete slabs where asbestos-containing mastic has been scraped to a thin stain-like film at West Lincoln Memorial Hospital located at 169 Main Street East in Grimsby, Ontario.

.2 It is Pinchin's opinion that this type of work is classified as a Type 2 operation in the Ontario Asbestos Regulation 278/05 (O.Reg. 278/05), an operation that may expose a worker to asbestos and is not classified as a Type 1, 2 or 3 operation, as per Section 12(3)11 of O.Reg. 278/05. However, in order to determine appropriate procedures; testing has been performed by Hamilton Health Sciences (HHS), which indicates that the varied measures and procedures provide equivalent protection for the workers, as required by Section 23 of O.Reg. 278/05. Testing included; personal, area and reference air sampling during the fastening work of bases to the concrete slab where asbestos-containing mastic is present within the test location.

.3 The varied procedures include: specific worker training in the varied procedures, varied personal protective equipment, varied worker decontamination procedures and varied site isolation procedures.

.4 This varied procedure has been prepared solely for HHS and may be distributed to contractors properly trained and qualified to perform asbestos work that they retain to perform the work outlined in this Section.

.5 Provide a copy of this procedure to the Joint Health and Safety Committee for the workplace prior to implementing the procedures.

.6 All work outlined in this varied procedure is to be completed in accordance with the requirements outlined in the HHS Infection Prevention Control Guidelines.

1.2 Site Conditions

.1 Refer to the most recent Asbestos-containing Materials Reassessment Report for the facility. This document can be reviewed with the HHS Hazardous Materials Specialist, Project Designate or Facilities Management, by appointment.

.2 Black mastic, containing chrysotile asbestos, is present in various locations throughout the site.

1.3 Instruction and Training

.1 Provide instruction and training to all workers, which should include the following:

- .1 Hazards of asbestos.
- .2 Use, care and disposal of protective equipment (including but not limited to respirators and filters) and clothing that may be used and worn during work outlined in this varied procedure, including:
  - .1 Limitations of equipment.
  - .2 Inspection and maintenance of equipment.
  - .3 Proper fitting of equipment.

.4 Disinfecting and cleaning of equipment.

.3 Personal hygiene to be observed when performing the work.

.4 The measures and procedures prescribed by this section.

.5 Instruction and training must be provided by a competent person.

1.4 Personal Protection

.1 Asbestos Personal Protective Equipment (PPE) is not required, unless it is requested by the worker, where asbestos PPE is requested by the worker then the following should be provided:

.1 Non-powered half-face respirators with P100 high efficiency (HEPA) cartridge filters.

.2 Disposable protective clothing.

.2 Where respiratory protection is requested by the worker, respirators shall be:

.1 Certified by the National Institute of Occupational Safety and Health (NIOSH) or other testing agency acceptable to the Ministry of Labour.

.2 Fitted so that there is an effective seal between the respirator and the worker's face. Ensure that no person required to enter an Asbestos Work Area has facial hair which affects the seal between respirator and face.

.3 Assigned to a worker for their exclusive use.

.4 Maintained in accordance with manufacturer's specifications.

.5 Cleaned, disinfected and inspected by a competent person after use on each shift, or more often if required.

.6 Repaired or have damaged or deteriorated parts replaced.

.7 Stored in a clean and sanitary location.

.8 Provided with new filters as necessary, according to manufacturer's instructions.

.9 Worn by personnel who have been fit tested by qualitative or quantitative fit-testing. Instruction must be provided by a competent person as defined by the Occupational Health and Safety Act.

.3 Where protective clothing is requested by the worker, provide protective clothing which:

.1 Is made of a material that does not readily retain nor permit penetration of asbestos fibres.

.2 Consists of head covering and full body covering that fits snugly at the ankles, wrists and neck.

.3 Is replaced or repaired if torn or ripped.

.4 Wear hard hats, safety shoes and other personal protective equipment required by applicable safety regulations and HHS policies.

.5 Provide soap, towels and facilities for washing of hands and face following the completion of work.

.6 Prohibit smoking, eating, drinking, chewing in the Asbestos Work Area.

PART 2 EXECUTION

2.1 Site Preparation and General Procedures

.1 Install caution tape barrier to restrict access to only personnel performing the work. Post HHS varied work procedure warning signs at caution tape barrier.

.2 Place required equipment and materials in the Work Area.

.3 HVAC system servicing the Work Area may remain operational.

.4 Maintain Work Area in tidy condition. Do not track dirt or dust to adjacent areas outside of the Work Area.

.5 Do not use compressed air to clean or remove dust or debris.

2.2 Procedure

.1 Ensure that asbestos-containing vinyl floor tiles within the work area have been removed and disposed of and black mastic has been scraped to a thin stain-like film following Type 1 procedures prior to completing any of the work outlined below.

.2 Wet all areas of the floor to be affected by the work with amended water in order to control the spread of dust.

.3 Proceed with using a powder actuated nail fastener to install metal wall bases to the concrete slab where the asbestos-containing vinyl floor tiles were removed and the black mastic has been scraped to a stain-like film.

.4 Upon completion of work, clean the top of the metal wall bases that were installed using a HEPA vacuum or wet wipe methods.

2.3 Clean-up and Dismantling

.1 Clean Work Area, equipment, tools, etc. using a HEPA vacuum or wet wiping methods.

.2 Remove caution tape barrier and HHS varied work procedure warning signs.

2.4 Worker Clean-up

.1 Proceed to designated washroom or sink and wash hands and face.

.2 If protective clothing and respirator were worn, then the following shall apply:

.1 Protective clothing should not be reused and be placed in an asbestos waste container.

.2 Maintain respirator and replace filters as necessary, only where worn by the worker.

PART 3 PRODUCTS AND FACILITIES

3.1 Materials and Equipment

.1 Amended Water: Water with wetting agent added for purpose of reducing surface tension to allow thorough wetting of ACM.

.2 Asbestos Waste Container: An impermeable container acceptable to disposal site and Ministry of the Environment comprised of one of the following:

.1 A 6 mil (0.15 mm) labelled yellow sealed polyethylene bag, inside a second clear 6 mil (0.15 mm) sealed polyethylene bag.

.2 A 6 mil (0.15 mm) sealed polyethylene bag, positioned inside or outside a rigid sealed container of sufficient strength to prevent perforation of the container during filling, transportation and disposal.

.3 Labelled containers as required by the Ontario Ministry of the Environment Reg. 347 as amended and Regulation 278/05.

.3 HEPA Vacuum: High Efficiency Particulate Arresting (HEPA) filtered vacuum equipment with a filter system capable of collecting and retaining spherical particles greater than 0.3 microns at 99.97% efficiency.

.4 Protective Clothing: Disposable full body coveralls complete with hoods manufactured of a material which does not permit penetration of asbestos fibres. Coveralls to fit snugly at ankles, wrists and neck. Acceptable materials: Dupont Tyvek or Kimberly Clark Kleenguard.

.5 Sprayer: Garden type portable manual sprayer or water hose with spray attachment if suitable.

.6 Tape: Duct tape or tape suitable for sealing polyethylene to surfaces under both dry and wet conditions in the presence of Amended Water.

3.2 Signage

.1 HHS Varied Work Procedure Warning Signs: Post signs in both official languages at access points to the Work Areas. Refer to attached signage at the end of this document for reference.

3.3 Waste and Material Handling

.1 Transport waste and materials via the predetermined routes and exits. Arrange waste transfer route with Owner. Use a closed, covered cart to transport through Occupied Areas.

PART 4 APPLICABLE REGULATIONS

4.1 Regulations

.1 Comply with Federal, provincial, and local requirements, provided that in any case of conflict among those requirements or with this varied procedure the more stringent requirements shall apply. Work shall be performed under regulations in effect at the time work is performed. Regulations include but are not limited to the following:

.2 Ministry of Labour Occupational Health and Safety Act Regulations for Construction Projects including Revised Statutes of Ontario 1990, Chapter 0.1 and Ontario Regulation 278/05.

.3 Ministry of Transportation Regulations for the transport of asbestos waste, including the Transportation of Dangerous Goods Act.

.4 Ministry of the Environment Regulations for the disposal of asbestos waste, including R.R.O. 1990, Reg. 347 as amended

END OF VARIED PROCEDURE

APPENDIX K

Asbestos Abatement Inspection Form

HAMILTON HEALTH SCIENCES **ASBESTOS ABATEMENT INSPECTION FORM**
Project Name:

LOCATION OF ASBESTOS ABATEMENT

Hospital:_____ Location:_____
Project :_____ Abatement Company:_____
Project Manager:_____ Contact Information:_____

ASBESTOS ABATEMENT DETAILS: (List materials, quantity and other details):_____

Action: Cleaning☐ Repair☐ Encapsulation☐ Removal☐:→ Type 1☐ Type 2☐ Type 2 glove bag☐ Type 3☐
Type of Asbestos: Chrysotile☐ Other than Chrysotile☐: _____
Contractor PPE: None☐ ½ Face APR☐ Full Face APR☐ PAPR☐ Supplied Air☐ Coveralls☐ Other ☐
Was asbestos material replaced? Yes☐ No☐ → If Yes with what:_____
Has MOL notice of project been posted at Site? Yes☐ No☐ Notice of Project No._____
Is the Project a Varied Type 3? Yes☐ No☐ Was a copy of the variance submitted to JHSC Yes☐ No☐

WORK SITE ENCLOSURE INSPECTION GENERAL CHECKLIST

Pre-Removal	**DATE (d/m/y):**	**Time:**	**a.m.☐ p.m.☐**	**Type 1**	**Type 2**	**Type 3**
Have washing facilities for hands and face been provided?						
Have appropriate drop sheet(s) and/or enclosure(s) been used/constructed?						
Has visible dust been cleaned from work area before start or work?						
Have all items been removed from work area or been covered with sheeting?						
Has signage been posted warning of asbestos hazard and restricting access?						
Have windows been constructed in the enclosure? (opaque enclosures only)						
Has mechanical ventilation been disabled and sealed?						
Has worker decon been constructed (clean & dirty change rooms, shower)?						
Has negative pressure been applied to enclosure & exhausted through HEPA?						
Has a device for monitoring pressure differential been installed & monitored?						
Has a min of 0.02 In W.C. (5 Pascals) been achieved in the enclosure?						
Pressure Differential (In W.C. ☐ Pa ☐)						
Active/Post Removal	**DATE (d/m/y):**	**Time:**	**a.m.☐ p.m.☐**	**Type 1**	**Type 2**	**Type 3**
Are appropriate drop sheet(s) and/or enclosure(s) being used/constructed?						
Has ACM been wetted using water and a wetting agent?						
Have appropriate waste containers been used (dust tight, proper labelling)?						
Has work area been thoroughly cleaned of all asbestos waste, debris and dust?						
Is waste and equipment leaving work area being cleaned (HEPA, damp wipe)?						
Was "Lock Down" or sealant applied after final clean-up?						
Has a min of 0.02 In W.C. (5 Pascals) been maintained in the enclosure?						
Pressure Differential (In W.C. ☐ Pa ☐)						

Was Air Monitoring/Clearance Air Testing performed? Yes☐ No☐
Was Forced Air used and Negative Air Pressure maintained during Air Clearance sampling? Yes☐ No☐
Did the Air Clearance Testing Pass? Yes☐ No☐
Was a member of the JHSC present during Sampling? Name: _____

Notes:_____

Inspector(s):_____