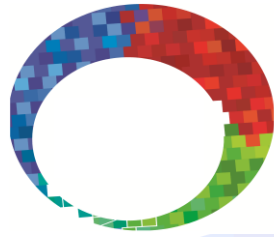


#220-19358 96 Avenue, Surrey, BC, V4N 4C1

Office: 604-593-8275 Fax: 604-593-8276

E-mail: info@bchazmatinspections.ca

Web: bchazmatinspections.ca



**COAST
BC
HAZMAT**

COAST BC HAZMAT INSPECTIONS

PRE-DEMOLITION HAZARDOUS MATERIALS ASSESSMENT

File #:	22674
Site Location:	5349 Sunshine Coast Hwy, Sechelt, B.C.
Prepared For:	Sechelt Nation
Date of Inspection:	March 4th, 2020
Inspected By:	Dave Furtado
Reviewed By:	Andrea Mullen

LABORATORY SERVICES:

- Asbestos Bulk Sample Analysis
 - o NIOSH 9002
 - o ISO 22262-2
 - o TEM (Transmission Electron Microscopy)
- Asbestos Air Sample Analysis
 - o NIOSH 7400
- Lead Sample Analysis
 - o ISO 20807:2004 (X-Ray Fluorescence)

SERVICES:

- Hazardous Materials Assessments (HMA)
- Asbestos Management Plans
- Qualified Professional Service (City of Vancouver)
- Hazardous Materials Abatement
 - o Asbestos
 - o Lead
 - o Mold

Table of Contents

1.1 Introduction

1.2 Occupational Health & Safety Regulation 20.112 Hazardous Materials

1.3 Methodology

1.4 Disposal of Hazardous Waste Asbestos

2.1 Site Description

2.2 Interior Description / Other Hazardous Materials

2.3 Floorplan

2.4 Mold, Mercury, PCB'S, Leads, Chemicals and Other Hazardous Materials Site

3.1 Asbestos Containing Materials Summary

3.2 Recommendations

3.3 Certification

1.1 INTRODUCTION

This certifies that a pre-demolition hazardous materials assessment has been conducted for the above noted address. It must be emphasized that this hazardous materials assessment was conducted exclusively for the above noted address. A detailed report has been compiled noting the presence and location of asbestos containing building materials and other hazardous materials.

The inspection was performed as per WorkSafeBC Regulation 20.112 in trying to identify any hazardous materials including asbestos containing materials that may be handled, disturbed or removed during remodelling or demolition of the building.

1.2 OCCUPATIONAL HEALTH & SAFETY REGULATION 20.112 HAZARDOUS MATERIALS

(1) In this section:

"hazardous material" means a hazardous substance, or material containing a hazardous substance, including

- (a) asbestos-containing material,
- (b) lead or any other heavy metal, or
- (c) toxic, flammable or explosive material,

that may be handled, disturbed or removed in the course of the demolition or salvage of machinery, equipment, a building or a structure, or the renovation of a building or structure;

"qualified person", means a person who

- (a) has, through education and training, knowledge of the management and control of the hazardous materials that the qualified person is made aware of by the employers, and the owner, or that are reasonably foreseeable by the qualified person, as being

- (i) on or in the machinery, equipment, building or structure that is the subject of the demolition, salvage or renovation, or
 - (ii) at the worksite, and

- (b) has experience in the management and control of those hazardous materials.

(2) Before work begins on the demolition or salvage of machinery, equipment, a building or a structure, or the renovation of a building or structure, all employers responsible for that work, and the owner, must ensure that a qualified person inspects the machinery, equipment, building or structure and the worksite to identify the hazardous materials, if any.

(3) In conducting an inspection and identifying the hazardous materials, if any, under subsection (2), a qualified person must do the following:

- (a) collect representative samples of the material that may be hazardous material;
- (b) identify each representative sample and determine whether it is hazardous material;
- (c) if the actions under paragraphs (a) and (b) are not practicable, or not appropriate in the circumstances, use other sufficient means to identify the hazardous materials, if any;
- (d) based on the actions taken under paragraphs (a) and (b) or (c), determine the location of each of the hazardous materials identified;
- (e) make a written report of the inspection, including,
 - (i) if the actions under paragraphs (a) and (b) were taken,
 - (A) the location of each representative sample, and
 - (B) the identity of each representative sample and whether it is hazardous material,
 - (ii) if the actions under paragraph (c) were taken, the identity of each of the hazardous materials, if any,
 - (iii) a description of the methods used under paragraph (b) or (c),
 - (iv) the location, as determined under paragraph (d), of each of the hazardous materials identified, including by using drawings, plans or specifications, and
 - (v) the approximate quantity of each of the hazardous materials identified.

(4) All employers responsible for work being carried out on the worksite where the demolition or salvage of the machinery, equipment, building or structure, or the renovation of the building or structure is taking place, and the owner, must ensure that the following information is available at the worksite:

- (a) a report made under subsection (3)(e);
- (b) a report made under subsection (6)(e);
- (c) a written confirmation under subsection (8).

(5) All employers responsible for containing or removing any of the hazardous materials identified under subsection (2) or (6) must safely contain or remove those hazardous materials.

(6) If, after written confirmation is provided under subsection (8), a person discovers material that may be hazardous material on or in the machinery, equipment, building or structure or at the worksite, not previously determined to be hazardous material under this section, all employers responsible for the demolition or salvage of the machinery, equipment, building or structure, or the renovation of the building or structure, and the owner, must ensure that a qualified person does the following:

- (a) collects representative samples of the material;
- (b) identifies each representative sample and determines whether it is hazardous material;
- (c) if the actions under paragraphs (a) and (b) are not practicable, or not appropriate in the circumstances, uses other sufficient means to determine if the material is hazardous material;
- (d) based on the actions taken under paragraphs (a) and (b) or (c), determines the location of the hazardous material, if any;
- (e) makes a written report, including,

- (i) if the actions under paragraphs (a) and (b) were taken,
 - (A) the location of each representative sample, and
 - (B) the identity of each representative sample and whether it is hazardous material,
- (ii) if the actions under paragraph (c) were taken, the identity of the hazardous material, if any, and
- (iii) if hazardous material was identified, the location of the hazardous material, including by using drawings, plans or specifications.

(7) All employers responsible for the demolition or salvage of the machinery, equipment, building or structure, or the renovation of the building or structure, and the owner, must ensure that, with respect to the hazardous materials identified under subsection (2) or (6),

- (a) no demolition, salvage or renovation work that may disturb the hazardous materials, other than work necessary to safely contain or remove the hazardous materials, is carried out until the hazardous materials are safely contained or removed, and
- (b) a qualified person complies with subsection (8).

(8) A qualified person must ensure, and confirm in writing, that the hazardous materials identified under subsection (2) or (6) are safely contained or removed.

Once the hazardous materials have been removed and contained, it must be disposed of as per the Ministry of Environments' Hazardous Waste Regulation and Environmental Management Act. For the transport of hazardous materials, Transport of Dangerous Goods Regulation. It is required that all hazardous materials be packaged, transported and disposed of or recycled properly as per all applicable regulation.

1.3 METHODOLOGY

A visual inspection of the interior and exterior is undertaken to determine the type, location and homogenous nature of suspect hazardous materials including asbestos containing materials. These areas include but, are not limited to: the attic, ceilings, walls, floors, cavities (if accessible), HVAC systems, boiler systems, interior and exterior finishes, roofing and out buildings. Although the site assessment was thorough in investigating layered flooring, wall and ceiling systems. Inaccessible floor cavities, wall cavities and ceiling cavities which would require dismantling portions of the building to gain access were not investigated. Underground services or the surrounding property were not investigated.

During our inspection, representative bulk asbestos samples are collected in documented and described locations. The bulk samples are then submitted for laboratory analysis. The bulk asbestos samples are analysed as per Analytical Method, National Institute for Occupational Safety and Health (NIOSH) 9002. Using Polarized Light Microscopy (PLM) and dispersion staining techniques.

Asbestos Containing Material (ACM) is defined as a material with 0.5% or greater asbestos fibre concentration. With the exception of vermiculite insulation which is defined

as an asbestos containing material if it contains a trace amount of asbestos. Sample reports fibre composition only.

The laboratory results are attached to this hazardous materials assessment. Risk Assessment and any other hazardous materials observed are documented in the following sections.

1.4 DISPOSAL OF HAZARDOUS WASTE (ASBESTOS)

The Environmental Management Act (EMA) of British Columbia prohibits the introduction of waste into the environment in a way that will cause pollution, except in accordance with a regulation, permit, approval or code of practice issued under the Act. The Hazardous Waste Regulation (HWR) addresses the proper handling and disposal of hazardous wastes, under the EMA.

HWR Part 6 – Management of Specific Hazardous Waste, Section 40 – Management of Waste Asbestos

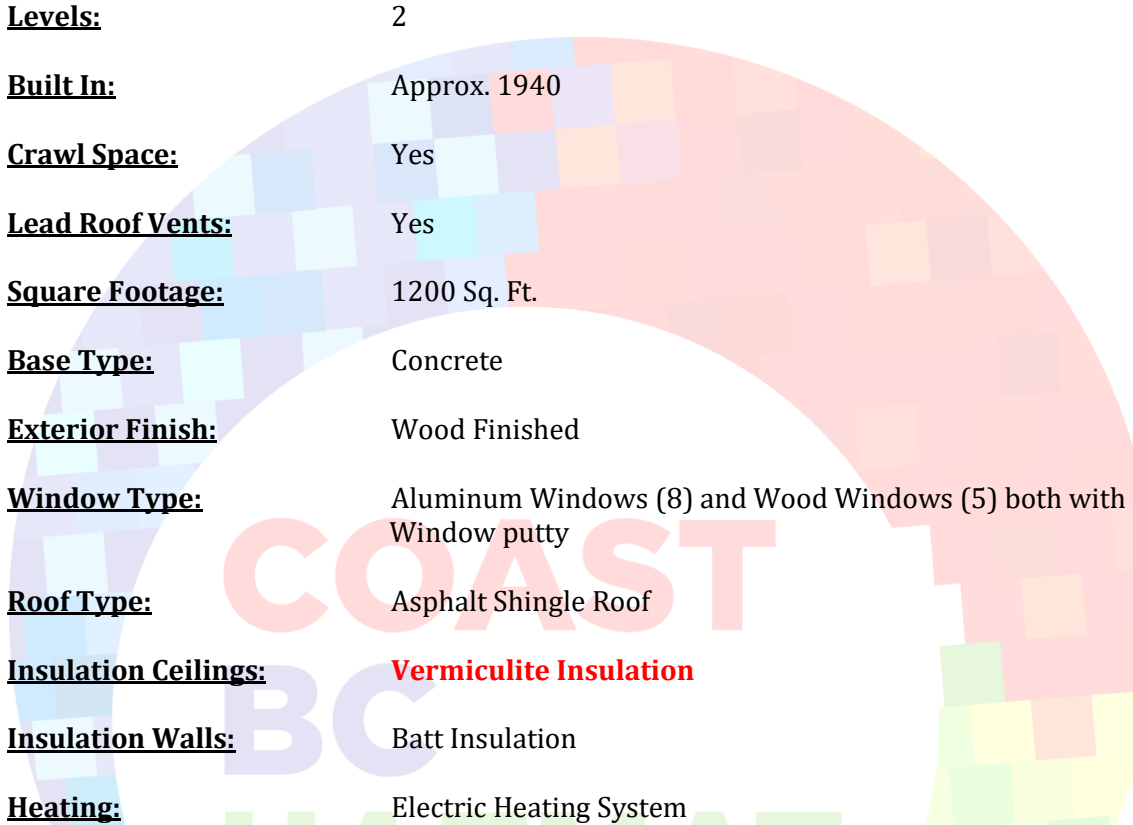
Section 40

(1) For the purposes of the definition of "waste asbestos" in section 1 (1) of this regulation, if the concentration of asbestos in the waste is not determined by weight at the time of manufacture, it must be determined using one of the following:

- (a) Method 600-R-93-116, as amended from time to time, published by the United States Environmental Protection Agency;
- (b) NIOSH Method 9002, as amended from time to time, from the *NIOSH Manual of Analytical Methods*, 4th Edition, published by the National Institute for Occupational Safety and Health, United States.

- (2) A person must not deposit waste asbestos in a landfill other than a secure landfill unless
- (a) A permit or an approval has been issued under the Act to operate the landfill, or the landfill is operated under a waste management plan,
 - (b) The waste asbestos is confined during handling, storage and transportation by
 - (i) Dry airtight containment techniques such as
 - (A) Packing in 6 mil plastic bags placed within a non-reusable drum and then sealed, or
 - (B) Packing in a 6 mil plastic bag placed within a second 6 mil plastic bag and then sealed, or
 - (ii) Wet containment techniques such as saturation with water and containment in non-leaking sealed drums or equivalent, or
 - (iii) approved containment techniques,
 - (c) The waste asbestos is disposed of at the landfill by being immediately buried with a minimum of 0.5 m of cover material,
 - (d) Approval of the landfill owner is received before disposal takes place, and
 - (e) The deposit is authorized by a director and carried out in accordance with the director's requirements.

2.1 SITE DESCRIPTION



<u>Levels:</u>	2
<u>Built In:</u>	Approx. 1940
<u>Crawl Space:</u>	Yes
<u>Lead Roof Vents:</u>	Yes
<u>Square Footage:</u>	1200 Sq. Ft.
<u>Base Type:</u>	Concrete
<u>Exterior Finish:</u>	Wood Finished
<u>Window Type:</u>	Aluminum Windows (8) and Wood Windows (5) both with Window putty
<u>Roof Type:</u>	Asphalt Shingle Roof
<u>Insulation Ceilings:</u>	Vermiculite Insulation
<u>Insulation Walls:</u>	Batt Insulation
<u>Heating:</u>	Electric Heating System

2.2 INTERIOR DESCRIPTION / OTHER HAZARDOUS MATERIALS

C: Ceiling **W:** Wall **F:** Floor **Other H.M.:** Other Hazardous Materials

LEVEL 1 DESCRIPTION

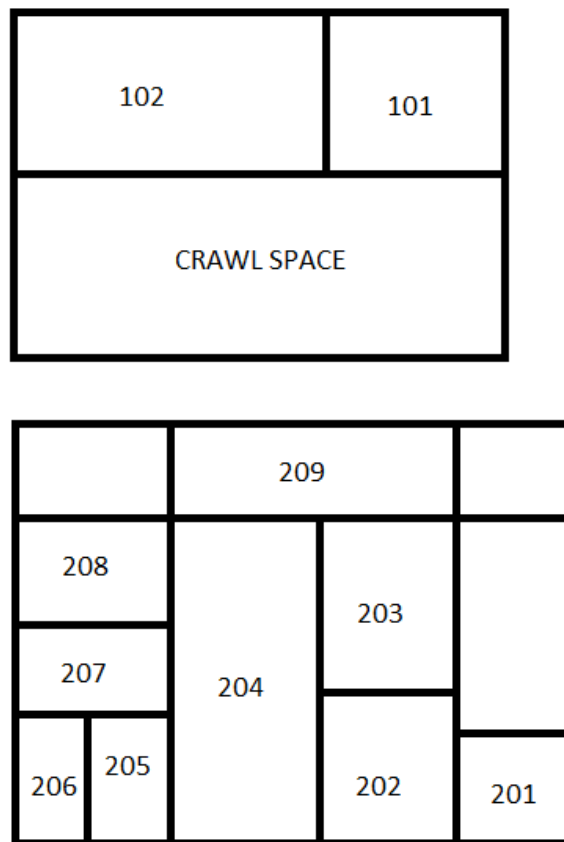
<u>101 Laundry Room</u> <u>72 Sq. Ft.</u> <u>C:</u> Drywall <u>W:</u> Wood <u>F:</u> Concrete <u>Other H.M.:</u> Washer, Dryer	<u>102 Entry</u> <u>120 Sq. Ft.</u> <u>C:</u> Drywall <u>W:</u> Drywall <u>F:</u> Laminate/Concrete <u>Other H.M.:</u> (0)
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LEVEL 2 DESCRIPTION

<u>201 Entry</u> <u>52 Sq. Ft.</u> <u>C:</u> Wood <u>W:</u> Drywall <u>F:</u> Laminate/Carpet/Wood <u>Other H.M.:</u> (0)	<u>202 Kitchen</u> <u>135 Sq. Ft.</u> <u>C:</u> Textured Drywall <u>W:</u> Drywall <u>F:</u> Laminate/Vinyl Sheet/Wood <u>Other H.M.:</u> (0)	<u>203 Dining Room</u> <u>110 Sq. Ft.</u> <u>C:</u> Textured Drywall <u>W:</u> Wood/Drywall <u>F:</u> Laminate/Vinyl Sheet/Wood <u>Other H.M.:</u> (0)
<u>204 Living Room</u> <u>300 Sq. Ft.</u> <u>C:</u> Textured Drywall <u>W:</u> Drywall <u>F:</u> Laminate/Wood <u>Other H.M.:</u> (0)	<u>205 Entry</u> <u>21 Sq. Ft.</u> <u>C:</u> Textured Drywall <u>W:</u> Drywall <u>F:</u> Laminate/Vinyl Sheet/Wood <u>Other H.M.:</u> (0)	<u>206 Bathroom</u> <u>42 Sq. Ft.</u> <u>C:</u> Drywall <u>W:</u> Wood <u>F:</u> Laminate/Vinyl Sheet/Wood <u>Other H.M.:</u> (0)

<u>207 Middle Left Bedroom</u> <u>105 Sq. Ft.</u> <u>C:</u> Textured Drywall <u>W:</u> Drywall <u>E:</u> Laminate/Vinyl Sheet/Wood <u>Other H.M.:</u> (0)	<u>208 Rear Left Bedroom</u> <u>144 Sq. Ft.</u> <u>C:</u> Textured Drywall <u>W:</u> Drywall <u>E:</u> Laminate/Wood <u>Other H.M.:</u> (0)	<u>209 Sun Room</u> <u>180 Sq. Ft.</u> <u>C:</u> Drywall <u>W:</u> Wood <u>E:</u> Laminate/Wood <u>Other H.M.:</u> (0)
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2.3 FLOORPLAN



FRONT

2.4 MOLD, MERCURY, PCB's, LEAD, CHEMICALS & OTHER HAZARDOUS MATERIALS

A visual inspection of the building was conducted for the presence of the following materials:

1. Mold a respiratory health hazard.
2. Wall mounted thermostat switches or gauges suspected of containing mercury.
3. Fluorescent light fixtures suspected of containing PCB's.
4. Chemicals on the premises suspected of containing hazardous material.
Including: flammable, toxic, corrosive and explosive content.
5. Paint, paint thinners and other suspected lead containing materials.
6. CFC's (Chlorofluorocarbon) in refrigeration equipment.
7. Radioactive heat or smoke detectors.

MOLD

Molds are ubiquitous, and mold spores are a common component of household and workplace dust. Molds cause biodegradation of natural materials, which can be unwanted when it comes to food spoilage or damage to property.

When mold spores are present in large quantities, they can present a health hazard to humans, potentially causing allergic reactions and respiratory problems. Some diseases of animals and humans can be caused by certain molds: disease may result from allergic sensitivity to mold spores, from growth of pathogenic molds within the body, or from the effects of ingested or inhaled toxic compounds produced by molds.

MERCURY

Liquid mercury and other forms of mercury are found in wall mounted thermostats and in new energy efficient light bulbs. Mercury must be disposed of as per the Ministry of Environment's Hazardous Waste Regulation.

Mercury, in its elemental form can form a vapour at room temperature. Inhaling mercury vapours, absorption into skin or ingesting the liquid form can cause serious injury. Birth defect, brain damage, nervous system failure, kidney failure or even death. It can also enter your body via food.

PCB's

If during our inspection suspect fluorescent light fixture(s) containing PCB's were observed, have the units removed prior to demolition and disposed of as per the Ministry of Environment's Hazardous Waste Regulation.

PCB's are known to cause cancers, neurological development problems in children, reproductive problems and can suppress the immune system. PCB's are also released into the environment and most commonly absorbed into fish and, through predation, they enter other areas of the food chain.

LEAD

During our inspection some suspect oil based paints, primers and enamels applied to the interior and/or exterior surfaces were observed and are suspected of containing lead and/or other heavy metals. They are not considered to be an issue, as the building will be demolished primarily by machine. If the building is to be deconstructed or demolished by

hand, where workers would be in direct contact with possible lead containing materials, further lead sampling must be completed before any such work may commence.

Lead exposure can cause vomiting, convulsions, coma, intellectual development problems, anemia, brain damage and even death. Improper disposal can cause food chain related contamination and, through predation, can enter the human food supply. All lead must be disposed of as per the Ministry of Environment's Hazardous Waste Regulation.

Paints and coatings in excess of 90 mg/kg (0.009%) lead are considered to be lead containing as defined by the Hazardous Products Act. (Canada) and WorkSafeBC. Lead was also commonly used for waste drain vent pipes on the roof of buildings due to its durability and its resistance to corrosion.

Lead containing paint is assumed to be present on interior walls and ceilings, on trim work and doors, and on exterior surfaces of the structure. When an excavator is used to demolish the structure, both the equipment operator and the employee effecting dust control through constant wetting, should wear respirators equipped with HEPA filters.

In the event that the surfaces to which lead based coatings have been applied are to be disturbed by sanding, grinding, burning, etc. the coating must be removed prior to these activities. The removal of lead containing coatings must be performed in accordance WorkSafeBC Occupational Health and Safety Regulations, following appropriate procedures, by a qualified abatement contractor.

****Bulk sampling for lead showed that 2 out of 7 samples were found to be lead containing in excess of 90 ppm. Bulk lead sampling results are attached. Please see Lead Summary below:**

<u>Sample #</u>	<u>Level</u>	<u>Room(s)</u>	<u>Material</u>	<u>PPM</u>	<u>Amount</u>
<u>22674-1-1</u>	<u>Ext.</u>	<u>Exterior House North Wall</u>	<u>Paint Chip (Blue)</u>	<u>128</u>	<u>~1400 Sq. Ft.</u>
<u>22674-1-2</u>	<u>Ext.</u>	<u>Exterior House East Wall</u>	<u>Paint Chip (Blue)</u>	<u>131</u>	<u>~1400 Sq. Ft.</u>

CHEMICALS and other HAZARDOUS MATERIALS

All chemicals and other hazardous materials need to be removed prior to demolition. It is the responsibility of the owner to have these materials or items removed themselves or to hire a hazardous materials contractor to do so. Keep in mind that the asbestos abatement contractor you hire to remove the asbestos containing materials may not necessarily remove other chemicals or hazardous materials. Often it is expected that you contract them or someone else separately to do so. All materials need to be disposed of as per the Ministry of Environment's Hazardous Waste Regulations.

3.1 ASBESTOS CONTAINING MATERIALS SUMMARY

12 out of 25 samples collected for laboratory analysis were confirmed to contain asbestos. Asbestos containing materials requiring removal and their locations are listed in the table below and the laboratory results pages are attached to the back of this report.

Sample #	Level	Room(s)	Material	Risk	Amount
Visually Identified	All	Bell and Spigot Joints – Rope gasket in joints is assumed ACM.	Rope Gasket	Moderate	~10 Joints
Visually Identified	All	Vermiculite Ceiling Insulation	Vermiculite	High	800 Q. Sq. Ft.
18 19 20 21 22 23	All	102 Entry Window 102 Entry Window 102 Entry Window 208 Left Rear Bedroom Window 209 Left Rear Bedroom Window 209 Left Rear Bedroom Window ALL WINDOWS WITH WINDOW PUTTY ARE TO BE CONSIDERED AND REMOVED AS ACM.	Window Putty	Moderate	~ 8 Windows
1	2	202 Kitchen Ceiling ALL LEVEL 1 DRYWALL FILLER COMPOUND IS TO BE CONSIDERED AND REMOVED AS ACM.	Drywall Filler Compound (DFC)	Enhanced Moderate	280 Sq. Ft.
1 2 3	2 2 2	202 Kitchen Ceiling 204 Living Room Ceiling 208 Left Rear Bedroom Ceiling ALL LEVEL 2 TEXTURED COAT IS TO BE CONSIDERED AND REMOVED AS ACM.	Texture Coat	High	135 Sq. Ft. 300 Sq. Ft. 144 Sq. Ft.
15 16	2 2	205 Entry Floor – backing 206 Bathroom Floor - backing Although not detected, If the same vinyl flooring is found elsewhere on site it must be removed as ACM.	Vinyl Sheet Floor (VSF)	High	21 Sq. Ft. 42 Sq. Ft.
Although not detected it is possible Vermiculite Insulation is present in hidden and inaccessible cavities in the site. If Vermiculite Insulation is found anywhere on site all work is to stop immediately and Coast BC Hazmat Inspections Inc. is to be contacted for further investigation.					

It is **unsafe to proceed with the demolition** of the above building until all asbestos containing materials have been removed and disposed of as per Work Safe BC OHS Regulations and Guidelines. Only “Qualified Abatement Contractors” can remove and dispose of these materials.

Risk Assessment is based on Work Safe BC Regulation and may be changed if the "Qualified Abatement Contractor" can satisfy Work Safe BC that their procedures are adequate. They must also be able to show a history of professional experience and air monitoring results to prove that their procedures are adequate. Risk Assessment can, and will, change depending on the procedures used by the "Qualified Abatement Contractor" to remove the asbestos containing materials

When collecting samples, we give each room, or an area, a number. For example we may designate a particular room as #102 Bathroom. The 1st digit represents that we are referring to level 1 (or basement). And 02 means it was the 2nd room on that level that we inspected. This # would be marked on the wall of that room. For ex: #201 Entry, would refer to the Level 2 entry.

Example: Carpet / VSF* / Wood means this room flooring has carpet placed over Vinyl Sheet Floor over wood.

*VSF = Vinyl Sheet Floor, VFT = Vinyl Floor Tile, DFC = Drywall Filler Compound.

The locations of the rooms in the reports are determined by someone standing outside the front door and facing towards the house. For example "Right Front Bedroom" is to the right of us and at the front of the house, closest to us.

3.2 RECOMMENDATIONS

Prior to beginning any demolition work that may infringe upon the asbestos containing or other hazardous material within the building, the following must be performed:

- 1) All asbestos containing materials must be removed from the building by a qualified asbestos abatement contractor.
- 2) Any PCB light ballasts or mercury containing thermostat switches encountered during the demolition must be removed and disposed of in accordance with applicable regulations.
- 3) Any lead plumbing, vents or pipes within the building must be separated from the building waste during demolition and disposed of properly in accordance with applicable regulations.
- 4) If any other hazardous materials such as left over paint cans, propane tanks, chemicals, batteries, etc. are found during demolition of the building, they must be removed and disposed of in accordance with applicable regulations.
- 5) If any leftover refrigeration equipment is encountered which may contain CFC's they must be removed and disposed of in accordance with applicable regulations.

3.3 CERTIFICATION

If any suspect asbestos containing materials are encountered within walls, above ceilings, under floors or in any inaccessible cavities during demolition or renovation activities, all work must stop immediately. It is the owners' responsibility to stop all work and contact **COAST BC HAZMAT INSPECTIONS** for further inspection on site.

Reviewed By:



Andrea Mullen CABIR-17-037

2020-03-10

Date

Inspector:



David Furtado CABIR-18-069

2020-03-10

Date

10 simple steps to complying with asbestos abatement

Many homes built up until 1990 used products containing asbestos. Before you begin renovations or start demolishing an older home, follow these guidelines below to ensure the safe detection and removal of asbestos.

- 1** A pre-1990 house/building is to be demolished or renovated.
- 2** The building owner (or owner's representative) or the employer (e.g., builder, demolition contractor) retains a qualified person (usually a consultant) to perform a risk assessment and asbestos survey before conducting work where asbestos may be disturbed.
- 3** The qualified person inspects the house/building, collects representative bulk samples, and has the samples analyzed by a qualified laboratory.
- 4** The qualified person prepares a report that identifies all inspection results (including drawings, plans, or specifications), risk assessment, and scope of work for the abatement of the asbestos.
- 5** The report containing the inspection results is provided to the owner/employer. The inspection results must be available at the worksite whenever workers are on site.
- 6** The owner or employer retains trained asbestos abatement workers. A notice of project (NOP) with written work procedures is submitted to WorkSafeBC before commencement of asbestos removal work.



- 7** Safe removal and disposal of identified asbestos occurs.
- 8** After the asbestos removal the owner or employer receives written confirmation that the asbestos specified for removal on the NOP has been removed. A copy of the inspection results is on site.
- 9** The owner authorizes demolition of the house/building to proceed. The demolition employer proceeds to demolish house using safe work procedures. Copies of inspection results and post-abatement reports are on site.
- 10** If any asbestos is found during demolition, all work is to cease until a risk assessment is done and the asbestos is safely contained or removed. In this case, go back to step 7.

Find additional industry resources at [worksafebc.com/safetyatwork](https://www.worksafebc.com/safetyatwork).

WORK SAFE BC