

## School District 85



### 84 MacRae Drive, Woss, BC Asbestos Management Inventory



**North West  
Environmental Group Ltd.**

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## 1 Introduction

North West Environmental Group Ltd. (NWest) was retained by School District 85 (the Client) to conduct an asbestos management inventory (AMI) at 84 MacRae Drive, Woss, BC (site). The non-destructive assessment was conducted by NWest representatives, Paddy Greig on August 21, 2020.

The purpose of this assessment is to provide information regarding the presence and condition of asbestos and suspect asbestos containing building materials in the building structure. This inventory assessment involved the identification of asbestos containing materials and a condition assessment in support of the building owner/manager's regular monitoring of asbestos containing material conditions so that materials in good condition may be safely managed in place until they are removed, and damaged materials can be repaired or otherwise addressed in a timely manner. Regular inspections of asbestos containing building materials are required to mitigate the potential for occupant and worker exposure. This report may be used for day to day building maintenance activities involving minor disturbance of materials.

This assessment supports compliance with the following provincial legislation:

- ) BC Workers Compensation Act – Part 2, Division 4 (General Duties of Employers, Workers and Others), Section 25 (General duties of owner).
- ) BC Occupational Health and Safety Regulation – Part 6.4 (Asbestos-General Requirements, Inventory).

This asbestos management inventory assessment does not replace the requirement for the owner to undertake a pre-renovation or pre-demolition project-specific hazardous materials assessment as required by the BC Occupational Health and Safety Regulation section 20.112.

Note: ongoing repairs, maintenance, and renovations may result in some changes to the building after this report was printed.

## 2 Scope of Work and Exclusions

All accessible areas of the facility were included in this assessment. Whenever practicable, representative building material samples were collected for asbestos analysis. See Appendix E for assessment methodologies.

This assessment was non-destructive (e.g., inspection holes to assess otherwise intact systems such as wall cavities were not made) and non-invasive (e.g., assessment of cupboards, closets, and similar personal spaces were not undertaken; ceiling tiles were not removed to assess above-ceiling materials). As such, concealed asbestos containing materials may be present.

Areas/systems not included in the assessment are summarised in the following table.

**Table 2-1. Assessment Exclusions**

Area/System	Rationale
Roof	Non-destructive assessment
Attic	Non-destructive assessment
Wall/ceiling cavities	Non-destructive assessment
Equipment/System	Outside assessment scope of work
Underground/buried equipment and systems	Outside assessment scope of work
Indoor air quality assessment	Outside assessment scope of work
Contents	Outside assessment scope of work

### 3 Regulatory Framework

The methods used for assessment, sample collection, and analysis were in accordance with applicable regulations and are acceptable to WorkSafeBC. See Appendix D for details on the applicable regulatory framework and additional standards that apply to this project.

### 4 Facility Description

The following is a summary of the building. Area calculations are approximate.

**Table 4-1. Building Summary**

Building System	Details
Construction date	1967
Number of floors/levels	1
Area	1,070
<b>Exterior Materials</b>	
Roofing	Asphalt shingles
Exterior	Wood siding and soffit
<b>Interior Materials</b>	
Ceiling	Acoustic ceiling tile and drywall
Walls	Drywall and laminate
Floors	Carpet and sheet flooring
Insulation	Not assessed (outside scope)
HVAC (system type and insulation type)	Forced air furnace

## 5 Asbestos Management Inventory and Recommendations

This section summarises the observations made, and the analytical results for any material samples collected during the site assessment. Photo plates are presented in Appendix A.

The following table summarizes the results of the inventory, condition assessment, and recommended management actions for known and suspect asbestos-containing materials (ACMs). The recommendations are derived by the friability, accessibility, and condition of the ACMs. See Appendix F for details. Quantities are estimated.

**Table 5-1. Asbestos-Containing Materials Summary**

Description	System	Locations	Status	Quantity	Accessibility	Friability	Condition	Mgmt Recommendation
Sheet flooring 1 – beige mosaic	Floor	Kitchen	Suspect	85 ft <sup>2</sup>	Access A – Accessible to all building users	Friable	Good	Action 5 – Proactive ACM removal / Action 7 – Routinely monitor condition Test prior to impact
Sheet flooring 1 – beige mosaic	Backsplash	Kitchen	Suspect	25 ft <sup>2</sup>	Access A – Accessible to all building users	Friable	Good	Action 5 – Proactive ACM removal / Action 7 – Routinely monitor condition Test prior to impact
Sheet flooring 2 – grey streaked	Floor	Bathroom	Suspect	20 ft <sup>2</sup>	Access A – Accessible to all building users	Friable	Good	Action 5 – Proactive ACM removal / Action 7 – Routinely monitor condition Test prior to impact
Sheet flooring 3 – off white 9”x9” pattern	Wall	Bathroom	Suspect	50 ft <sup>2</sup>	Access A – Accessible to all building users	Friable	Good	Action 5 – Proactive ACM removal / Action 7 – Routinely monitor condition Test prior to impact
Drywall with joint compound	Wall	Kitchen, Living Room, Laundry Room, Bathroom Bedroom 1, Bedroom 2	Suspect	1400 ft <sup>2</sup>	Access A – Accessible to all building users	Non friable	Good	Action 5 – Proactive ACM removal / Action 7 – Routinely monitor condition Test prior to impact
Drywall with joint compound	Ceiling	Bathroom	Suspect	35 ft <sup>2</sup>	Access A – Accessible to all building users	Non friable	Good	Action 5 – Proactive ACM removal / Action 7 – Routinely monitor condition Test prior to impact
Acoustic sink insulation – black	Sink	Kitchen	Suspect	1 sink	Access A – Accessible to all building users	Non friable	Good	Action 5 – Proactive ACM removal / Action 7 – Routinely monitor condition Test prior to impact

Note: asbestos-containing materials may be present in concealed or excluded locations and/or systems. See Section 2 of this report.



**Warning:** in the event any additional suspect materials are encountered during renovation/repair activities, work on those materials should stop immediately and remain undisturbed until testing confirms the presence or absence of asbestos or other hazardous material

Materials suspected to contain asbestos which are often concealed in buildings and require destructive assessment to evaluate may be present which include, but are not limited to:

- ) Electrical wiring and cables
- ) Buried asbestos cement pipes
- ) Formed cement products
- ) Bell and spigot piping gaskets
- ) Incandescent light fixtures (heat shields)
- ) Floor leveling compound
- ) Vermiculite in wall cavities including concrete block void spaces
- ) Penetration caulking and/or parging

A summary of materials known or presumed not to contain asbestos is presented as follows:

**Table 5-2. Non-Asbestos-Containing Materials**

Location(s)	Material Description	Sample Quantity	Comments
Kitchen, Living Room, Laundry Room, Bedroom 1, Bedroom 2	Acoustic ceiling tile 1 – donna cona 1’x1’ with pinholes	0	Wood fibre ceiling tile (not suspected to contain asbestos)

Materials assumed not to contain asbestos include:

- ) post-1990 construction materials with the exception of formed cement products, vermiculite, fire stop caulking, gaskets.
- ) wood and wood composite materials
- ) carpet
- ) plastics in non-industrial applications
- ) metals
- ) glazing
- ) exterior below-grade drainage and plumbing systems
- ) ceramic tile, excluding adhesives, grout, and thinset mortar

## 6 General Recommendations

Based on observations made and analytical results, NWest makes the following recommendations.

1. Ensure that the inventory is kept current with respect to presence and condition of asbestos-containing materials, and a record is kept of any changes made to the inventory.
2. Retain a current version of the inventory until all the asbestos-containing materials are removed from the Site.
3. Ensure that a copy of the current version of the inventory is readily available at the Site.
4. Ensure that all asbestos-containing materials present at the Site are identified by signs, labels or, when these are not practicable, other effective means.
5. A qualified person must undertake a pre-renovation/demolition project-specific hazardous materials assessment prior to planned work other than minor maintenance activities that impacts building materials or systems that conforms to the requirements of the BC Occupational Health and Safety Regulation section 20.112. A qualified person must complete a risk assessment and safe work procedures for all hazardous materials that may be impacted by maintenance and/or renovation work. Removal or disturbance of hazardous materials must be undertaken by a qualified contractor employing WorkSafeBC-approved procedures.
6. Maintenance work must STOP if previously unidentified suspected hazardous materials are encountered or inadvertently damaged or disturbed during maintenance activities. These suspect materials must be left undisturbed until a qualified person has determined the status of the material.
7. Damage to asbestos-containing materials must be repaired or otherwise rendered non-hazardous to unprotected workers and occupants without delay (e.g. enclose damaged materials with a dust barrier).

### Appendix A. Photo Plates

The following photo plates provide a general documentation of the building materials that were sampled and analyzed, and observations made during the assessment. They are meant to summarize the results of analysis and observations and are not intended to include all hazardous materials, or their locations, observed during the assessment.



Photo 1  
Description: Sheet flooring 1 – beige mosaic  
Location: Kitchen backsplash  
**Asbestos: Suspect**



Photo 2  
Description: Sheet flooring 2 – grey streaked  
Location: Bathroom  
**Asbestos: Suspect**



Photo 3  
Description: Sheet flooring 3 – off white 9"x9" pattern  
Location: Bathroom  
**Asbestos: Suspect**

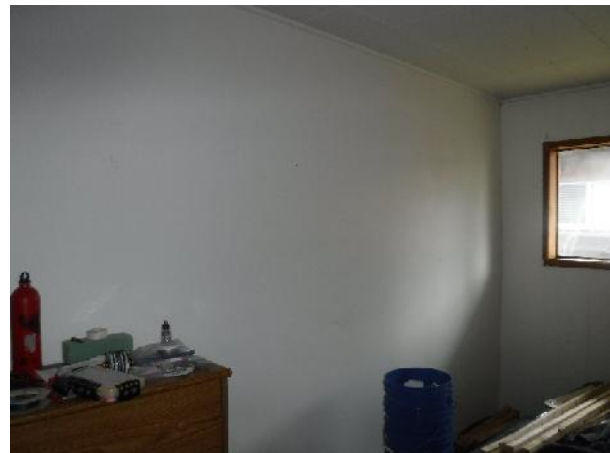


Photo 4  
Description: Drywall with joint compound  
Location: Bedroom 1  
**Asbestos: Suspect**



Photo 5

Description: Acoustic sink insulation – black

Location: Kitchen

**Asbestos:** **Suspect**

## Appendix B. Regulatory Framework

1. **Workers Compensation Act**, Part 2, Division 4 (General Duties of Employers, Workers and Others), Section 25 (General duties of owner).
2. **BC Occupational Health and Safety Regulation**, BC Reg. 296/97, including amendments.
3. **Safe Work Practices for Handling Asbestos**, WorkSafeBC, current edition.
4. **Hazardous Waste Regulation**, BC Ministry of Environment, including amendments.
5. **Transportation of Dangerous Goods Regulations SOR / 2008-34**, Transportation of Dangerous Goods Act, SOR/2008/34 including amendments.

## Appendix C. Methodology

The assessment adhered to applicable regulations and followed industry-accepted standards and methodologies.

**Note:** Not all of the following materials and/or methods were necessarily included in this assessment.

### Asbestos

An initial walk-through was conducted of the assessment areas for building materials and machinery or equipment to make a preliminary determination if asbestos could be present.

To confirm or discount the presence of asbestos, representative bulk samples were collected. The sample locations in the building are identified with a unique sample number. Whenever practicable, a representative number of material samples were collected as per WorkSafeBC guidance. Some materials could not be representatively sampled due to accessibility or if sample collection would damage the remaining material.

Bulk samples were submitted for analysis in accordance with the following method: EPA 600 R-93 / 116-1993. Samples consisting of greater than 0.5% asbestos were reported as an asbestos-containing material as per WorkSafeBC. See Appendix G for details on how asbestos-containing materials are evaluated to determine management actions.

Vermiculite samples were submitted for analysis in accordance with the Research Method for Sampling and Analysis of Fibrous Amphibole in Vermiculite Attic Insulation (EPA/600/R-04/004, January 2004, US EPA.) Samples of loose fill vermiculite insulation found to contain any trace of asbestos were reported as

## Appendix D. Evaluation of Asbestos-Containing Materials

Evaluation of asbestos-containing materials (ACMs) is based on the condition of the material, its accessibility, and its friability. The following are guidelines used to evaluate ACMs and the action, if any, required to safely manage them.

### Spray Applied Fireproofing, Insulation and Texture Finishes

In evaluating the condition of ACM spray applied as fireproofing, thermal insulation or texture, decorative or acoustic finishes, the following criteria apply.

<b>GOOD</b>	Surface of material shows no significant signs of damage, deterioration or delamination. Up to one percent visible damage to surface is allowed within range of GOOD. Evaluation of sprayed fireproofing requires the assessor to be familiar with the irregular surface texture typical of sprayed asbestos products. GOOD condition includes un-encapsulated or unpainted fireproofing or texture finishes, where no delamination or damage is observed, and encapsulated fireproofing or texture finishes where the encapsulation has been applied after the damage or fallout occurred.
<b>POOR</b>	Sprayed materials show signs of damage, delamination or deterioration. More than one percent damage to surface of ACM spray.
<b>DEBRIS</b>	Spray materials are dislodged from surface application source. The identified debris is noted as being separated from the original source.

### Mechanical Insulation

In evaluating the condition of mechanical insulation (on boilers, breeching, ductwork, piping, tanks, equipment etc.) the following criteria are used.

<b>GOOD</b>	Insulation is completely covered in jacketing and exhibits no evidence of damage or deterioration. No insulation is exposed. Includes conditions where the jacketing has minor surface damage (i.e., scuffs or stains), but the jacketing is not penetrated.
<b>FAIR</b>	Minor penetration damage to jacketed insulation (cuts, tears, nicks, deterioration or delamination) or undamaged insulation that has never been jacketed. Insulation is exposed but not showing surface disintegration. The extent of missing insulation should be minor to none.
<b>POOR</b>	Original insulation jacket is missing, damaged, deteriorated or delaminated. Insulation is exposed and significant areas have been dislodged. Damage cannot be readily repaired.
<b>DEBRIS</b>	Insulation materials are dislodged from surface application source. The identified debris is noted as being separated from the original source.

### Non-Friable and Potentially Friable Materials

Non-friable materials generally have little potential to release airborne fibres, even when damaged by mechanical breakage. However, some non-friable materials, i.e., exterior asbestos concrete products, may have deteriorated so that the binder no longer effectively contains the asbestos fibres. In such cases of significantly deteriorated non-friable material, the material will be treated as a friable product.

### Accessibility

The accessibility of building materials known or suspect of being ACM is rated according to the following criteria.

<b>Access (A)</b>	Areas of the building within reach (from floor level) of all building users. Includes areas such as gymnasiums, workshops, and storage areas where activities of the building users may result in disturbance of ACM not normally within reach from floor level.
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<b>Access (B)</b>	Frequently entered maintenance areas within reach of maintenance staff, without need for a ladder. Includes: frequently entered pipe chases, tunnels and service areas or areas within reach from a fixed ladder or catwalk (e.g., tops of equipment, mezzanines).
<b>Access (C) Exposed</b>	Areas of the building above 2.5 metres where use of a ladder is required to reach the ACM. Only refers to ACM materials that are exposed to view, from the floor or ladder, without removing or opening other building components such as ceiling tiles, or service access doors or hatches. Does not include infrequently accessed service areas of the building.
<b>Access (C) Concealed</b>	Areas of the building which require removal of a building component including lay-in ceilings and access panels into solid ceiling systems. Includes rarely entered crawlspaces, attic spaces etc. Observations are limited to the extent visible from the access points.
<b>Access (D)</b>	Areas of the building behind inaccessible solid ceiling systems, walls, or mechanical equipment, etc., where demolition of the ceiling, wall or equipment etc., is required to reach the ACM. Evaluation of condition and extent of ACM is limited or impossible, depending on the assessor's ability to visually examine the materials in Access D.
<b>ACM in Plenum</b>	Areas of the building where air movement through open or closed air spaces or plenums can be accesses by Access X, where X is any of the Accesses A-D, inclusive.

### Action Matrix

The following Action Matrix determines what, if any, action is required to safely manage ACMs.

Access	Condition			
	Good	Fair	Poor	Debris
(A)	Action 5/7	Action 5/6	Action 3	Action 1
(B)	Action 7	Action 6/5	Action 3	Action 1
(C) Exposed	Action 7	Action 6	Action 4	Action 2
(C) Concealed	Action 7	Action 7	Action 4	Action 2
(D)	Action 7	Action 7	Action 7	Action 7
(X)	Action 5/7	Action 5/6	Action 3	Action 1

### Action Table

The following is a description of the action required to manage ACMs, based on the outcome of the evaluation.

<b>Action 1</b>	<b>Immediate Clean Up of Debris That is Likely to be Disturbed</b> Restrict access/shut off air handling system if disturbance of the ACM DEBRIS is likely, and clean up ACM DEBRIS immediately. Utilize proper asbestos procedures. This action is required for compliance with regulatory requirements.
<b>Action 2</b>	<b>Entry into Areas with ACM Debris</b> At locations where ACM DEBRIS can be isolated in lieu of removal or clean up, use appropriate means to limit entry to the area. Restrict access to the area to persons utilizing moderate risk asbestos-work precautions. The precautions will be required until the ACM DEBRIS has been cleaned up, and the source of the DEBRIS has been stabilized or removed.
<b>Action 3</b>	<b>ACM Removal Required for Compliance</b> Remove ACM for compliance with regulatory requirements. Utilize asbestos procedures appropriate to the scope of the removal work.
<b>Action 4</b>	<b>Access into Areas Where ACM is Present and Likely to be Disturbed by Access</b> Use asbestos precautions when entry or access into an area is likely to disturb the ACM. ACTION 4 must be used until the ACM is removed (Use ACTION 1 or 2 if DEBRIS is present).
<b>Action 5</b>	<b>Proactive ACM Removal</b>

	Remove ACM in lieu of repair, or at locations where the presence of asbestos in GOOD condition is not desirable.
<b>Action 6</b>	<b>ACM Repair</b> Repair ACM found in FAIR condition, and not likely to be damaged again or disturbed by normal use of the area or room. Upon completion of the repair work, treat ACM as material in GOOD condition and implement ACTION 7. If ACM is likely to be damaged or disturbed during normal use of the area or room, implement ACTION 5.
<b>Action 7</b>	<b>Routine Surveillance</b> Institute routine surveillance of the ACM. Trained workers or contractors must use appropriate asbestos precaution during disturbance of the remaining ACM.

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