

Hazardous Building Materials Survey Draft Report

Chignecto-Central Adult High School (CCAHS Elmsdale),
224 Highway 214, Elmsdale, NS



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Prepared for:



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EXECUTIVE SUMMARY

CBCL Limited completed a Hazardous Building Materials Survey (Hazmat) of the Chignecto Central Adult High School (CCAHS) located at 224 Highway 214 in Elmsdale, NS in December 2018. It is our understanding that the work has been completed in support of proposed demolition and/or renovations of the building.

The subject building is used as office spaces, a community centre and learning facility. In past years, the subject building operated as a school. The building was partially occupied at the time of the site visit.

At the time of the site visit, the building interior was noted to be in good overall condition. The building has been well maintained keeping most exposed building materials intact. Building materials including drywall, flooring materials and ceiling tiles were generally in good overall condition. Deteriorated ACM piping insulation was observed within most ceiling cavities throughout the building. Where observed, this pipe insulation was noted to be in fair to poor condition.

The findings of the CCAHS Hazmat are presented in the following table. Quantities presented are approximate and inferred based on observations made in accessible spaces during the site visit. Additional hazardous materials may be present in concealed locations:

Table E.1: Summary of Hazardous Building Materials

<i>Hazardous Material</i>	<i>Summary of Findings</i>
Asbestos	<p>Laboratory results indicate that asbestos is present in concentrations >0.5% asbestos by weight in the following subject building materials;</p> <ul style="list-style-type: none">• Approximately 275 m² of texture coating materials identified as ACM were noted in the subject building (samples AS-12, AS-15 and AS-20). It should be noted that based on sampling results, all texture coating material should be treated as an asbestos containing material (ACM);• Approximately 170 linear meters of asbestos containing straight run pipe insulation was noted throughout the building (Samples AS-11, AS-24 and AS-27). It should be noted that, solid ceilings limited visual assessment in multiple rooms throughout the building. It is suspected that additional ACM insulation materials may be concealed behind solid ceilings and wall cavities;• Approximately 110 pipe elbows with grey parging cement identified as an ACM (Samples AS-08, AS-09 and AS-26) were noted in the subject building. All pipe elbows that are not fiberglass should be assumed to be asbestos containing. It is suspected that additional ACM insulation materials may be concealed behind solid ceilings and wall cavities;• Room 130 was identified as having ACM flooring. Tan vinyl sheet flooring covering older vinyl floor tile materials were both identified to

<i>Hazardous Material</i>	<i>Summary of Findings</i>
	<p>be asbestos containing. Approximately 25 m² of vinyl flooring materials were identified in Room 130 (samples AS-13 and AS-14);</p> <ul style="list-style-type: none"> Room 107 was identified as having ACM flooring. Tan vinyl floor tile materials were identified to be asbestos containing. Approximately 22.5 m² of vinyl flooring materials were identified in Room 107 (sample AS-36); The bathroom located in Room 105 was identified to have an ACM lighting heat shield within (Sample AS-34). Any units similar to this with heat shields should also be considered asbestos containing; Window caulking identified as an ACM was noted on the interior of the Men's Washroom window (sample AS-19); Cementitious material (transite) identified as containing asbestos was observed on the interior and exterior of the building (Sample EXT-AS-01). One panel was observed within the south-wing Hallway ceiling cavity. Caution should be taken in case transite material is present in any concealed locations. Approximately 2-5 m² was observed in the building interior ceiling cavity. Transite panels were also observed on the building exterior between windows and as soffits above some doors. Approximately 12-15 m² was observed on the building exterior. Expansion joint material identified as containing asbestos was observed on the interior and exterior of the building (Sample AS-28 and EXT-AS-03). Room 110 has approximately 8 linear meters of compound between brick and structural steel within the room. Any other areas found to have the same material between two building components should be considered as an ACM. Expansion joint compound was also observed and collected from the between a seam on the brick wall of the building exterior. The material was also found to contain asbestos; and, Exterior caulking was collected from the building and found to contain asbestos (Sample EXT-AS-06). The material was collected from the seam between a door frame and brick wall. Any caulking materials found on the building exterior matching the description of the above noted sample should be considered as asbestos containing.
Metal Containing Paints and Coatings	Laboratory analytical results indicate that none of the collected paint samples were identified as lead, mercury or arsenic containing paints.
Vermiculite	No evidence of vermiculite was noted to be present.
Other Mercury-Containing Materials (excluding paint)	<p>Building materials were visually assessed for the presence of mercury.</p> <ul style="list-style-type: none"> Four foot linear fluorescent lamps, which contain mercury vapour, were observed throughout lighting fixtures within the subject building; Older style thermostats known to contain mercury vials were observed in various rooms throughout the building.
Other Lead-Containing Materials (excluding paint)	The building was visually assessed for other lead containing materials.

<i>Hazardous Material</i>	<i>Summary of Findings</i>
	<ul style="list-style-type: none"> • Bell house fittings associated with drainage pipes, which have been assumed to have lead caulking, were observed in the subject building; and, • Lead piping or metal pipes with leaded joints or solder appeared to have been removed by vandals from the subject building. However, concealed piping with leaded joints or solder were visible within ceiling cavities in the building and may be also present within wall cavities.
PCBs	<p>The building was visually assessed for the presence of electrical equipment that could contain PCBs.</p> <ul style="list-style-type: none"> • Approximately 200 fluorescent light fixtures were observed in the subject building. Approximately 10% of the lighting ballasts were visually checked for the presence of PCB containing ballasts. All of the inspected ballasts were noted to be non-pcb containing.
Mould	<p>Areas within the subject building were visually assessed for signs of apparent fungal (mould) growth.</p> <ul style="list-style-type: none"> • Areas of mould growth were not observed throughout the subject building.
Halocarbons	<p>The subject area was visually assessed for the presence of refrigeration units and fire suppression equipment that could contain halocarbons.</p> <ul style="list-style-type: none"> • One (1) refrigerator unit and refrigerators suspected to contain halocarbons was noted in the subject building at the time of the Survey. • Multiple air conditioning units suspected to contain halocarbons were noted in various rooms of the subject building at the time of the Survey.
UFFI	No suspected UFFI or indications of UFFI application were observed during the Survey.
Radioactive Materials	Smoke/heat detectors, which have the potential of containing a small amount of radioactive material, were observed in the subject building.
Silica	The building has a concrete slab foundation and concrete block walls. If these materials are cut or broken up during demolition activities, silica dust could be generated.

CHAPTER 1 **INTRODUCTION**

CBCL Limited (CBCL) was engaged by the Municipality of East Hants to complete a Hazardous Building Materials (Hazmat) Survey of the CCAHS building located at 224 Highway 214, Elmsdale, NS. The purpose of the Hazmat Survey was to identify hazardous building materials present in the building and to provide information regarding appropriate methodologies for handling and disposing of these materials prior to the proposed building renovation and/or demolition activities.

The following report presents the findings related to the Hazmat Survey of the building located on site.

1.1 Building Description

The subject building was previously used as an educational and community outreach facility. In more recent years, the subject building formerly operated mainly as municipal office spaces and as a community centre.

The subject building is a one storey building and consists of two wings with two main hallways and rooms/offices branching from each hallway. It is anticipated that the building was constructed in the 1970s.

The interior walls within the building are constructed of concrete block, wood, steel and/or poured concrete. The majority of the exterior walls are constructed of brick over wood and/or concrete with vinyl siding in some locations. The roof of the CCAHS building was excluded from the assessment. It was indicated to CBCL personnel that the roof had been replaced in recent years and that roof sampling was not necessary

The floor of the building appears to be a concrete slab on grade. The building is constructed with open web steel joists, concrete block, brick, wood and poured concrete. The interior floor finishes throughout the building consists of vinyl floor tiles, vinyl sheet flooring and concrete. The interior wall finishes throughout the building are a mix of painted concrete and drywall, brick and concrete block. Generally the ceiling was finished with suspended ceiling tiles. The exterior façade of the building consists mainly of brick and some areas of vinyl siding with wood beneath.

At the time of the site visit, the building interior was noted to be in good overall condition. The building appears to have been well maintained keeping most exposed building materials intact. Building materials including drywall, flooring materials and ceiling tiles were generally in good overall condition. Deteriorated ACM piping insulation was observed within most ceiling cavities throughout the building. Where observed, this pipe insulation was noted to be in fair to poor condition.

1.2 Scope of Work

CBCL's scope of work for the Hazmat Survey included the following:

- Completion of a site survey, including the identification and sampling of materials identified as potentially regulated in the subject building. The site survey included:
 - Completion of sampling of suspected hazardous materials during the site visit and submission of samples to an appropriately accredited laboratory for analysis;
 - Implementation of appropriate measures during, and at the end of each shift to facilitate the health and safety of workers, occupants, etc.;
 - Clean up of any debris generated during the sampling procedures if it was required;
 - Completion of temporary repairs of materials damaged during sampling, where necessary, to minimize exposure of hazardous materials to the building occupants (construction workers / building occupants);
- Preparation and submission of a draft and a final report. The report will include:
 - Findings of the site visit including sampled materials and laboratory results;
 - Provision of site-specific professional advice and recommendations for the identified Hazmats with respect to Hazmats present, their estimated quantities, extent and condition;
 - Provision of layout drawings showing sample locations and analytical results.

During the HAZMAT survey, CBCL completed non-intrusive investigations in select locations (e.g., wall and ceiling cavities) of the building to gain an understanding of building construction and to assess for potential hazardous materials in concealed locations. We conducted non-intrusive investigations in select locations based on our professional judgment and assessment methodology.

It should be noted that assessment/sampling of the roofing system was not included in the current scope of work based on reported renovation of the roofing system in recent years. It is recommended that roofing materials be sampled and analyzed for asbestos prior to disturbing these materials.

CHAPTER 2 **METHODOLOGY**

During the Hazmat Survey, CBCL personnel carried out a visual assessment of readily accessible areas of the subject building. The general conditions were noted and photographed. Samples of select building materials were collected from representative locations and materials. Samples of suspected hazardous materials were collected where appropriate and submitted for laboratory analysis.

2.1 Reference Documentation and Legislative Review

A reference list of the applicable guidelines, regulations and other documentation that were used to evaluate the results and make recommendations with regard to this assessment can be found in Appendix E of this report. Federal and Provincial acts, regulations and guidelines for the handling, storage, or disposal of hazardous building materials, such as the federal Canada Labour Code, Part II, Canada Occupational Health and Safety Regulation, Part X – Hazardous Substances and the provincial *Occupational Health and Safety Act*, were reviewed for applicability to determine the requirements for hazardous materials found at the subject building.

2.2 Site Visit

The Hazmat Survey was completed on December 17 and 18, 2018 by CBCL personnel. The building was assessed for the presence of potential hazardous building materials as well as non-hazardous building materials. The sampling program included the collection of representative samples of suspected asbestos containing materials (ACMs) and suspected metal-containing paints. The building was also assessed for the presence of vermiculite, lead and mercury (in materials other than paint), polychlorinated biphenyls (PCBs), halocarbons and other hazardous substances such as urea formaldehyde foam insulation (UFFI), radioactive materials, mould and silica. The type of material, its general condition and location were noted during the Survey. In addition, photographs of sampled materials were taken.

2.2.1 Hazardous Building Materials

The following hazardous building materials were assessed during the Survey.

2.2.1.1 ASBESTOS-CONTAINING MATERIALS

Representative samples of potential ACMs in the subject building were collected. Samples were collected by hand or using appropriate tools and were then placed in sealed plastic bags for transport to the laboratory. Each sampling location was sprayed with water prior to disturbing the material to reduce the release of dust particulate into the air, if required. Figures showing asbestos sample locations are presented in Appendix A.

2.2.1.2 PAINT

Representative paint samples were collected from the subject building. Paint samples were collected by removing a representative area of paint, including older paint layers when present and substrate where possible. The samples were then placed in sealed plastic bags for transport to the laboratory. Sample collection was conducted in accordance with the ASTM E1729 Standard Practice for Field Collection of Dried Paint Samples for Subsequent Lead Determination. Figures showing paint sample locations are presented in Appendix A.

2.2.1.3 VERMICULITE

The building was visually assessed for apparent vermiculite and potential areas were identified and noted, if present.

2.2.1.4 MERCURY

Thermostats, switches and fluorescent light bulbs that could potentially contain mercury, were noted in accessible areas, where present.

2.2.1.5 LEAD

Suspected lead piping or metal pipes with leaded joints or solder were noted in the accessible areas of the subject building, if present. Emergency lighting with the potential for lead-acid batteries were additionally noted.

2.2.1.6 PCBs

Fluorescent light ballasts and transformers with potential PCBs were visually identified and quantified throughout the subject building, if present.

2.2.1.7 MOULD

Areas of suspected mould growth and water damage were noted during the Survey, if present.

2.2.1.8 HALOCARBONS

A visual assessment was conducted for refrigerators, coolers, HVAC units and any other items that could contain halocarbons within the subject building.

2.2.1.9 UREA-FORMALDEHYDE FOAM INSULATION (UFFI)

A visual assessment was conducted for the presence of UFFI insulation in the subject areas. No sampling was conducted to verify the presence of UFFI.

2.2.1.10 RADIOACTIVE MATERIALS

A visual assessment was conducted for the presence of radioactive materials in the subject building, including smoke detectors. Radon testing was not conducted as part of this Survey.

2.2.1.11 SILICA

Areas containing cement products that would be subject to cutting or disturbance during any future demolition activities were noted.

2.2.2 Laboratory Analysis

2.2.2.1 ASBESTOS SAMPLES

Asbestos containing materials (ACMs) are classified as either friable or non-friable ACMs. Friable samples (can be readily reduced to dust or powder by hand pressure) were analyzed by Polarized Light Microscopy (PLM) and non-friable organically bound (NOB) samples (i.e., vinyl floor tile) were analyzed by PLM NOB or Transmission Electron Microscopy (TEM). Bulk samples collected for asbestos analyses were sent to EMSL Canada Inc. in Mississauga, ON, Canada. EMSL Canada Inc. is certified under the National Voluntary Laboratory Accreditation Program (NVLAP) for Polarized Light Microscopy (PLM) and PLM non-friable Organically Bound (NOB) for the analysis of bulk samples of asbestos. PLM NOB analysis was conducted for the non-friable, organically bound samples. Results of the analytical testing are presented in Chapter 3 and Table 1, Appendix B.

2.2.2.2 PAINT SAMPLES

Paint samples were sent to Maxxam Analytics laboratory (Maxxam) in Bedford, Nova Scotia and were submitted for analysis of lead, (available and leachable where applicable). Maxxam is accredited by the Standards Council of Canada (SCC) and the Canadian Association for Laboratory Accreditation (CALA). Results of the analytical testing are presented in Table 2 attached.

CHAPTER 3 FINDINGS & RECOMMENDATIONS

The findings of the Hazmat Survey of the CCAHS building are presented below. Sample locations are shown on Figures in Appendix A. A summary of the findings, including analytical results and estimated quantity and condition of the confirmed hazardous materials are presented in Tables 1 (Asbestos) and 2 (Metal-Containing Paints and Coatings), Appendix B. Quantities of hazardous materials presented below and in Tables 1 and 2 are estimates only. Estimated quantities are based on observations in readily visible areas and should be verified as necessary prior to bidding/commencing abatement activities. Additional hazardous materials may be present in concealed locations in the building. Table 3, Appendix B, presents locations of identified hazardous materials and recommendations for management of these materials. Laboratory certificates are presented in Appendix C. Select site photographs are presented in Appendix D.

While general information on disposal options is provided, it is recommended that facility operators be contacted prior to the transportation of any hazardous waste to confirm acceptability of the material.

3.1 Asbestos

3.1.1 Asbestos-Containing Materials (ACM)

The Hazmat Survey included a review of suspected friable and non-friable ACMs. ACMs are defined in Nova Scotia as materials containing asbestos fibres or asbestos dust in a concentration greater than or equal to 0.5% asbestos by weight. The term friable is applied to a material that can be readily reduced to dust or powder by hand pressure. ACMs that are friable have a much greater potential to release airborne asbestos fibers when disturbed. Provincial regulations regarding ACMs distinguish between friable and non-friable when assigning appropriate work practices. Where friable materials are identified containing asbestos in any concentration, there is the possibility of the release of asbestos fibres posing an occupational health and safety concern or environmental exposure; as such, appropriate occupational health and safety precautions must be implemented. Non-friable materials with concentrations of asbestos that are less than 0.5% are not considered to be ACMs.

The Nova Scotia Asbestos Waste Management Regulations govern the handling, storage and disposal of ACMs. This regulation is under the authority of the *Environment Act* and is administered by Nova Scotia Environment (NSE).

The Nova Scotia Department of Labour and Advanced Education has developed guidelines and codes of practice, pursuant to the *Occupational Health and Safety Act*, for the assessment, management, maintenance, handling and removal of ACMs. The following guidelines and codes of practices are relevant:

- Asbestos in the Workplace: A Guide to Assessment & Management of Asbestos in the Workplace
- Asbestos in the Workplace: A Guide to Removal of Friable Asbestos Containing Material

3.1.2 Summary of Asbestos Sample Results

A total of 47 samples (4 with two layers), of potential ACMs were collected and submitted for laboratory analysis. These materials included vinyl floor tile, vinyl sheet flooring, piping and mechanical insulation, expansion joint materials, drywall joint compound, mastic, texture coating, acoustic ceiling tiles, caulking and putty material.

3.1.3 Findings

Laboratory results by PLM and PLM (NOB) analysis indicate that asbestos is present in twenty (20) samples with concentrations greater than 0.5% asbestos by weight. Identified ACMs include pipe insulation, plaster, vinyl flooring, expansion joint compound and window putty.

The following asbestos containing materials, including estimated quantities, were identified by the HAZMAT Survey:

- Approximately 275 m² of texture coating materials identified as ACM were noted in the subject building (samples AS-12, AS-15 and AS-20). It should be noted that based on sampling results, all texture coating material should be treated as an ACM;
- Approximately 170 linear meters of asbestos containing straight run pipe insulation was noted throughout the building (Samples AS-11, AS-24 and AS-27). It should be noted that, solid walls and ceilings limited observation of pipe insulation in multiple rooms throughout the building during the assessment. Additional asbestos containing pipe insulation may be present in concealed locations in the subject building;
- Approximately 110 pipe elbows with grey parging cement identified as ACM (Samples AS-08, AS-09 and AS-26) associated with piping were noted in the subject building, all pipe elbows that are not fiberglass should be assumed asbestos containing. It should be noted that, solid walls and ceilings limited observation of pipe insulation in multiple rooms throughout the building during the assessment. Additional asbestos containing pipe insulation may be present in concealed locations in the subject building;
- Room 130 was identified as having ACM flooring. Tan vinyl sheet flooring covering older vinyl floor tile materials were both identified to be asbestos containing. Approximately 25 m² of vinyl flooring materials were identified in Room 130 (samples AS-13 and AS-14);
- Room 107 was identified as having ACM flooring. Tan vinyl floor tile materials were identified to be asbestos containing. Approximately 22.5 m² of vinyl flooring materials were identified in Room 107 (sample AS-36);
- The bathroom located in Room 105 was identified to have an ACM lighting heat shield within (Sample AS-34). Any units similar to this with heat shields should also be considered asbestos containing;

- Window caulking identified as an ACM was noted on the interior of the Men's Washroom window (sample AS-19);
- Cementitious material (transite) identified as containing asbestos was observed on the interior and exterior of the building (Sample EXT-AS-01). One panel was observed within the south-wing Hallway ceiling cavity. All transite material in the subject building should be managed as an ACM. Approximately 2-5 m² was observed in the building interior ceiling cavity. Transite panels were also observed on the building exterior between windows and above doors. Approximately 12-15 m² was observed on the building exterior;
- Expansion joint material identified as asbestos containing was observed on the interior and exterior of the building (Sample AS-28 and EXT-AS-03). Room 110 has approximately 8 linear meters of compound between brick and structural steel within the room. Any other areas found to have the same material between two building components should be considered as an ACM. Expansion joint compound was also observed and collected from the between a seam on the brick wall of the building exterior. The material was also found to contain asbestos; and,
- Exterior caulking was collected from the building and found to contain asbestos (Sample EXT-AS-06). The material was collected from the seam between a door frame and brick wall. Any caulking materials found on the building exterior matching the description of the above noted sample should be considered as asbestos containing.

Congested ceiling spaces and concealed ceiling and wall cavities limited visual assessment for asbestos containing materials in these spaces. Additional ACMs may be present in these spaces.

CBCL's asbestos Survey findings are summarized on Figures 1 and 2, Appendix A and in Table 1, Appendix B. Laboratory certificates are located in Appendix C.

3.1.4 Recommendations

Identified ACMs as well as materials that are visually similar to the identified ACMs should be managed as asbestos containing materials. Asbestos containing materials in deteriorated condition (including associated dust and debris) or those to be affected by proposed renovation or demolition activities should be appropriately repaired or removed by a qualified contractor using appropriate precautions to reduce the potential for the release of airborne asbestos fibres. The specific level of precautions (Type 1, Type 2, or Type 3) to be implemented depends on the type of ACM (friable/non-friable), the quantity of material and the repair/removal method. General extents and recommendations for handling and removal of asbestos containing materials are presented in Table 3, Appendix B.

The general overall condition of piping insulation observed throughout the building interior was fair to poor (i.e., unwrapped, deteriorating, debris). Access into ceiling cavities should be limited until removal or remediation of the ACM piping insulations has been completed due to loose debris and deteriorating insulations being noted in several spaces.

Transite panel was observed in one location within the south wing hallway. It is suspected that transite panels could be present in inaccessible wall and ceiling cavities throughout the building. All transite panels should be considered as asbestos containing materials.

A lighting heat shield was observed within the bathroom of Room 105. This heat shield was found to contain 45% Chrysotile asbestos. Any other units visually similar to this lighting heat shield (Photo 15, Photo Log) should be considered an asbestos containing material.

Contractors must implement appropriate health and safety precautions that meet all applicable legislation when working with materials that contain asbestos (at any concentration). These precautions will include donning appropriate personal protective equipment (PPE) and the use of appropriate health and safety measures suitable to mitigate exposure to asbestos. Following removal, asbestos containing materials must be appropriately packaged, transported and disposed of at an approved facility with prior approval from the facility operator.

3.2 Metal Containing Paint and Coatings (MCP/C)

The following sections discuss referenced guidelines for evaluating metal containing paints and coatings.

It should be noted that, in general, if metal containing paint is well adhered to a metal substrate, it can be sent together with the substrate, for metal recycling, rather than for disposal at the time of removal, with prior approval from the facility operator.

3.2.1 Lead

Lead was commonly used in paints for its association with pigments, drying agents and corrosion inhibitors. Areas of deteriorated surface coating exhibiting flaking or peeling have the potential to release lead dust or lead flakes which can be inhaled or ingested by occupants resulting in adverse health effects.

It should be noted that definitions of lead based surface coatings vary in Canada. In 2010, the Surface Coatings Materials Regulation (SOR/2005-109) made under the Canadian *Hazardous Products Act (HPA)* imposed restrictions on paints that have a concentration above 90 mg/kg of lead by weight with several exceptions noted (e.g., anti-corrosive or anti-weathering coatings, touch up coatings for metal surfaces, traffic signs, etc.). This does not specifically address surface coatings on existing surfaces.

It is possible that any concentration of lead in a surface coating can be hazardous depending on the methods used to remove it. As such it is important that precautions and PPE be utilized that are appropriate for the method of disturbance (e.g., scraping versus grinding). The American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV) for worker exposure to lead (expressed as a time-weighted average), is 0.05 mg/m³. This is considered to be the concentration of a substance to which most workers can be exposed without adverse effects.

Nova Scotia Environment's Landfill Disposal Guideline for lead is 1,000 mg/kg (ppm). Painted materials with a lead concentration of less than 1,000 mg/kg may be disposed of as C&D waste at an approved disposal site. If the paint has a lead concentration greater than 1,000 mg/kg, leachate analysis must be performed. If the lead leachate concentration is greater than 5 mg/L, the paint must be disposed of at a licensed hazardous waste disposal facility. As there are no hazardous waste disposal facilities in Nova

Scotia, these materials would have to be shipped out of province for disposal. If the lead leachate concentration is below 5 mg/L the paint can be disposed of at an approved disposal site in Nova Scotia.

The Nova Scotia Department of Environment and Labour have two guidance documents for working with lead. They are titled “*Working with Inorganic Lead – An Information Package*” and “*Code of Practice: Working with Inorganic Lead*”. The Code of Practice applies to any material containing greater than 0.1% (1,000 mg/kg) of lead, and discusses specific workplace requirements, including the necessity of conducting an assessment to determine if “an employee is likely to inhale, ingest or absorb lead to such an extent that the health of the employee may be adversely affected.” If the assessment determines that there is the likelihood, the employer must develop a Lead Control Program that outlines air sampling, health monitoring, PPE and personal hygiene related to working with lead.

3.2.2 Findings

Four (4) paint/coating samples were collected and submitted for laboratory analysis of acid extractable (available) lead. Laboratory analytical results indicate that no collected samples were identified as lead containing paints.

CBCL’s Survey findings are summarized as follows:

Painted surfaces within the subject building were largely similar in colour and were found to be in good overall condition (i.e., well adhered to its substrate). None of the sampled paint materials were found to exceed the referenced guidelines for lead content in paint.

CBCL’s Survey findings for lead containing paints/coatings are summarized on Figure 2, Appendix A and in Table 2, Appendix B. Laboratory certificates are located in Appendix C.

3.2.3 Recommendations

Appropriate precautions, such as outlined in the *Ontario Lead on Construction Projects* guideline, Type I precautions, must be implemented when managing metal containing paints. When removing metal containing paint, a hazard evaluation must be conducted to determine if the removal method could expose the workers to paint with elevated metals or dust. Workers must implement health and safety precautions that result from the hazard evaluation and that meet all appropriate legislation. Depending on the removal method, these precautions may include donning appropriate personal protective equipment (PPE) and use of appropriate health and safety measures suitable to mitigate exposure to these hazardous materials. General extents and recommendations for handling and removal of lead containing paints/coatings are presented in Table 3, Appendix B.

Sampled paint materials found to contain concentrations of lead below the regulatory disposal guidelines can be disposed of at a NS landfill disposal facility, with prior approval from the operator.

3.3 Vermiculite

Vermiculite may be present within concealed locations in a building such as within concrete block walls and in attic spaces. No vermiculite was observed during the Survey. Non-intrusive investigations of the exterior walls did not reveal any evidence of vermiculite.

3.4 Other Mercury Containing Materials

Potential sources of mercury (other than paint) that may exist within the subject building include fluorescent light bulbs and older style thermostats.

- Four foot linear fluorescent lamps, which contain mercury vapour, were observed throughout lighting fixtures within the subject building. Spare lamps were also observed in storage boxes in various rooms in the building; and,
- Older style thermostats which contain liquid mercury vials were observed throughout the building.

Management and disposal of equipment containing mercury must be completed in accordance with applicable provincial and federal guidelines. At the time of removal, bulbs containing mercury vapour must be removed and disposed of intact (unbroken) at an approved recycling or disposal facility.

3.5 Other Lead Containing Materials

Potential sources of lead at the subject building (other than paint/coatings) include emergency and exit lighting, pipe caulking and pipe solder.

- Bell house fittings associated with drainage pipes were observed in the subject building. Bell house fittings typically have lead caulking associated with the fitting; and,
- Lead piping or metal pipes with leaded joints or solder were observed in the subject building at the time of the Survey. Concealed piping with leaded joints or solder are also present.

Disposal of materials containing lead must be completed in accordance with applicable provincial and federal guidelines. When removed, lead containing materials must be managed by a qualified contractor and recycled/disposed of at an approved facility. Lead piping, pipe with lead solder and lead caulking associated with bell house fittings can be removed together with the pipe/fitting and sent for metal recycling at the time of removal.

3.6 Polychlorinated Biphenyls (PCBs)

PCBs are regulated by Environment Canada under the PCB Regulations. PCBs are also regulated by the province of Nova Scotia under the PCB Management Regulations which is part of the NSEA.

The building was visually assessed for the presence of electrical equipment that could contain PCBs.

Fluorescent light fixtures were observed and inspected in the subject building. Approximately 10% of the lighting ballasts were visually checked for the presence of PCB containing ballasts. All inspected ballasts were non-PCB containing.

All light ballasts must be checked for PCBs prior to removal and disposal. The manufacturer's code should be compared to Environment Canada's document entitled "Identification of Lamp Ballasts Containing PCBs" (EPS2/CC/2 August 1991) for PCB identification. In situations that a label is not legible, it must be assumed to contain PCBs and disposed of appropriately.

All PCB-containing materials must be removed in accordance with the provincial PCB Management Regulations and the federal PCB Regulations. Nova Scotia landfills do not accept PCB-containing materials. PCB-containing materials must be disposed of at an approved hazardous waste disposal facility (none currently present in Nova Scotia).

3.7 Mould

Areas within the subject building were visually assessed for signs of apparent fungal (mould) growth.

Water damaged building materials were not observed throughout the subject building, however previously leaking and repaired pipes were observed in various locations through the subject building. Evidence of an actively leaking, broken pipe was observed in the ceiling cavity of Hallway (SW) outside rooms 106 and 107. No visible mould growth was observed. No sampling of mould was conducted.

Mould affected materials identified during demolition activities must be removed by a qualified contractor in accordance with practices described in the Canadian Construction Association's Guidelines for Mould Remediation. Mould affected asbestos containing materials must be managed and disposed of using precautions that are appropriate for both mould and asbestos.

3.8 Halocarbons

The Ozone Layer Protection Regulations (Nova Scotia Regulation 54/95) made under *NSEA* deals with all aspects of halocarbons. Halocarbons are also regulated federally by the Federal Halocarbon Regulations (2003) and the Ozone Depleting Substances Regulation (1998). The regulations identify a list of halocarbons, as well as specific handling procedures. Halocarbons are generally found in refrigeration and fire suppression equipment.

A refrigeration unit suspected to contain halocarbons was noted in the subject building at the time of the Survey. Multiple air conditioning units suspected to contain halocarbons were also noted throughout the building. Halocarbons must be removed by a qualified contractor prior to disposal of any refrigeration or air conditioning units.

3.9 Urea-Formaldehyde Foam Insulation (UFFI)

No suspected UFFI or indicators of UFFI applications were observed in the subject building.

3.10 Radioactive Materials

3.10.1 Radon

No sampling for radon gas was conducted as part of this Survey.

3.11 Silica

The building has concrete slab foundation and concrete block walls. Construction disturbances such as cutting, breaking or pulverizing of silica-containing products may result in exposure to airborne silica. Appropriate hygiene and personal protection measures must be developed and employed to ensure that the exposure criteria for silica does not exceed the ACGIH TLV of (0.025 mg/m³) (used by Nova Scotia Occupational Health and Safety Regulations).

Clean concrete may be disposed of at a C&D Site.

Workers must implement appropriate health and safety precautions that meet all applicable legislation. These precautions may include donning appropriate PPE and use of appropriate health and safety measures suitable to mitigate silica dust exposure. The Ontario Guideline- *Silica on Construction Projects* may be referenced for appropriate procedures to implement during removal of concrete.

CHAPTER 4 **LIMITATIONS**

The results presented in this report are indicative of the observations recorded and samples collected at the time and places noted in this report. Every effort was made to collect samples which were representative of potential hazardous building materials. Intrusive sampling was completed in select locations during the Survey and while there is no evidence to suggest otherwise, it is possible that hidden hazardous materials may not have been observed or sampled during the Survey. It is possible that asbestos fibres are not evenly distributed in a material and therefore the results of this Survey are thought to be indicative of other similar materials but may not be entirely identical.

The opinions contained in this report are based upon accepted professional principals but should not be interpreted as legal or medical advice or as a guarantee or warranty regarding potential liability associated with conditions at this site.

Any use that a third party makes of this report, or any reliance on, or decisions made based upon it, are the responsibility of such third parties. CBCL Limited accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made based upon this report.

Should additional information become available, CBCL Limited requests that this information be brought to our attention so that we may re-assess the conclusions presented herein.

Respectfully Submitted,

CBCL Limited

DRAFT

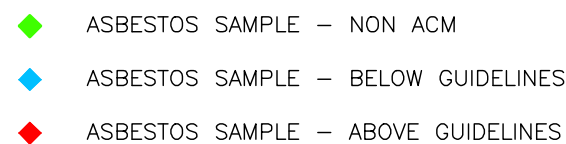
Prepared by:
Matt McClement
Environmental Technician


DRAFT

Reviewed by:
Stephanie Kilfoil, B.Sc., P.Eng.
Senior Environmental Engineer

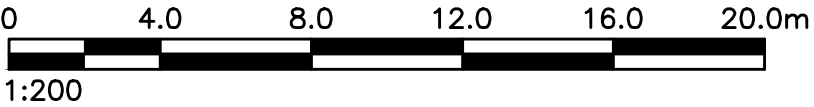
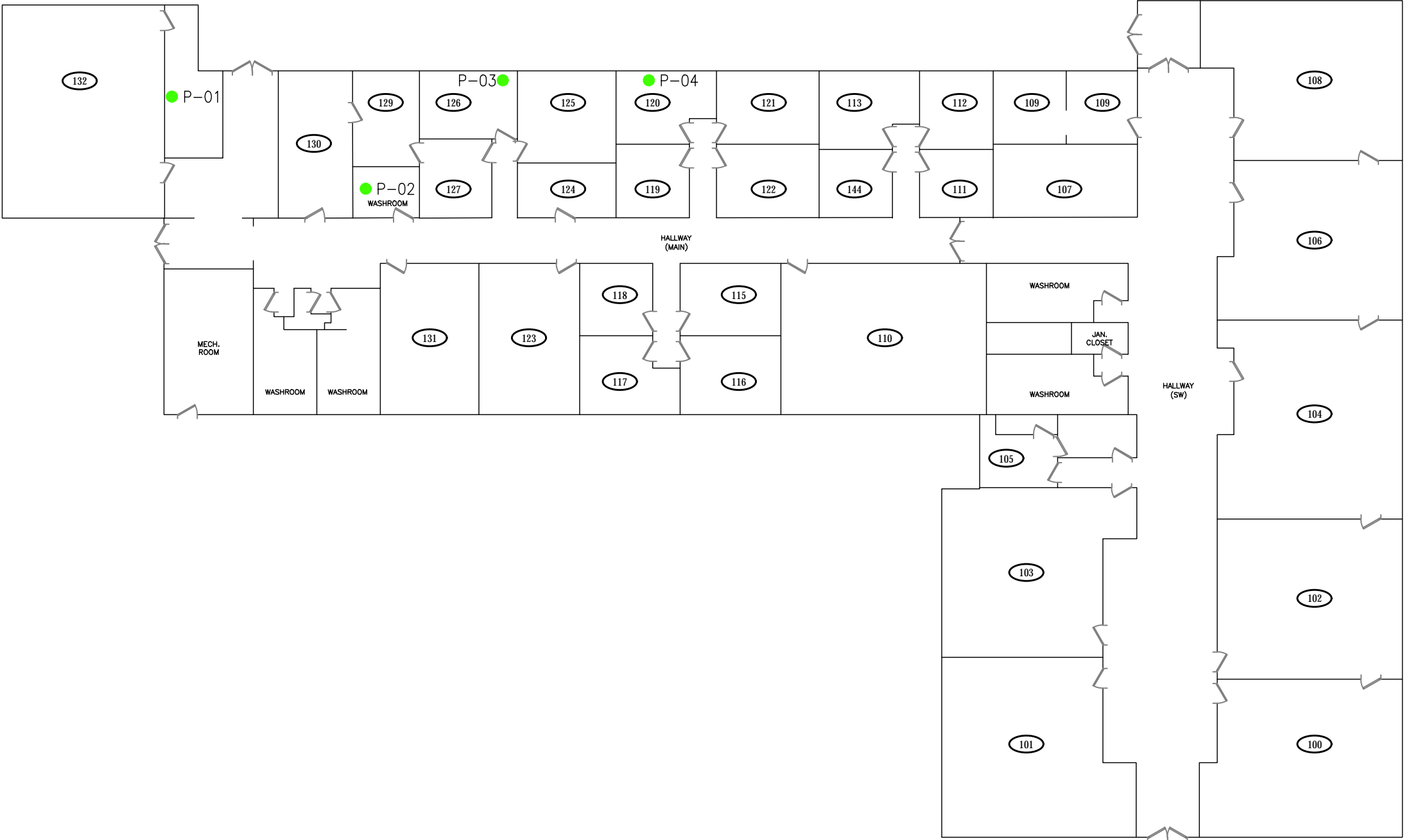
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Figures of Sample Locations




Date JAN 2019	Scale 1:200	Designed MM	Drawn RM	Checked MM	Approved SK	CBCL No. 181255.00	Contract —
		ELMSDALE HIGH HAZMAT SURVEY, ELMSDALE, NS					Drawing 1
		ASBESTOS SAMPLE LOCATIONS					

DRAWING NAME: K:\PROJECTS\181255.00 HAZMAT SURVEY ELMSDALE HIGH\20 CAD\07 ENVIRON\181255.00 - HAZMAT.DWG LAYOUT NAME: FIGURE 2 PLOT DATE: January-16-19 11:29:18 AM CAD_OPERATOR: RMAYER



● PAINT SAMPLE – BELOW GUIDELINES

Date JAN 2019	Scale 1:200	Designed MM	Drawn RM	Checked MM	Approved SK	CBCL No. 181255.00	Contract –
 CBCL LIMITED <u>Consulting Engineers</u>		ELMSDALE HIGH HAZMAT SURVEY, ELMSDALE, NS					Drawing 2
		PAINT SAMPLE LOCATIONS					

Hazardous Materials Summary Tables

TABLE 1: ASBESTOS CONTAINING MATERIALS
Building: CCAHS Elmsdale
Location: 224 Highway 214, Elmsdale, NS
Project No. 181255.00

Sample #	Location	Description	Friable/Non-Friable	Asbestos Present, Total % Asbestos
				Guideline - 0.5 ¹
CBCL Limited Survey Findings (December 2018)				
AS-01	Closet off Room 132, Ceiling	Ceiling Tile - Pinhole with Fissure	Friable	NAD
AS-02	Closet off Room 132, Wall	Drywall Joint Compound	Potentially Friable	NAD
AS-03	Closet off Room 132, Floor	1x1 Floor Tile, Grey with Streak	Non-Friable	NAD
AS-03	Closet off Room 132, Floor	1x1 Floor Tile, Mastic	Non-Friable	NAD
AS-04	Closet off Room 132, Wall	Baseboard Mastic	Non-Friable	NAD
AS-05	Hallway (Main), Ceiling	Ceiling Tile - Small / Medium Hole Pattern	Friable	NAD
AS-06	Hallway (Main), Wall	Texture Coating on Concrete	Non-Friable	NAD
AS-07	Hallway (Main), Ceiling Cavity	Barrier Paper (Old F/G)	Non-Friable	NAD
AS-08	Hallway (Main), Piping	Piping Insulation, Fitting (EXP)	Friable	60% Chrysotile
AS-09	Hallway (Main), Piping	Piping Insulation, Fitting	Friable	65% Chrysotile
AS-10	Hallway (Main), Piping	Piping Insulation, Straight Run	Friable	NAD
AS-11	Hallway (Main), Piping	Piping Insulation, Straight Run	Friable	60% Chrysotile
AS-12	Room 130, Ceiling	Texture Coating	Potentially Friable	2% Chrysotile
AS-13	Room 130, Floor	Vinyl Sheet Flooring, Tan	Non-Friable	10.3% Chrysotile
AS-14	Room 130, Floor	Old Flooring Material below Tan VSF	Non-Friable	6.4% Chrysotile
AS-15	Room 127, Ceiling	Texture Coating	Potentially Friable	1% Chrysotile
AS-16	Room 127, Walls	Concrete Block Mortar	Non-Friable	NAD
AS-17	Room 126, Floor	1x1 Floor Tile, Lt. Blue with White Streak	Non-Friable	NAD
AS-18	Men's Washroom, Floor	1x1 Floor Tile, Beige with Brown Streak	Non-Friable	NAD
AS-19	Men's Washroom, Window	Caulking Material	Non-Friable	2.0% Chrysotile
AS-20	Staff Washroom, Ceiling	Texture Coating, Texture	Potentially Friable	2.0% Chrysotile
AS-20	Staff Washroom, Ceiling	Texture Coating, Skim Coat	Potentially Friable	NAD
AS-21	Staff Washroom, Wall	Drywall Joint Compound	Potentially Friable	NAD
AS-22	Hallway, Doorways	Floor Tile Material, Black	Non-Friable	NAD
AS-23	Room 117, Wall	Drywall Joint Compound	Potentially Friable	NAD
AS-24	Room 118, Piping	Wrap on Piping Insulation, Straight Run	Non-Friable	NAD
AS-24	Room 118, Piping	Tar Paper on Piping Insulation, Straight Run	Non-Friable	8% Chrysotile
AS-25	Room 120, Wall	Drywall Joint Compound	Potentially Friable	NAD
AS-26	Room 110, Piping	Piping Insulation, Fitting	Friable	55% Chrysotile
AS-27	Room 110, Piping	Piping Insulation, Straight Run Air-Cell	Friable	65% Chrysotile
AS-28	Room 110, Wall	Expansion Joint Compound, White	Non-Friable	0.27% Chrysotile
AS-28	Room 110, Wall	Expansion Joint Compound, Grey	Non-Friable	1.9% Chrysotile
AS-29	Hallway (SW), Floor	1x1 Floor Tile Beige with Brown Streak	Non-Friable	NAD
AS-30	Hallway (SW), Ceiling	Ceiling Tile, Pinhole Pattern	Friable	NAD
AS-31	Hallway (SW), Ceiling/Wall Cavity	Barrier Paper	Non-Friable	NAD
AS-32	Room 100, Ceiling Cavity	Barrier Paper on Structural Concrete	Non-Friable	NAD
AS-33	Room 100, Floor	1x1 Floor Tile, Lt Green	Non-Friable	NAD
AS-34	Room 105 (Bathroom), Ceiling	Heat Shield, Lighting Unit	Friable	45% Chrysotile
AS-35	Men's Washroom (SW), Ceiling	Ceiling Tile, Multi-Sized Pinhole Pattern	Friable	NAD
AS-36	Room 107, Floor	1x1 Floor Tile, Tan	Non-Friable	0.53% Chrysotile
AS-37	Room 107, Piping	Piping Insulation, Roof Drain Fitting	Friable	NAD
AS-38	Room 109, Wall	Drywall Joint Compound	Potentially Friable	NAD
AS-39	Mechanical Room, Chimney	Brick Mortar	Non-Friable	NAD
EXT-AS-01	Building Exterior, Wall	Transite Panel	Non-Friable	13.6% Chrysotile
EXT-AS-02	Building Exterior, Wall	Caulking Around Transite Panel	Non-Friable	2.2% Chrysotile
EXT-AS-03	Building Exterior, Wall	Expansion Joint Compound, White	Non-Friable	1.2% Chrysotile
EXT-AS-03	Building Exterior, Wall	Expansion Joint Compound, Black	Non-Friable	0.76% Chrysotile
EXT-AS-04	Building Exterior, Window	Window Glazing, Grey	Non-Friable	NAD
EXT-AS-05	Building Exterior, Wall	Brick Mortar	Non-Friable	NAD
EXT-AS-06	Building Exterior, Door	Caulking, Grey	Non-Friable	1.2% Chrysotile
EXT-AS-07	Building Exterior, Window	Caulking, Black	Non-Friable	NAD

Notes:

¹. Nova Scotia Department of Labour and Advanced Education's *Asbesetos in the Workplace: A Guide to Assessment & Management of Asbestos in the Workplace* defines an asbestos-containing materials as one that contains 0.5% asbestos by weight.

Bold and Shaded Result Exceeds guideline and is therefore considered an asbestos containing material.
Bold Results Asbestos identified below regulatory guidelines

TABLE 2: METAL CONTAINING PAINTS/COATINGS, PCB and LEAD SAMPLES
Building: CCAHS Elmsdale
Location: 224 Highway 214, Elmsdale, NS
DCC Project No. 181255.00

Sample #	Location, Description, Condition	Metals	Lead	Mercury	Arsenic
		Units	mg/kg	mg/kg	mg/kg
		Disposal Guideline ¹	1000	10	50
CBCL Limited Survey Findings (March 2013)					
P-01	Closet off Room 132, Wall Paint, Tan		<5.0	<1.0	<10
P-01 Lab Dup	Closet off Room 132, Wall Paint, Tan		<5.0	<1.0	<10
P-02	Staff Washroom, Ceiling Paint, White		49	<1.0	<10
P-03	Room 126, Wall Paint, Medium Tan		<5.0	<1.0	<10
P-04	Room 120, Wall Paint, Cream		<5.0	<1.0	<10
P-04 Lab Dup	Room 120, Wall Paint, Cream		<5.0	<1.0	<10

Notes:

¹ Guidelines for Disposal of Contaminated Solids in Landfills, Nova Scotia Environment, (May 10, 2016)

Bold and Shaded Result Concentration is above the referenced landfill disposal guideline

N/A – Not applicable as samples not submitted for analysis

Table 3: Hazardous Materials Requiring Special Handling
Building: CCAHS Elmsdale
Location: 224 Highway 214, Elmsdale, NS
Project No. 181255.00

Building Materials	Hazardous Material	Description	Approximate Quantity	Regulatory Guideline (follow most stringent)	Comments
Texture Coatings and Associated Dust	Potentially Friable Asbestos	All texture coating material finishes throughout the building including associated dust/debris in locations where these materials are found in deteriorated condition.	Approximately 275 m² of ceilings are covered with texture coating finish. Plaster is well adhered to the cinder block and concrete in the majority of the areas where present. Some plaster around windows and areas of water damage within the building was found to be in fair to poor condition and associated asbestos containing dust/debris may be present on adjacent surfaces.	<p>The Nova Scotia Department of Labour and Advanced Education, under the Occupational Health and Safety Act, have various Codes of Practice that must be followed while working with hazardous materials with regard to worker safety. When dealing with asbestos, the following apply: Asbestos in the Workplace: A Guide to Assessment & Management of Asbestos in the Workplace; Asbestos in the Workplace: A Guide to Removal of Friable Asbestos Containing Material, and the Nova Scotia Asbestos Waste Mangement Regulation 53/95.</p> <p>The Nova Scotia Asbestos Waste Management Regulations governs the management, maintenance, handling and removal of asbestos containing materials. This regulation is under the authority of the Environment Act and is administered by the Department of Environment. According to the regulations asbestos material is defined as a friable waste material containing asbestos fibres or asbestos dust in a concentration greater than 0.5% asbestos by weight.</p>	<p>Potentially friable asbestos containing texture coating and associated dust/debris indentified throughout the subject building must be removed and disposed of in accordance with the applicable NS guides and regulations.</p> <p>Workers must complete a job hazard analysis and implement appropriate health and safety precautions that meet all applicable legislation when working with materials that contain asbestos (at any concentration).</p> <p>Materials containing asbestos must be disposed of at an approved facility with prior approval from the facility operator, in accordance with the Nova Scotia Asbestos Waste Management Regulations.</p>
Vinyl Sheet Flooring	Non-friable Asbestos	Vinyl sheet flooring materials located in Room 130 within the subject building.	Approximately 25 m² of vinyl sheet flooring material was identified as being asbestos containing throughout the subject building.	<p>The Nova Scotia Department of Labour and Advanced Education, under the Occupational Health and Safety Act, have various Codes of Practice that must be followed while working with hazardous materials with regard to worker safety. When dealing with asbestos, the following apply: Asbestos in the Workplace: A Guide to Assessment & Management of Asbestos in the Workplace; Asbestos in the Workplace: A Guide to Removal of Friable Asbestos Containing Material, and the Nova Scotia Asbestos Waste Mangement Regulation 53/95.</p> <p>The Nova Scotia Asbestos Waste Management Regulations governs the management, maintenance, handling and removal of asbestos containing materials. This regulation is under the authority of the Environment Act and is administered by the Department of Environment. According to the regulations asbestos material is defined as a friable waste material containing asbestos fibres or asbestos dust in a concentration greater than 0.5% asbestos by weight.</p>	<p>Non-friable asbestos containing vinyl floor materials indentified throughout the subject building must be removed and disposed of in accordance with the applicable NS guides and regulations.</p> <p>Workers must complete a job hazard analysis and implement appropriate health and safety precautions that meet all applicable legislation when working with materials that contain asbestos (at any concentration).</p> <p>Materials containing asbestos must be disposed of at an approved facility with prior approval from the facility operator, in accordance with the Nova Scotia Asbestos Waste Management Regulations.</p>
Tan Vinyl Floor Tile (12"x12")	Non-friable Asbestos	Vinyl floor tile materials located in Room 107 within the subject building.	Approximately 22.5 m² of vinyl floor tile was identified as being asbestos containing throughout the subject building.	<p>The Nova Scotia Department of Labour and Advanced Education, under the Occupational Health and Safety Act, have various Codes of Practice that must be followed while working with hazardous materials with regard to worker safety. When dealing with asbestos, the following apply: Asbestos in the Workplace: A Guide to Assessment & Management of Asbestos in the Workplace; Asbestos in the Workplace: A Guide to Removal of Friable Asbestos Containing Material, and the Nova Scotia Asbestos Waste Mangement Regulation 53/95.</p> <p>The Nova Scotia Asbestos Waste Management Regulations governs the management, maintenance, handling and removal of asbestos containing materials. This regulation is under the authority of the Environment Act and is administered by the Department of Environment. According to the regulations asbestos material is defined as a friable waste material containing asbestos fibres or asbestos dust in a concentration greater than 0.5% asbestos by weight.</p>	<p>Non-friable asbestos containing vinyl floor indentified throughout the subject building must be removed and disposed of in accordance with the applicable NS guides and regulations.</p> <p>Workers must complete a job hazard analysis and implement appropriate health and safety precautions that meet all applicable legislation when working with materials that contain asbestos (at any concentration).</p> <p>Materials containing asbestos must be disposed of at an approved facility with prior approval from the facility operator, in accordance with the Nova Scotia Asbestos Waste Management Regulations.</p>
Piping and Mechanical Insulations	Friable Asbestos	Straight run pipe insulation and parging cement associated with elbows/tees/joints, etc. on mechanical piping throughout the building interior.	Approximately 170 linear meters of asbestos containing straight run pipe insulation was noted through the building interior. Approximately 110 readily visible pipe elbows with parging cement were noted. The majority of the elbows with parging cement identified were elbows found to be in fair to poor condition (unwrapped and deteriorating). Piping is not readily visible in a number of locations throughout the building (i.e., solid ceiling and wall cavities) and as such, additional asbestos containing materials associated with this mechanical piping system may be present.	<p>The Nova Scotia Department of Labour and Advanced Education, under the Occupational Health and Safety Act, have various Codes of Practice that must be followed while working with hazardous materials with regard to worker safety. When dealing with asbestos, the following apply: Asbestos in the Workplace: A Guide to Assessment & Management of Asbestos in the Workplace; Asbestos in the Workplace: A Guide to Removal of Friable Asbestos Containing Material, and the Nova Scotia Asbestos Waste Mangement Regulation 53/95.</p> <p>The Nova Scotia Asbestos Waste Management Regulations governs the management, maintenance, handling and removal of asbestos containing materials. This regulation is under the authority of the Environment Act and is administered by the Department of Environment. According to the regulations asbestos material is defined as a friable waste material containing asbestos fibres or asbestos dust in a concentration greater than 0.5% asbestos by weight.</p>	<p>Friable asbestos containing mechanical insulations indentified throughout the subject building must be removed and disposed of in accordance with the applicable NS guides and regulations.</p> <p>Workers must complete a job hazard analysis and implement appropriate health and safety precautions that meet all applicable legislation when working with materials that contain asbestos (at any concentration).</p> <p>Materials containing asbestos must be disposed of at an approved facility with prior approval from the facility operator, in accordance with the Nova Scotia Asbestos Waste Management Regulations.</p>

Table 3:
Building: CCAHS Elmsdale
Location: 224 Highway 214, Elmsdale, NS
Project No. 181255.00

Building Materials	Hazardous Material	Description	Approximate Quantity	Regulatory Guideline (follow most stringent)	Comments
Lighting Heat Shield	Friable Asbestos	Heat shield identified on the light unit within the small bathroom in Room 105.	One (1) light unit was observed during the building assessment. Any units matching the light found in this location should also be considered as asbestos containing.	<p>The Nova Scotia Department of Labour and Advanced Education, under the Occupational Health and Safety Act, have various Codes of Practice that must be followed while working with hazardous materials with regard to worker safety. When dealing with asbestos, the following apply: Asbestos in the Workplace: A Guide to Assessment & Management of Asbestos in the Workplace; Asbestos in the Workplace: A Guide to Removal of Friable Asbestos Containing Material, and the Nova Scotia Asbestos Waste Mangement Regulation 53/95.</p> <p>The Nova Scotia Asbestos Waste Management Regulations governs the management, maintenance, handling and removal of asbestos containing materials. This regulation is under the authority of the Environment Act and is administered by the Department of Environment. According to the regulations asbestos material is defined as a friable waste material containing asbestos fibres or asbestos dust in a concentration greater than 0.5% asbestos by weight.</p>	<p>Friable asbestos containing heat shields indentified throughout the subject building must be removed and disposed of in accordance with the applicable NS guides and regulations.</p> <p>Workers must complete a job hazard analysis and implement appropriate health and safety precautions that meet all applicable legislation when working with materials that contain asbestos (at any concentration).</p> <p>Materials containing asbestos must be disposed of at an approved facility with prior approval from the facility operator, in accordance with the Nova Scotia Asbestos Waste Management Regulations.</p>
Transite Material	Non-friable Asbestos	Transite panels observed in ceiling cavity of south wing Hallway and observed on the building exterior between windows and above doors.	<p>Approximately 12-15 m² of asbestos containing transite panels were noted on the building exterior. The material was observed between windows and used as soffits above doorways.</p> <p>Approximately 2-5 m² of asbestos containing transite panels were noted within the building interior. The material was observed within the ceiling cavity of the south wing hallway.</p> <p>Transite materials may be present in concealed locations within the building interior which were inaccessible during the assessment (i.e. behind solid walls and ceilings).</p>	<p>The Nova Scotia Department of Labour and Advanced Education, under the Occupational Health and Safety Act, have various Codes of Practice that must be followed while working with hazardous materials with regard to worker safety. When dealing with asbestos, the following apply: Asbestos in the Workplace: A Guide to Assessment & Management of Asbestos in the Workplace; Asbestos in the Workplace: A Guide to Removal of Friable Asbestos Containing Material, and the Nova Scotia Asbestos Waste Mangement Regulation 53/95.</p> <p>The Nova Scotia Asbestos Waste Management Regulations governs the management, maintenance, handling and removal of asbestos containing materials. This regulation is under the authority of the Environment Act and is administered by the Department of Environment. According to the regulations asbestos material is defined as a friable waste material containing asbestos fibres or asbestos dust in a concentration greater than 0.5% asbestos by weight.</p>	<p>Non-friable asbestos containing transite panel materials indentified throughout the subject building must be removed and disposed of in accordance with the applicable NS guides and regulations.</p> <p>Workers must complete a job hazard analysis and implement appropriate health and safety precautions that meet all applicable legislation when working with materials that contain asbestos (at any concentration).</p> <p>Materials containing asbestos must be disposed of at an approved facility with prior approval from the facility operator, in accordance with the Nova Scotia Asbestos Waste Management Regulations.</p>
Caulkings / Expansion Joint Compound	Non-friable Asbestos	Expansion joint materials found in Room 110 and on the building exterior. Any material resembling the description or function of the sampled expansion joint compound should be considered as an asbestos containing material. Caulking materials found on windows and doors on the building interior and exterior.	Not Quantified.	<p>The Nova Scotia Department of Labour and Advanced Education, under the Occupational Health and Safety Act, have various Codes of Practice that must be followed while working with hazardous materials with regard to worker safety. When dealing with asbestos, the following apply: Asbestos in the Workplace: A Guide to Assessment & Management of Asbestos in the Workplace; Asbestos in the Workplace: A Guide to Removal of Friable Asbestos Containing Material, and the Nova Scotia Asbestos Waste Mangement Regulation 53/95.</p> <p>The Nova Scotia Asbestos Waste Management Regulations governs the management, maintenance, handling and removal of asbestos containing materials. This regulation is under the authority of the Environment Act and is administered by the Department of Environment. According to the regulations asbestos material is defined as a friable waste material containing asbestos fibres or asbestos dust in a concentration greater than 0.5% asbestos by weight.</p>	<p>Non-friable asbestos containing caulking and expansion joint compound materials indentified throughout the ointerior and exterior of the subject building must be removed and disposed of in accordance with the applicable NS guides and regulations.</p> <p>Workers must complete a job hazard analysis and implement appropriate health and safety precautions that meet all applicable legislation when working with materials that contain asbestos (at any concentration).</p> <p>Materials containing asbestos must be disposed of at an approved facility with prior approval from the facility operator, in accordance with the Nova Scotia Asbestos Waste Management Regulations.</p>
Mercury Thermostats and Fluorescent Light Tubes	Mercury	Thermostats containing mercury vials and fluorescent light bulbs throughout building	Not Quantified.	Nova Scotia Guidelines for the Disposal of Contaminated Solids in Landfills (2016).	Management and disposal of equipment containing mercury must be completed in accordance with applicable provincial and federal guidelines. Mercury containing equipment must be removed by a qualified contractor, appropriately packaged and sent for recycling/disposal at a facility that accepts mercury containing materials. It should be noted that Efficiency Nova Scotia
Fluorescent light ballasts	These ballasts if manufactured prior to 1978 may contain PCBs	Fluorescent light ballasts in the building interior.	Not Quantified.	Nova Scotia Guidelines for the Disposal of Contaminated Solids in Landfills (2016).	Light ballasts should be checked to confirm the presence/absence of PCBs at the time of removal. Qualified contractor to remove/handle/store/transport any PCB containing light ballasts as per the TDG Regulations, as to not break or damage them. Ballasts containing PCBs to be disposed of at a licensed facility.
Poured concrete, concrete products, cement mortars used in the building construction	Silica Dust	Poured slabs, foundations, mortar.	Not Quantified.	<p>Nova Scotia Occupational Exposure Limits.</p> <p>Ontario Ministry of Labour- Occupational Health and Safety Branch. April 2011. Guideline- Silica on Construction Projects</p>	Construction disturbances such as cutting, breaking or pulverizing of silica-containing products may result in exposure to airborne silica. Appropriate hygiene and personal protection measures must be developed and employed to ensure that the exposure criteria for silica does not exceeded the ACGIH TLV of (0.025 mg/m³) (used by Nova Scotia Occupational Health and Safety Regulations).
Refrigeration and Air Conditioning units	Halocarbons	Refrigeration and Air Conditioning units	Not Quantified.	The Ozone Layer Protection Regulations (Nova Scotia Regulation 54/95) made under <i>NSEA</i> deals with all aspects of halocarbons. Halocarbons are also regulated federally by the Federal Halocarbon Regulations (2003) and the Ozone Depleting Substances Regulation (1998). The regulations identify a list of halocarbons, as well as specific handling procedures. Halocarbons are generally found in refrigeration and fire suppression equipment.	A refrigeration unit suspected to contain halocarbons was noted in the subject building at the time of the Survey. Multiple air conditioning units suspected to contain halocarbons were also noted throughout the building. Halocarbons must be removed by a qualified contractor prior to disposal of any refrigeration or air conditioning units.

Notes:

Non-issue items (not identified above) may be taken to a C&D site or be recycled at contractors’ discretion.

Should a material suspected to contain asbestos fibres become uncovered during demolition activities, all work in the areas that may disturb the material must be stopped. Samples of the suspected material shall be submitted for laboratory analysis to determine if asbestos fibres are present. Confirmed asbestos-containing materials must be handled in accordance with the procedures outlined in the Nova Scotia Code of Asbestos is present in building materials and may be present in settled dust. Therefore appropriate worker protection and controls are required to prevent worker exposure during demolition activities.

Quantities presented in the table are approximate and inferred based on observations made in accessible spaces during the site visit.

Laboratory Certificates



EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
<http://www.EMSL.com> / torontolab@emsl.com

EMSL Canada Order 551815077
Customer ID: 55CBCH34
Customer PO: 181255.00
Project ID:

Attn: Kelly MacDougall
CBCL, LTD.
1489 Hollis street
P.O. Box 606
Halifax, NS B3L 2R7
Proj: 181255.00

Phone: (902) 421-7241
Fax: (902) 423-3938
Collected: 12/17/2018
Received: 12/20/2018
Analyzed: 12/27/2018

Test Report: Asbestos Analysis of Bulk Materials for Nova Scotia Code of Practice Section 66 OHS Act - Asbestos in the Workplace via EPA600/R-93/116 Method

Client Sample ID: AS-01 **Lab Sample ID:** 551815077-0001

Sample Description: Ceiling Tile - Pinhole w/ Fissure Closet Off Room 132

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Gray	75.0%	25.0%	None Detected	

Client Sample ID: AS-02 **Lab Sample ID:** 551815077-0002

Sample Description: Drywall Joint Compound - Wall Closet Off Room 132

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Beige	0.0%	100.0%	None Detected	

Client Sample ID: AS-03-Floor Tile **Lab Sample ID:** 551815077-0003

Sample Description: 1x1 Floor Tile - Grey w/ Streak - Closet Off Room 132

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Gray	0.0%	100%	None Detected	

Client Sample ID: AS-03-Mastic **Lab Sample ID:** 551815077-0003A

Sample Description: 1x1 Floor Tile - Grey w/ Streak - Closet Off Room 132

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Black	0.0%	100%	None Detected	

Client Sample ID: AS-04 **Lab Sample ID:** 551815077-0004

Sample Description: Baseboard Mastic - Wall Closet Off Room 132

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: AS-05 **Lab Sample ID:** 551815077-0005

Sample Description: Ceiling Tile - Sm Hole w/ Med Hole - Hallway (Main)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Gray	75.0%	25.0%	None Detected	

Client Sample ID: AS-06 **Lab Sample ID:** 551815077-0006

Sample Description: Texture Coating - Walls Hallway (Main)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	White	0.0%	100.0%	None Detected	



EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
 Phone/Fax: (289) 997-4602 / (289) 997-4607
<http://www.EMSL.com> / torontolab@emsl.com

EMSL Canada Order 551815077
 Customer ID: 55CBCH34
 Customer PO: 181255.00
 Project ID:

Test Report: Asbestos Analysis of Bulk Materials for Nova Scotia Code of Practice Section 66 OHS Act - Asbestos in the Workplace via EPA600/R-93/116 Method

Client Sample ID: AS-07 **Lab Sample ID:** 551815077-0007

Sample Description: Barrier Paper (old F/G) - Ceiling Cavity Hallway (Main)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Brown/Black	80.0%	20.0%	None Detected	

Client Sample ID: AS-08 **Lab Sample ID:** 551815077-0008

Sample Description: Piping Insulation - Fitting (Exp) Hallway (Main)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Gray	0.0%	40.0%	60% Chrysotile	

Client Sample ID: AS-09 **Lab Sample ID:** 551815077-0009

Sample Description: Piping Insulation - Fitting Hallway (Main)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Gray	0.0%	35.0%	65% Chrysotile	

Client Sample ID: AS-10 **Lab Sample ID:** 551815077-0010

Sample Description: Piping Insulation - Straight Run Hallway (Main)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Brown	90.0%	10.0%	None Detected	

Client Sample ID: AS-11 **Lab Sample ID:** 551815077-0011

Sample Description: Piping Insulation - Straight Run (AC) Hallway (Main)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Gray	0.0%	40.0%	60% Chrysotile	

Client Sample ID: AS-12 **Lab Sample ID:** 551815077-0012

Sample Description: Texture Coating - Ceiling Room 130

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Brown/White	0.0%	98.0%	2% Chrysotile	

Client Sample ID: AS-13 **Lab Sample ID:** 551815077-0013

Sample Description: Vinyl Sheet Flooring - Tan Room 130

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Tan	0.0%	89.7%	10.3% Chrysotile	

Client Sample ID: AS-14 **Lab Sample ID:** 551815077-0014

Sample Description: Old Flooring Below VSF - Red Room 130

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Red	0.0%	93.6%	6.4% Chrysotile	



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Test Report: Asbestos Analysis of Bulk Materials for Nova Scotia Code of Practice Section 66 OHS Act - Asbestos in the Workplace via EPA600/R-93/116 Method

Client Sample ID: AS-15

Lab Sample ID: 551815077-0015

Sample Description: Texture Coating - Ceiling Room 127

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	White	0.0%	99.0%	1% Chrysotile	

Client Sample ID: AS-16

Lab Sample ID: 551815077-0016

Sample Description: Concrete Block Mortar - Walls Room 127

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Gray	0.0%	100%	None Detected	

Client Sample ID: AS-17

Lab Sample ID: 551815077-0017

Sample Description: 1x1 Floor Tile - Lt. Blue w/ White Streak Room 126

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Blue	0.0%	100%	None Detected	

Client Sample ID: AS-18

Lab Sample ID: 551815077-0018

Sample Description: 1x1 Floor Tile - Beige w/ Brown Speck Men's Washroom

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Beige	0.0%	100%	None Detected	

Client Sample ID: AS-19

Lab Sample ID: 551815077-0019

Sample Description: Old Caulking - Window Men's Washroom

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Gray	0.0%	98.0%	2.0% Chrysotile	

Client Sample ID: AS-20-Texture

Lab Sample ID: 551815077-0020

Sample Description: Texture Coating - Ceiling Staff Washroom

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	White	0.0%	98.0%	2% Chrysotile	

Client Sample ID: AS-20-Skim Coat

Lab Sample ID: 551815077-0020A

Sample Description: Texture Coating - Ceiling Staff Washroom

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	White	0.0%	100.0%	None Detected	

Client Sample ID: AS-21

Lab Sample ID: 551815077-0021

Sample Description: Drywall Joint Compound - Wall Staff Washroom

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	White	0.0%	100.0%	None Detected	



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Test Report: Asbestos Analysis of Bulk Materials for Nova Scotia Code of Practice Section 66 OHS Act - Asbestos in the Workplace via EPA600/R-93/116 Method

Client Sample ID: AS-22 **Lab Sample ID:** 551815077-0022

Sample Description: Black Floor Tile - Hallway to Most Washroom

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Black	0.0%	100%	None Detected	

Client Sample ID: AS-23 **Lab Sample ID:** 551815077-0023

Sample Description: Drywall Joint Compound - Wall Room 117

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	White	0.0%	100.0%	None Detected	

Client Sample ID: AS-24-Wrap **Lab Sample ID:** 551815077-0024

Sample Description: Piping Insulation - Straight Run Room 118

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Brown	90.0%	10.0%	None Detected	

Client Sample ID: AS-24-Tar Paper **Lab Sample ID:** 551815077-0024A

Sample Description: Piping Insulation - Straight Run Room 118

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Black	40.0%	52.0%	8% Chrysotile	

Client Sample ID: AS-25 **Lab Sample ID:** 551815077-0025

Sample Description: Drywall Joint Compound - Wall Room 120

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	White	0.0%	100.0%	None Detected	

Client Sample ID: AS-26 **Lab Sample ID:** 551815077-0026

Sample Description: Piping Insulation - Fitting Room 110

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Gray	0.0%	45.0%	55% Chrysotile	

Client Sample ID: AS-27 **Lab Sample ID:** 551815077-0027

Sample Description: Piping Insulation - Straight Run (AC) Room 110

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Gray	0.0%	35.0%	65% Chrysotile	

Client Sample ID: AS-28-White Expansion **Lab Sample ID:** 551815077-0028

Sample Description: Fill Compound - Expansion Joint Room 110

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	White	0.0%	99.7%	0.27% Chrysotile	



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Test Report: Asbestos Analysis of Bulk Materials for Nova Scotia Code of Practice Section 66 OHS Act - Asbestos in the Workplace via EPA600/R-93/116 Method

Client Sample ID: AS-28-Grey Expansion **Lab Sample ID:** 551815077-0028A
Sample Description: Fill Compound - Expansion Joint Room 110

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Gray	0.0%	98.1%	1.9% Chrysotile	

Client Sample ID: AS-29 **Lab Sample ID:** 551815077-0029
Sample Description: 1x1 Floor Tile - Beige w/ Brown Streak Hallway (SW)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Beige	0.0%	100%	None Detected	

Client Sample ID: AS-30 **Lab Sample ID:** 551815077-0030
Sample Description: Ceiling Tile - Pinhole Hallway (SW)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Gray	75.0%	25.0%	None Detected	

Client Sample ID: AS-31 **Lab Sample ID:** 551815077-0031
Sample Description: Barrier Paper - Wall Cavity Hallway (SW)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Black	40.0%	60.0%	None Detected	

Client Sample ID: AS-32 **Lab Sample ID:** 551815077-0032
Sample Description: Barrier Paper on Structural Concrete Ceiling Cavity - Room 100

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Brown/Black	75.0%	25.0%	None Detected	

Client Sample ID: AS-33 **Lab Sample ID:** 551815077-0033
Sample Description: 1x1 Floor Tile - Lt. Green Room 100

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Green	0.0%	100%	None Detected	

Client Sample ID: AS-34 **Lab Sample ID:** 551815077-0034
Sample Description: Light Heat Shield - Light Unit Room 105 (Bathroom)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Gray	0.0%	55.0%	45% Chrysotile	

Client Sample ID: AS-35 **Lab Sample ID:** 551815077-0035
Sample Description: Ceiling Tile - Multi-sized Pinhole Men's Washroom (SW)

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Gray	75.0%	25.0%	None Detected	



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Test Report: Asbestos Analysis of Bulk Materials for Nova Scotia Code of Practice Section 66 OHS Act - Asbestos in the Workplace via EPA600/R-93/116 Method

Client Sample ID: AS-36 **Lab Sample ID:** 551815077-0036
Sample Description: 1x1 Floor Tile - Tan Room 107

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Tan	0.0%	99.5%	0.53% Chrysotile	

Client Sample ID: AS-37 **Lab Sample ID:** 551815077-0037
Sample Description: Piping Insulation - Roof Drain Room 107

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	Brown	80.0%	20.0%	None Detected	

Client Sample ID: AS-38 **Lab Sample ID:** 551815077-0038
Sample Description: Drywall Joint Compound - Walls Room 109

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/27/2018	White	0.0%	100.0%	None Detected	

Client Sample ID: AS-39 **Lab Sample ID:** 551815077-0039
Sample Description: Chimney Brick Mortar - Mechanical Room

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Gray	0.0%	100%	None Detected	

Client Sample ID: EXT-AS-01 **Lab Sample ID:** 551815077-0040
Sample Description: Transite Panel - Building Exterior

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Gray	0.0%	86.4%	13.6% Chrysotile	

Client Sample ID: EXT-AS-02 **Lab Sample ID:** 551815077-0041
Sample Description: Caulking Around Transite - Grey Building Exterior

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Gray	0.0%	97.8%	2.2% Chrysotile	

Client Sample ID: EXT-AS-03-White Expansion **Lab Sample ID:** 551815077-0042
Sample Description: Expansion Joint Compound - Black Building Exterior

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	White	0.0%	98.8%	1.2% Chrysotile	

Client Sample ID: EXT-AS-03-Black Expansion **Lab Sample ID:** 551815077-0042A
Sample Description: Expansion Joint Compound - Black Building Exterior

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Black	0.0%	99.2%	0.76% Chrysotile	



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Test Report: Asbestos Analysis of Bulk Materials for Nova Scotia Code of Practice Section 66 OHS Act - Asbestos in the Workplace via EPA600/R-93/116 Method

Client Sample ID: EXT-AS-04

Lab Sample ID: 551815077-0043

Sample Description: Window Glaring - Grey Building Exterior

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Gray	0.0%	100%	None Detected	

Client Sample ID: EXT-AS-05

Lab Sample ID: 551815077-0044

Sample Description: Brick Mortar - Building Exterior

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Gray	0.0%	100%	None Detected	

Client Sample ID: EXT-AS-06

Lab Sample ID: 551815077-0045

Sample Description: Caulking Around Door - Grey Building Exterior

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	White	0.0%	98.8%	1.2% Chrysotile	

Client Sample ID: EXT-AS-07

Lab Sample ID: 551815077-0046

Sample Description: Caulking Around Window - Black Building Exterior

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/27/2018	Black	0.0%	100%	None Detected	

Analyst(s):

Anne Balayboa PLM Grav. Reduction (23)
Natalie D'Amico PLM (28)

Reviewed and approved by:

Matthew Davis or other approved signatory
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP of any agency of the U.S. Government.

Samples analyzed by EMSL Canada Inc. Mississauga, ON NVLAP Lab Code 200877-0

(Initial report from: 12/27/2018 14:53:31)

Your Project #: 181255.00
Site Location: ELMSDALE ADULT HIGH
Your C.O.C. #: B 136112

Attention: Kelly MacDougall

CBCL Limited
Halifax - Standing offer
1489 Hollis St
PO Box 606
Halifax, NS
CANADA B3J 2R7

Report Date: 2018/12/27
Report #: R5540628
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8Y0684

Received: 2018/12/19, 16:29

Sample Matrix: Paint
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Metals Paint Acid Extr. ICPMS	2	2018/12/22	2018/12/22	ATL SOP 00058	EPA 6020A R1 m

Sample Matrix: Solid
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Metals Bulk Acid Extr. ICPMS	2	2018/12/22	2018/12/22	ATL SOP 00058	EPA 6020A R1 m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Your Project #: 181255.00
Site Location: ELMSDALE ADULT HIGH
Your C.O.C. #: B 136112

Attention: Kelly MacDougall

CBCL Limited
Halifax - Standing offer
1489 Hollis St
PO Box 606
Halifax, NS
CANADA B3J 2R7

Report Date: 2018/12/27
Report #: R5540628
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8Y0684

Received: 2018/12/19, 16:29

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Keri Mackay, Senior Project Manager

Email: kmackay@maxxam.ca

Phone# (902)420-0203 Ext:294

=====

This report has been generated and distributed using a secure automated process.

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		IPG887	IPG887	IPG889		
Sampling Date		2018/12/07	2018/12/07	2018/12/07		
COC Number		B 136112	B 136112	B 136112		
	UNITS	PS-01 - TAN PAINT WALLS - CLOSET OFF 132	PS-01 - TAN PAINT WALLS - CLOSET OFF 132 Lab-Dup	PS-03 - MED TAN PAINT WALL - ROOM 126	RDL	QC Batch
Metals						
Acid Extractable Arsenic (As)	mg/kg	<10	<10	<10	10	5902812
Acid Extractable Lead (Pb)	mg/kg	<5.0	<5.0	<5.0	5.0	5902812
Acid Extractable Mercury (Hg)	mg/kg	<1.0	<1.0	<1.0	1.0	5902812
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate						

ELEMENTS BY ATOMIC SPECTROSCOPY (SOLID)

Maxxam ID		IPG888	IPG890	IPG890		
Sampling Date		2018/12/07	2018/12/07	2018/12/07		
COC Number		B 136112	B 136112	B 136112		
	UNITS	PS-02 - WHITE PAINT CEILING - STAFF WASH RM	PS-04 - CREAM PAINT WALL - ROOM 120	PS-04 - CREAM PAINT WALL - ROOM 120 Lab-Dup	RDL	QC Batch
Metals						
Acid Extractable Arsenic (As)	mg/kg	<10	<10	<10	10	5902813
Acid Extractable Lead (Pb)	mg/kg	49	<5.0	<5.0	5.0	5902813
Acid Extractable Mercury (Hg)	mg/kg	<1.0	<1.0	<1.0	1.0	5902813
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate						

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	13.3°C
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Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5902812	BAN	Matrix Spike [IPG887-01]	Acid Extractable Arsenic (As)	2018/12/22		94	%	75 - 125
			Acid Extractable Lead (Pb)	2018/12/22		102	%	75 - 125
			Acid Extractable Mercury (Hg)	2018/12/22		105	%	75 - 125
5902812	BAN	Spiked Blank	Acid Extractable Arsenic (As)	2018/12/22		100	%	75 - 125
			Acid Extractable Lead (Pb)	2018/12/22		98	%	75 - 125
			Acid Extractable Mercury (Hg)	2018/12/22		103	%	75 - 125
5902812	BAN	Method Blank	Acid Extractable Arsenic (As)	2018/12/22	<10		mg/kg	
			Acid Extractable Lead (Pb)	2018/12/22	<5.0		mg/kg	
			Acid Extractable Mercury (Hg)	2018/12/22	<1.0		mg/kg	
5902812	BAN	RPD [IPG887-01]	Acid Extractable Arsenic (As)	2018/12/22	NC		%	35
			Acid Extractable Lead (Pb)	2018/12/22	NC		%	35
			Acid Extractable Mercury (Hg)	2018/12/22	NC		%	35
5902813	BAN	Matrix Spike [IPG890-01]	Acid Extractable Arsenic (As)	2018/12/22		76	%	75 - 125
			Acid Extractable Lead (Pb)	2018/12/22		82	%	75 - 125
			Acid Extractable Mercury (Hg)	2018/12/22		81	%	75 - 125
5902813	BAN	Spiked Blank	Acid Extractable Arsenic (As)	2018/12/22		100	%	75 - 125
			Acid Extractable Lead (Pb)	2018/12/22		98	%	75 - 125
			Acid Extractable Mercury (Hg)	2018/12/22		103	%	75 - 125
5902813	BAN	Method Blank	Acid Extractable Arsenic (As)	2018/12/22	<10		mg/kg	
			Acid Extractable Lead (Pb)	2018/12/22	<5.0		mg/kg	
			Acid Extractable Mercury (Hg)	2018/12/22	<1.0		mg/kg	
5902813	BAN	RPD [IPG890-01]	Acid Extractable Arsenic (As)	2018/12/22	NC		%	35
			Acid Extractable Lead (Pb)	2018/12/22	NC		%	35
			Acid Extractable Mercury (Hg)	2018/12/22	NC		%	35

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

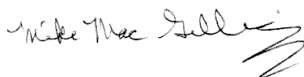
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Mike MacGillivray, Scientific Specialist (Inorganics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Photographs

Photo Log – CCAHS Elmsdale, 224 Highway 214, Elmsdale, Nova Scotia



Photo 1: Subject building, Chignecto-Central Adult High School (CCAHS Elmsdale).



Photo 2: Photo of sample AS-08, Hallway (Main) – Piping Insulation, Fitting, 60% Chrysotile Asbestos.

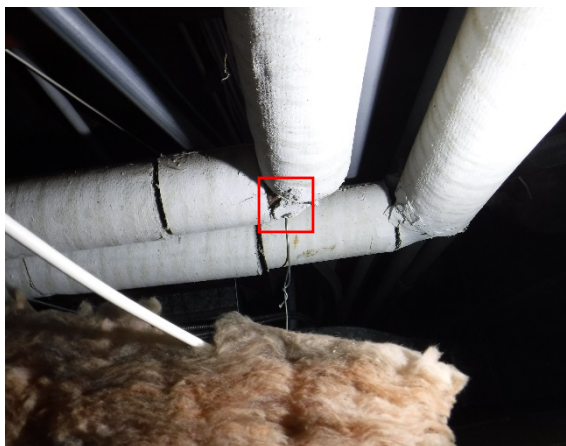


Photo 3: Photo of sample AS-09, Hallway (Main) – Piping Insulation, Fitting, 65% Chrysotile Asbestos.



Photo 4: Photo of sample AS-11, Hallway (Main) – Piping Insulation, Straight Run, 60% Chrysotile Asbestos.

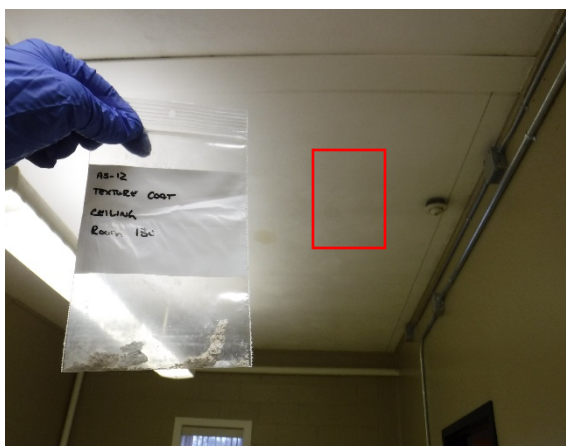


Photo 5: Photo of sample AS-12, Room 130, Ceiling – Texture Coating, 2% Chrysotile Asbestos.



Photo 6: Photo of sample AS-13, Room 130, Floor – Tan Color Vinyl Sheet Flooring, 10.3% Chrysotile Asbestos.

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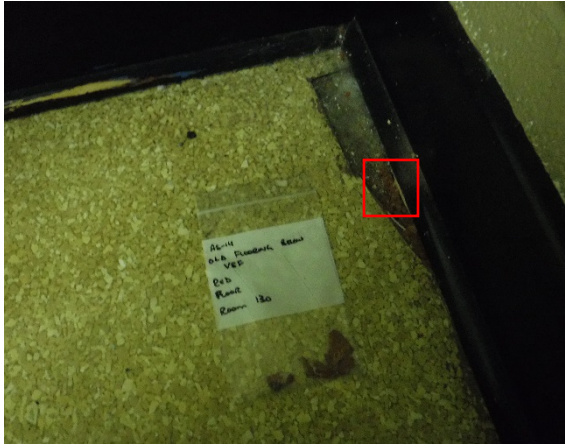


Photo 7: Photo of sample AS-14, Room 130, Floor – Flooring Material below VSF, 6.4% Chrysotile Asbestos.



Photo 8: Photo of sample AS-15, Room 127, Ceiling – Texture Coating, 1% Chrysotile Asbestos.



Photo 9: Photo of sample AS-19, Men's Washroom, Window – Caulking Material, 2% Chrysotile Asbestos.

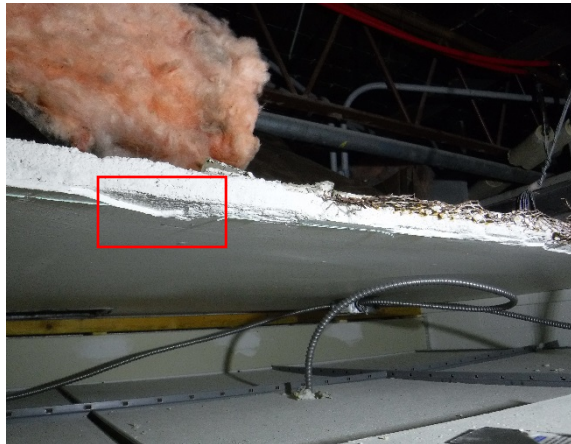


Photo 20: Photo of sample AS-20, Staff Washroom, Ceiling – Texture Coating, 2% Chrysotile Asbestos.

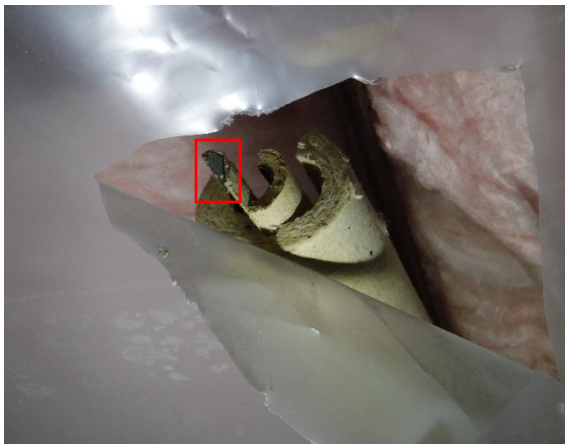


Photo 31: Photo of sample AS-24, Room 118, Ceiling – Piping Insulation, Tar Paper on Straight Run, 8% Chrysotile Asbestos.



Photo 42: Photo of sample AS-26, Room 110 – Piping Insulation, Fitting, 55% Chrysotile Asbestos.

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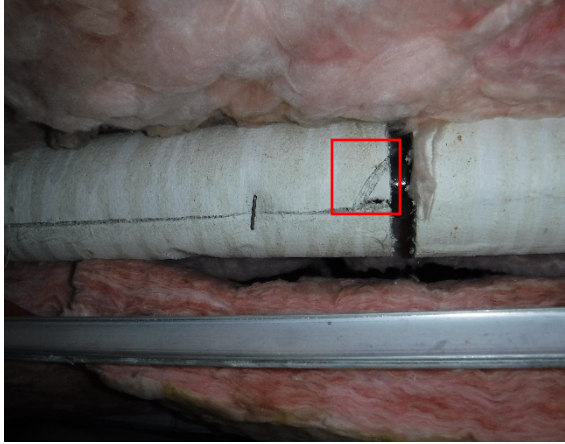


Photo 53: Photo of sample AS-27, Room 110 – Piping Insulation, Straight Run Air-Cell, 65% Chrysotile Asbestos.

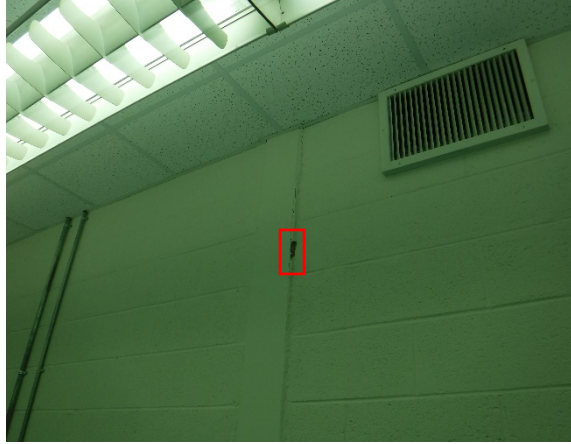


Photo 64: Photo of sample AS-28, Room 110, Wall – Expansion Joint Compound, White/Grey, 0.27% - 1.9% Chrysotile Asbestos.



Photo 75: Photo of sample AS-34, Room 105, Bathroom – Lighting Unit Heat Shield, 45% Chrysotile Asbestos.



Photo 86: Photo of sample EXT-AS-01, Building Exterior – Transite Panel, 13.6% Chrysotile Asbestos.



Photo 97: Photo of sample EXT-AS-02, Building Exterior – Caulking around Transite Panel, 2.2% Chrysotile Asbestos.



Photo 108: Photo of sample EXT-AS-03, Building Exterior, Wall – Expansion Joint Compound, Black/White, 0.76% - 1.2% Chrysotile Asbestos.

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Photo 119: Photo of sample EXT-AS-06, Building Exterior, Wall – Caulking Around Door, 1.2% Chrysotile Asbestos.



Photo 20: Photo of transite panel found in Hallway (SW), Ceiling Cavity – Visually similar to EXT-AS-01, 13.6% Chrysotile Asbestos.



Photo 21: Example Photo of Poor Condition, Unwrapped ACM Piping Insulation, Fitting – Hallway (Main), Ceiling Cavity.



Photo 22: Example Photo of Poor Condition, Unwrapped ACM Piping Insulation, Fitting – Hallway (Main), Ceiling Cavity.



Photo 23: Example Photo of Poor Condition, Damaged ACM Piping Insulation, Straight Run – Room 118, Ceiling Cavity.

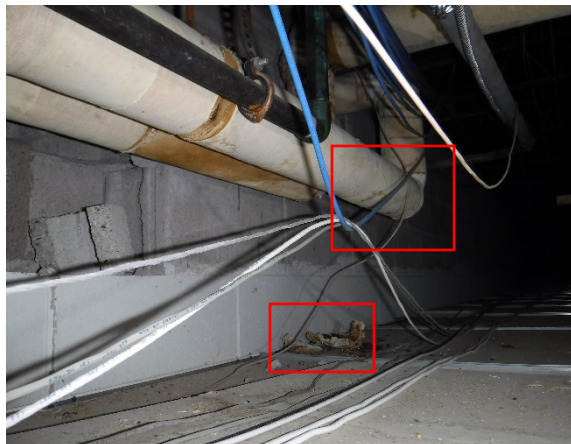


Photo 24: Example Photo of Poor Condition, Damaged ACM Piping Insulation with Debris on Ceiling Tile, Fitting – Hallway (SW), Ceiling Cavity.

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Photo 25: Example Photo of Poor Condition, Damaged ACM Piping Insulation, Fitting – Hallway (SW), Ceiling Cavity.



Photo 26: Example Photo of Poor Condition, ACM Piping Insulation damaged from Actively Leaking Pipe, Straight Run – Hallway (SW), Ceiling Cavity.



Photo 27: Example Photo of Poor Condition, Unwrapped ACM Piping Insulation, Fitting – Room 106, Ceiling Cavity.



Photo 28: Example Photo of Poor Condition, Unwrapped ACM Piping Insulation, Fitting – Room 106, Ceiling Cavity.

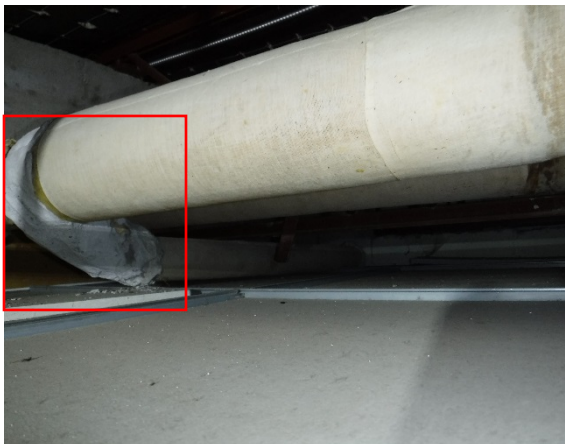


Photo 29: Example Photo of Poor Condition, Unwrapped ACM Piping Insulation, Fitting – Room 104, Ceiling Cavity.



Photo 30: Example Photo of Poor Condition, Unwrapped ACM Piping Insulation, Fitting – Room 104, Ceiling Cavity.

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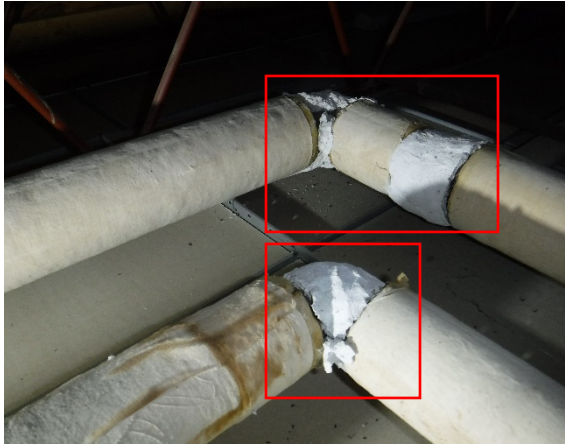


Photo 31: Example Photo of Poor Condition, Unwrapped ACM Piping Insulation, Fitting – Room 100, Ceiling Cavity.



Photo 32: Example Photo of Remaining ACM Piping Insulation – Mechanical Room.



Photo 33: Example Photo of Remaining ACM Piping Insulation – Mechanical Room.



Photo 34: Example Photo of Remaining ACM Piping Insulation – Mechanical Room.

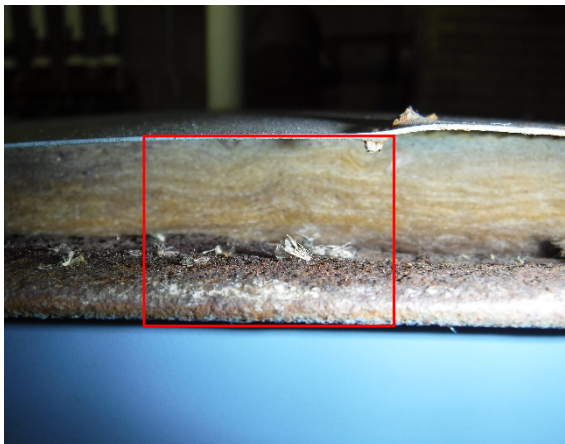


Photo 35: Example Photo of Non-Hazardous Fiberglass Insulation in Boilers – Mechanical Room.



Photo 36: Example Photo of Non-Hazardous Fiberglass Insulation in Boilers – Mechanical Room.

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Photo 37: Example Photo of Wall Profile Investigation – Room 106, Ceiling Cavity.



Photo 38: Example Photo of Wall Profile Investigation – Room 106, Ceiling Cavity.



Photo 39: Example Photo of Wall Profile Investigation – Room 106, Ceiling Cavity.



Photo 40: Example Photo of Wall Profile Investigation – Room 106, Ceiling Cavity.



Photo 41: Example Photo of Wall Profile Investigation – Room 106, Ceiling Cavity.



Photo 42: Example Photo of Wall Profile Investigation – Room 100, Ceiling Cavity.

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Photo 43: Example Photo of Inspected Lighting Ballasts – Hallway (Main), “Non-PCB”.



Photo 44: Example Photo of Inspected Lighting Ballasts – Men’s Washroom (SW), “Non-PCB”.



Photo 45: Example Photo of Mercury Thermostats observed throughout building.



Photo 46: Example Photo of Mercury vial in older style thermostats observed throughout building.

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