

Conseil scolaire Viamonde

Pre-Renovation Designated Substances and Hazardous Materials Survey

**École élémentaire Nouvel Horizon
621 Quaker Road, Welland, Ontario**

March 11, 2024

Pre-Renovation Designated Substances and Hazardous Materials Survey
École élémentaire Nouvel Horizon

Pre-Renovation Designated Substances and Hazardous Materials Survey

École élémentaire Nouvel Horizon
621 Quaker Road, Welland, Ontario

March 11, 2024

Prepared By:

Arcadis Canada Inc.
8133 Warden Avenue
Markham, Ontario
L6G 3N4
Phone: 905 764 9380

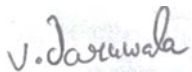
Prepared For:

Conseil scolaire Viamonde
116 Cornelius Parkway
Toronto, Ontario
M6L 2K5
Attention: Majid Bouattane
Project Manager

Our Ref:

Project No. 30213270

Prepared by:



Viraj Daruwala, P. Eng.
Occupational Hygiene Specialist



Jean Daigle
Senior Technical Specialist

This document is intended only for the use of the individual or entity for which it was prepared and may contain information that is privileged, confidential and exempt from disclosure under applicable law. Any dissemination, distribution or copying of this document is strictly prohibited.

Contents

1	Introduction	1-1
1.1	Scope of Work.....	1-1
2	Regulatory Discussion and Methodology	2-1
2.1	Asbestos.....	2-2
2.2	Lead.....	2-3
2.3	Mercury.....	2-3
2.4	Silica.....	2-4
2.5	Vinyl Chloride.....	2-4
2.6	Acrylonitrile.....	2-4
2.7	Other Designated Substances	2-5
2.8	Polychlorinated Biphenyls (PCBs)	2-5
2.9	Ozone-Depleting Substances (ODS) and Other Halocarbons.....	2-6
2.10	Mould	2-7
3	Results and Discussion	3-1
3.1	Asbestos.....	3-1
3.2	Lead.....	3-5
3.3	Mercury.....	3-6
3.4	Silica.....	3-7
3.5	Vinyl Chloride.....	3-7
3.6	Acrylonitrile.....	3-7
3.7	Other Designated Substances	3-7
3.8	Polychlorinated Biphenyls (PCBs)	3-8
3.9	Ozone-Depleting Substances (ODS) and Other Halocarbons.....	3-8
3.10	Mould	3-8
4	Limitations and Service Constraints	4-1

Tables

Table 3-1	Summary of Results of Analyses of Bulk Samples for Asbestos Content.....	3-1
Table 3-2	Summary of Results of Analyses of Bulk Samples for Lead Content.....	3-6

Appendices

Appendix A	Floor Plans
Appendix B	Laboratory Reports
Appendix C	Summary of Asbestos, Lead and Silica Work Classifications

1 Introduction

Arcadis Canada Inc. (Arcadis) was retained by the Conseil scolaire Viamonde (CSV) to conduct a pre-renovation designated substances and hazardous materials survey in designated areas of École élémentaire Nouvel Horiozon located at 621 Quaker Road, Welland, Ontario.

The information in this report is to be provided to all bidders on a project in accordance with the requirements of the *Occupational Health and Safety Act*.

The site is a one storey building constructed in 1956 with additions constructed in 1997 and 2001.

The designated study areas were limited to areas affected by the proposed renovation project and are based on information provided by the CSV.

The designated study areas and construction eras are shown on the floor plans provided in Appendix A.

The survey was undertaken to report on the presence or suspected presence of readily observable designated substances and hazardous materials.

1.1 Scope of Work

The scope of work for our investigation included:

- review of existing information;
- investigation of readily-accessible areas in the designated study areas for the presence of designated substances and hazardous materials used in building construction materials;
- obtaining representative bulk samples of materials suspected of containing asbestos and paint chip samples for lead;
- laboratory analyses of bulk samples for asbestos content;
- laboratory analyses of paint chip samples for lead content; and
- preparation of a report outlining the findings of the investigation.

Mr. Viraj Daruwala of Arcadis visited the site on March 4, 2024, to conduct the designated substances and hazardous materials survey at École élémentaire Nouvel Horizon.

2 Regulatory Discussion and Methodology

Ontario Occupational Health and Safety Act (OHSA)

The Ontario *Occupational Health and Safety Act* (OHSA) sets out, in very general terms, the duties of employers and others to protect workers from health and safety hazards on the job. These duties include, but are not limited to:

- taking all reasonable precautions to protect the health and safety of workers [clause 25(2)(h)];
- ensuring that equipment, materials and protective equipment are maintained in good condition [clause 25(1)(b)];
- providing information, instruction and supervision to protect worker health and safety [clause 25(2)(a)]; and
- acquainting a worker or a person in authority over a worker with any hazard in the work and in the handling, storage, use, disposal and transport of any article, device, equipment or a biological, chemical or physical agent [clause 25(2)(d)].

In addition, Section 30 of the OHSA deals with the presence of designated substances on construction projects. Compliance with the OHSA and its regulations requires action to be taken where there is a designated substance hazard on a construction project.

Section 30 of the OHSA requires the owner of a project to determine if designated substances are present on a project and, if so, to inform all potential contractors as part of the bidding process. Contractors who receive this information are to pass it onto other contractors and subcontractors who are bidding for work on the project.

Regulation for Construction Projects, O.Reg. 213/91

The *Regulation for Construction Projects*, O.Reg. 213/91, applies to all construction projects. The following sections of the regulation would apply to situations where there is the potential for workers to be exposed to designated substances:

- Section 14 (5) A competent person shall perform tests and observations necessary for the detection of hazardous conditions on a project.
- Section 21 (1) A worker shall wear such protective clothing and use such personal protective equipment or devices as are necessary to protect the worker against the hazards to which the worker may be exposed.
- (2) A worker's employer shall require the worker to comply with subsection (1).
- (3) A worker required to wear personal protective clothing or use personal protective equipment or devices shall be adequately instructed and trained in the care and use of the clothing, equipment or device before wearing or using it.

Section 30 Workers who handle or use substances likely to endanger their health shall be provided with washing facilities with clean water, soap and individual towels.

Section 46 (1) A project shall be adequately ventilated by natural or mechanical means,
(a) if a worker may be injured by inhaling a noxious...dust or fume;
(2) If it is not practicable to provide natural or mechanical ventilation in the circumstances described in clause (1)(a), respiratory protective equipment suitable for the hazard shall be provided and be used by the workers.

Section 59 If the dissemination of dust is a hazard to a worker, the dust shall be adequately controlled or each worker who may be exposed to the hazard shall be provided with adequate personal protective equipment.

Regulation for Designated Substances (O.Reg. 490/09)

The *Designated Substance Regulation* (O.Reg. 490/09) specifies occupational exposure limits (OELs) for designated substances and requires an assessment and a control program to ensure compliance with these OELs.

Although, O.Reg. 490/09 and the OELs do not apply to an employer on a construction project, or to their workers at the project, employers still have a responsibility to protect the health of their workers and to comply with the OHSA and other applicable regulations. Section 25(2)(h) of the OHSA requires that employers take "every precaution reasonable in the circumstances for the protection of a worker".

Other regulatory requirements (and guidelines) which apply to control of exposure to designated substances and hazardous materials are referenced in the sections below.

2.1 Asbestos

Asbestos has been widely used in buildings, both in friable applications (materials which can be crumbled, pulverized or powdered by hand pressure, when dry) such as pipe and tank insulation, sprayed-on fireproofing and acoustic texture material and in non-friable manufactured products such as floor tile, gaskets, cement board and so on. The use of asbestos in friable applications was curtailed around the mid-1970s and, as such, most buildings constructed prior to about 1975 contain some form of friable construction material with an asbestos content. The use of asbestos in certain non-friable materials continued beyond the mid-1970s.

Control of exposure to asbestos is governed in Ontario by Regulation 278/05 – *Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations*. Disposal of asbestos waste (friable and non-friable materials) is governed by Ontario Regulation 278/05 and by Ontario Regulation 347, *Waste Management – General*. O.Reg. 278/05 classifies asbestos work operations into three types (Type 1, 2 and 3), as shown in Table C-1 in Appendix C, and specifies procedures to be followed in conducting asbestos abatement work.

2.2 Lead

Lead is a heavy metal that can be found in construction materials such as paints, coatings, mortar, concrete, pipes, solder, packings, sheet metal, caulking, glazed ceramic products and cable splices. Lead has been used historically in exterior and interior paints.

The *Surface Coating Materials Regulations* (SOR/2016-193) made pursuant to the Canada Consumer Product Safety Act states that a surface coating material must not contain more than 90 mg/kg total lead. Health Canada defines a lead-containing surface coating as a paint or similar material that dries to a solid film that contains over 90 mg/kg dry weight of lead.

Information from the United States Occupational Health and Safety Administration (OSHA) suggests that the improper removal of lead paint containing 600 mg/kg lead results in airborne lead concentrations that exceed half of the permissible exposure limit. Lead concentrations as low as 90 mg/kg may present a risk to pregnant women and children⁽¹⁾.

The *National Plumbing Code* allowed lead as an acceptable material for pipes until 1975 and in solder until 1986.

The Ministry of Labour *Guideline, Lead on Construction Projects*, dated April 2011, provides guidance in the measures and procedures that should be followed when handling lead containing materials during construction projects. In the guideline, lead-containing construction operations are classified into three groups - Type 1 (low risk), Type 2 (medium risk) and Type 3 (high risk) based on presumed airborne concentrations of lead, as shown in Appendix C, Table C-2. Any operation that may expose a worker to lead that is not a Type 1, Type 2, or Type 3b operation, is classified as a Type 3a operation.

2.3 Mercury

Mercury has been used in electrical equipment such as alkaline batteries, fluorescent light bulbs (lamps), high intensity discharge (HID) lights (mercury vapour, high pressure sodium and metal halide), “silent switches” and in instruments such as thermometers, manometers and barometers, pressure gauges, float and level switches and flow meters. Mercury-containing lamps, the bulk of which are 1.22 m (four foot) fluorescent lamps contain between 7 and 40 mg of mercury each. Mercury compounds have also been used historically as additives in latex paint to protect the paint from mildew and bacteria during production and storage.

The intentional addition of mercury to Canadian-produced consumer paints for interior use was prohibited in 1991. Mercury may have remained in paints after 1991, however, as a result of impurities in the paint ingredients or cross-contamination due to other manufacturing processes. The *Surface Coating Materials Regulations* made under the *Hazardous Products Act* set a maximum total mercury concentration of 10 mg/kg (0.001 percent) for surface coating materials (including paint). This criterion level applies to the sale and importation of new surface coating materials.

⁽¹⁾ *Lead-Containing Paints and Coatings: Preventing Exposure in the Construction Industry*. WorkSafe BC, 2011.

Mercury-containing thermostats and silent light switches are mercury tilt switches which are small tubes with electrical contacts at one end of the tube. A mercury tilt switch is usually present when no switch is visible. Mercury switches often have the word “TOP” stamped on the upper end of the switch, which is visible after removing the cover plate. If mercury switches are to be removed, the entire switch should be removed and placed into a suitable container for storage and disposal.

Waste light tubes generated during renovations or building demolition and waste mercury from equipment must either be recycled or disposed of in accordance with the requirements of Ont. Reg. 347 - *Waste Management, General*.

Waste mercury in amounts less than 5 kg (per month) are exempt from the generator registration requirements prescribed by O.Reg. 347 – *Waste Management – General*. Waste mercury from mercury switches or gauges should, however, be properly collected and shipped to a recycling facility or disposed of as a hazardous waste. Removal of mercury-containing equipment (e.g., switches, gauges, controls, etc.) should be carried out in a manner which prevents spillage and exposure to workers.

2.4 Silica

Silica exists in several forms of which crystalline silica is of most concern with respect to potential worker exposures. Quartz is the most abundant type of crystalline silica. Some commonly used construction materials containing silica include brick, refractory brick, concrete, concrete block, cement, mortar, rock and stone, sand, fill dirt, topsoil and asphalt containing rock or stone.

The Ministry of Labour *Guideline, Silica on Construction Projects*, dated April 2011, provides guidance in controlling exposure to silica dust during construction activities. In the guideline, silica-containing construction operations are classified into three groups - Type 1 (low risk), Type 2 (medium risk) and Type 3 (high risk) based on presumed airborne concentrations of respirable crystalline silica in the form of cristobalite, tridymite, quartz and tripoli as shown in Appendix C, Table C-3.

2.5 Vinyl Chloride

Vinyl chloride vapours may be released from polyvinyl chloride (PVC) products in the event of heating or as a result of decomposition during fire. PVC is used in numerous materials that may be found in building construction, including, for example, piping, conduits, siding, window and door frames, plastics, garden hoses, flooring and wire and cable protection.

2.6 Acrylonitrile

Acrylonitrile is used to produce nitrile-butadiene rubber, acrylonitrile-butadiene-styrene (ABS) polymers and styrene-acrylonitrile (SAN) polymers. Products made with ABS resins which may be found in buildings include telephones, bottles, packaging, refrigerator door liners, plastic pipe, building panels and shower stalls. Acrylonitrile can be released into the air by combustion of products containing ABS.

2.7 Other Designated Substances

Isocyanates are a class of chemicals used in the manufacture of certain types of plastics, foams, coatings and other products. Isocyanate-based building construction materials may include rigid foam products such as foam-core panels and spray-on insulation and paints, coatings, sealants and adhesives. Isocyanates may be inhaled if they are present in the air in the form of a vapour, a mist or a dust.

Benzene is a clear, highly flammable liquid used mainly in the manufacture of other chemicals. The commercial use of benzene as a solvent has practically been eliminated, however it continues to be used as a solvent and reactant in laboratories.

Arsenic is a heavy metal used historically in pesticides and herbicides. The primary use in building construction materials was its use in the wood preservative chromated copper arsenate (CCA). CCA was used to pressure treat lumber since the 1940's. Pressure-treated wood containing CCA is no longer being produced for use in most residential settings.

Ethylene oxide is a colourless gas at room temperature. It has been used primarily for the manufacture of other chemicals, as a fumigant and fungicide and for sterilization of hospital equipment.

Coke oven emissions are airborne contaminants emitted from coke ovens and are not a potential hazard associated with building construction materials.

2.8 Polychlorinated Biphenyls (PCBs)

The management of equipment classified as waste and containing Polychlorinated Biphenyls (PCBs) at concentrations of 50 parts per million (mg/kg) or greater is regulated by Ontario Regulation 362, *Waste Management – PCBs*. Under this regulation, PCB waste is defined as any waste material containing PCBs in concentrations of 50 mg/kg or greater. Any equipment containing PCBs at or greater than this level, such as transformers, switchgear, light ballasts and capacitors, which is removed from service due to age, failure or as a result of decommissioning, is considered to constitute a PCB waste. Although current federal legislation (effective 1 July 1980) has prohibited the manufacture and sale of new equipment containing PCBs since that time, continued operation of equipment supplied prior to this date and containing PCBs is still permitted. Handling, storage and disposition of such equipment is, however, tightly regulated and must be managed in accordance with provincial and federal government requirements as soon as it is taken out of service or becomes unserviceable.

In most institutional, commercial facilities and in smaller industrial facilities, the primary source of equipment potentially containing PCBs is fluorescent and H.I.D. light ballasts. Small transformers may also be present. In larger industrial facilities, larger transformers and switch gear containing, or potentially containing, PCBs may also be present.

PCBs were also commonly added to industrial paints from the 1940s to the late 1970s. PCBs were added directly to the paint mixture to act as a fungicide, to increase durability and flexibility, to improve resistance to fires and to increase moisture resistance. The use of PCBs in new products was banned in Canada in the 1970s. PCB amended paints were used in speciality industrial/institutional applications prior to the 1970s including government buildings

and equipment such as industrial plants, radar sites, ships as well as non-government rail cars, ships, grain bins, automobiles and appliances.

Removal of in-service equipment containing PCBs, such as fluorescent light ballasts, capacitors and transformers, is subject to the requirements of the federal *PCB Regulations* (discussed below).

The *PCB Regulations*, which came into force on 5 September 2008, were made under the *Canadian Environmental Protection Act, 1999* (CEPA 1999) with the objective of addressing the risks posed by the use, storage and release to the environment of PCBs, and to accelerate their destruction. The *PCB Regulations* set different end-of-use deadlines for equipment containing PCBs at various concentration levels.

The Regulations Amending the PCB Regulations and Repealing the Federal Mobile PCB Treatment and Destruction Regulations were published on 23 April 2014, in the *Canada Gazette, Part II*, and came into force on 1 January 2015. The most notable part of the amendments is the addition of an end-of-use deadline date of 31 December 2025 for specific electrical equipment located at electrical generation, transmission and distribution facilities.

When the PCB materials are classified as waste, jurisdiction falls under the Ontario Ministry of the Environment and Climate Change (MOECC) and O.Reg. 362. All remedial and PCB management work must be carried out under the terms of a Director's Instruction issued by an MOECC District Office (for quantities of PCB fluid greater than 50 litres). The PCB waste stream, regardless of quantity, must be registered with the MOECC, in accordance with O.Reg. 347, *General - Waste Management*. O.Reg. 362 applies to any equipment containing greater than 1 kg of PCBs.

2.9 Ozone-Depleting Substances (ODS) and Other Halocarbons

Ontario Regulation 463/10 – *Ozone Depleting Substances and Other Halocarbons*, applies to the use, handling and disposal of Class 1 ozone-depleting substances, including various chlorofluorocarbons (CFCs), halons and other halocarbons, Class 2 ozone-depleting substances, including various hydrochlorofluorocarbons (HCFCs) and halocarbons, and other halocarbons, including fluorocarbons (FCs) and hydrofluorocarbons (CFCs). The most significant requirements for handling of ozone-depleting substances (ODS) and other Halocarbons, which include, for example, refrigerants used in refrigeration equipment and chillers, include the following:

- certification is required for all persons testing, repairing, filling or emptying equipment containing ODS and other halocarbons;
- the discharge of a Class 1 ODS or anything that contains a Class 1 ODS to the natural environment or within a building is prohibited;
- the making, use of, selling of or transferring of a Class 1 ODS is restricted to certain conditions;
- the discharge of a solvent or sterilant that contains a Class 2 ODS is prohibited;
- the making, use of, selling of or transferring of a solvent or sterilant that contains a Class 2 ODS is restricted to certain conditions;

- fire extinguishing equipment that contains a halon may be discharged to fight fires, except fires for firefighting training purposes;
- portable fire extinguishing equipment that contains a halon may be used or stored if the extinguisher was sold for use for the first time before 1 January 1996;
- records of the servicing and repair of equipment containing ODS and other halocarbons must be prepared and maintained by the owner of the equipment; and
- equipment no longer containing ODS and other halocarbons must be posted with a notice completed by a certified person.

Ontario Regulation 347, *General – Waste Management*, has also been amended to provide for more strict control of CFCs. The requirements under the amended regulation apply primarily to the keeping of records for the receipt or recycling of CFC waste.

2.10 Mould

Moulds are forms of fungi that are found everywhere both indoors and outdoors all year round. Outdoors, moulds live in the soil, on plants and on dead and decaying matter. More than 1000 different kinds of indoor moulds have been found in buildings. Moulds spread and reproduce by making spores, which are all small and light-weight, able to travel through air, capable of resisting dry, adverse environmental conditions, and hence capable of surviving a long time. Moulds need moisture and nutrients to grow and their growth is stimulated by warm, damp and humid conditions.

Control of exposure to mould is required under Section 25(2)(h) of the Ontario *Occupational Health and Safety Act*, which states that employers shall take every precaution reasonable in the circumstances for the protection of workers. Recommended work practices are outlined in the following documents:

- *Mould Guidelines for the Canadian Construction Industry*. Standard Construction Document CCA 82 2004. Canadian Construction Association.
- *Mould Abatement Guidelines*. Environmental Abatement Council of Ontario. Edition 3. 2015.

3 Results and Discussion

3.1 Asbestos

Arcadis reviewed a report prepared by Arcadis for the CSV titled “*Updated Survey of Asbestos-Containing Materials, École élémentaire Nouvel Horizon, Welland, Ontario*” dated July 2009. Information and bulk sample analysis results obtained from this existing report was utilized by Arcadis during the course of our investigation and in the preparation of this report.

During the course of our site investigation, additional representative bulk samples of material were collected by Arcadis staff. The samples were forwarded to EMSL Canada Inc. for asbestos analyses. Results of bulk sample analysis for asbestos content are provided in Table 3.1. Table 3.1 also include sample results obtained from the existing report and include results that are outside of the designated study areas, which are provided for references purposes only. Laboratory reports are provided in Appendix B. Locations of accessible asbestos-containing materials are shown on the floor plan provided in Appendix A.

Table 3-1 Summary of Results of Analyses of Bulk Samples for Asbestos Content

École élémentaire Nouvel Horizon

Sample No.	Location	Description	Asbestos Content
A1-A	123	Concrete block filler paint (2001 era)	None detected
A1-B	125	Concrete block filler paint (2001 era)	None detected
A1-C	123	Concrete block filler paint (2001 era)	None detected
A2-A	125	Joint compound on gypsum board wall (2001 era)	None detected
A2-B	124	Joint compound on gypsum board wall (2001 era)	None detected
A2-C	123	Joint compound on gypsum board wall (2001 era)	None detected
A3-A	123	Carpet mastic (yellow colour)	None detected
A3-A	123	Floor levelling compound (grey colour)	None detected
A3-B	123	Carpet mastic (yellow colour)	None detected
A3-B	123	Floor levelling compound (grey colour)	None detected
A3-C	123	Carpet mastic (yellow colour)	None detected
A3-C	123	Floor levelling compound (grey colour)	None detected
A4-A	125	Exterior brick mortar (2001 era)	None detected
A4-B	125	Exterior brick mortar (2001 era)	None detected
A4-C	123	Exterior brick mortar (2001 era)	None detected
A5-A	C106	Brown door caulking (2001 era)	None detected
A5B	C106	Brown door caulking (2001 era)	None detected
A5-C	130	Brown door caulking (2001 era)	None detected
A6-A	C106	White door caulking (2001 era)	None detected
A6-B	C106	White door caulking (2001 era)	None detected
A6-C	130	White door caulking (2001 era)	None detected
A7-A	118	12" vinyl floor tiles (grey with purple flecks)	None detected (TEM)
A7-A	118	Vinyl floor tile mastic (black)	None detected

Pre-Renovation Designated Substances and Hazardous Materials Survey
 École élémentaire Nouvel Horizon

Sample No.	Location	Description	Asbestos Content
A7-B	118	12" vinyl floor tiles (grey with purple flecks)	None detected
A7-B	118	Vinyl floor tile mastic (black)	None detected
A7-C	118	12" vinyl floor tiles (grey with purple flecks)	None detected
A7-C	118	Vinyl floor tile mastic (black)	None detected
A8-A	118C	Brown vinyl baseboard	None detected (TEM)
A8-A	118C	Vinyl baseboard mastic (yellow colour)	None detected
A8-B	118C	Brown baseboard and mastic	None detected
A8-B	118C	Vinyl baseboard mastic (yellow colour)	None detected
A8-C	118C	Brown baseboard and mastic	None detected
A8-C	118C	Vinyl baseboard mastic (yellow colour)	None detected
A9-A	129	Concrete block filler paint (1997 era)	None detected
A9-B	129	Concrete block filler paint (1997 era)	None detected
A9-C	129	Concrete block filler paint (1997 era)	None detected
A10-A	107	Grout between 6" white ceramic wall tiles (white colour)	None detected
A10-B	107	Grout between 6" white ceramic wall tiles (white colour)	None detected
A10-C	107	Grout between 6" white ceramic wall tiles (white colour)	None detected
A11-A	107	Mastic under 6" white ceramic wall tiles (yellow colour)	None detected
A11-B	107	Mastic under 6" white ceramic wall tiles (yellow colour)	None detected
A11-C	107	Mastic under 6" white ceramic wall tiles (yellow colour)	None detected
A12-A	C102	Concrete block mortar (2001 era)	None detected
A12-B	C102	Concrete block mortar (2001 era)	None detected
A12-C	C102	Concrete block mortar (2001 era)	None detected
A13-A	130	Concrete block mortar (1997 era)	None detected
A13-B	C104	Concrete block mortar (1997 era)	None detected
A13-C	C106	Concrete block mortar (1997 era)	None detected
A14-A	129	Exterior brick mortar (1997 era)	None detected
A14-B	111	Exterior brick mortar (1997 era)	None detected
A14-C	114	Exterior brick mortar (1997 era)	None detected
A15-A	123	2'x4' ceiling tiles with pinholes and fissures	None detected
A15-A	130	2'x4' ceiling tiles with pinholes and fissures	None detected
A15-A	111	2'x4' ceiling tiles with pinholes and fissures	None detected
A16-A	116	Joint compound on gypsum board wall (1997 era)	None detected
A16-B	116	Joint compound on gypsum board wall (1997 era)	None detected
A16-C	116	Joint compound on gypsum board wall (1997 era)	None detected
A17-A	111	Brown vinyl baseboard (1997 era)	None detected (PLM) None detected (TEM)
A17-A	111	Vinyl baseboard mastic (yellow colour)	None detected

Pre-Renovation Designated Substances and Hazardous Materials Survey
 École élémentaire Nouvel Horizon

Sample No.	Location	Description	Asbestos Content
A17-B	111	Brown baseboard (1997 era)	None detected
A17-B	111	Vinyl baseboard mastic (yellow colour)	None detected
A17-C	111A	Brown baseboard (1997 era)	None detected
A17-C	111A	Vinyl baseboard mastic (yellow colour)	None detected
A18-A	S03	Green door caulking	None detected
A18-B	S03	Green door caulking	None detected
A18-C	S03	Green door caulking	None detected
A19-A	104	Exterior brick mortar (1956 era)	None detected
A19-B	104	Exterior brick mortar (1956 era)	None detected
A19-C	101	Exterior brick mortar (1956 era)	None detected
106-CT-1A	106	12"x12" ceiling tiles above T-bar ceiling	None detected ⁽¹⁾
106-CT-1B	Room 106A	12" x 12" ceiling tile - above T-bar	None detected ⁽¹⁾
101-CT-2A	Room 101	2' x 4' ceiling tile - fissure on 4' - red back	None detected ⁽¹⁾
101-CT-2B	Room 101	2' x 4' ceiling tile - fissure on 4' - red back	None detected ⁽¹⁾
101-CT-2C	Room 101	2' x 4' ceiling tile - fissure on 4' - red back	None detected ⁽¹⁾
106-FT-1A	Room 106	12" x 12" floor tile - beige with beige fleck - new look	None detected ⁽¹⁾
106-FT-1B	Room 106	12" x 12" floor tile - beige with beige fleck - new look	None detected ⁽¹⁾
106A-SF-2A	Room 106	Vinyl sheet flooring - being terrazzo look - paper back	None detected ⁽¹⁾
106A-SF-2B	Room 106	Vinyl sheet flooring - being terrazzo look - paper back	None detected ⁽¹⁾
106A-SF-2C	Room 106	Vinyl sheet flooring - being terrazzo look - paper back	None detected ⁽¹⁾
103-FT-3A	Room 103	12" x 12" floor tile – beige with directional brown fissure – old look	None detected ⁽¹⁾
103-FT-3B	Room 103	12" x 12" floor tile – beige with directional brown fissure – old look	None detected ⁽¹⁾
103-FT-3C	Room 103	12" x 12" floor tile – beige with directional brown fissure – old look	None detected ⁽¹⁾
102-FT-4A	Room 102	12" x 12" floor tile - white with blue fleck	None detected ⁽¹⁾
102-FT-4B	Room 102	12" x 12" floor tile - white with blue fleck	None detected ⁽¹⁾
102-FT-4C	Room 102	12" x 12" floor tile - white with blue fleck	None detected ⁽¹⁾
106-PL-1A	Room 106	Plaster on masonry walls	None detected ⁽¹⁾
102A-PL-1B	Room 102A	Plaster on masonry walls	None detected ⁽¹⁾
C101-PL-1C	Room C101	Plaster on masonry walls	None detected ⁽¹⁾
C101-PL-1D	Room C101	Plaster on masonry walls	None detected ⁽¹⁾
110-PL-1E	Room 110	Plaster on masonry walls	None detected ⁽¹⁾
108A-PLTX-2A	Room 108A	Textured plaster on ceiling	None detected ⁽¹⁾

Pre-Renovation Designated Substances and Hazardous Materials Survey
 École élémentaire Nouvel Horizon

Sample No.	Location	Description	Asbestos Content
108A- PLTX-2B	Room 108A	Textured plaster on ceiling	None detected ⁽¹⁾
108A- PLTX-2C	Room 108A	Textured plaster on ceiling	None detected ⁽¹⁾
106-DW-1A	Room 106	Drywall joint compound on walls above windows	None detected ⁽¹⁾
105-DW-1B	Room 105	Drywall joint compound on walls above windows	None detected ⁽¹⁾
103-DW-1C	Room 103	Drywall joint compound on walls above windows	None detected ⁽¹⁾
106-TH-1A	Room 106	Cement board behind radiator cabinets	3% amosite, 18.75% chrysotile⁽¹⁾
S02-TH-2A	Room S02	2' x 2' cement board on soffit	3.5% chrysotile⁽¹⁾
S02-TC-3A	Room S02	Texture coat on exterior door frame	None detected ⁽¹⁾
S 02-TC-3B	Room S02	Texture coat on exterior door frame	None detected ⁽¹⁾
S02-TC-3C	Room S02	Texture coat on exterior door frame	None detected ⁽¹⁾
EXT-TH-4A	Exterior	Caulking in between exterior concrete wall panels - grey and mauve colour	<0.25% chrysotile ^(1, 2)
EXT-TH-4B	Exterior	Caulking in between exterior concrete wall panels - grey and mauve colour	None detected ⁽¹⁾
EXT-TH-4C	Exterior	Caulking in between exterior concrete wall panels - grey and mauve colour	None detected ⁽¹⁾
103-Lino-5A	Room 103	Linoleum on shelf units	None detected ⁽¹⁾
103- Lino-5B	Room 103	Linoleum on shelf units	None detected ⁽¹⁾
106- Lino-5C	Room 106	Linoleum on shelf units	None detected ⁽¹⁾
2119-02	?	12" x 12" ceiling tiles - dot pattern	None detected ⁽¹⁾
2119-03	Room 106	12" x 12" floor tile - beige	None detected ⁽¹⁾

NOTES:

(1) Sample results derived from a report prepared by Arcadis for the CSV titled "Updated Survey of Asbestos-Containing Materials École élémentaire Nouvel Horizon, Welland, Ontario" dated July 2009.

(2) "Asbestos-containing material" is defined as material that contains 0.5% or more asbestos by dry weight.

Bulk samples were analyzed by Polarized Light Microscopy (PLM) analysis, except where "TEM" is noted, in which case Transmission Electron Microscopy analysis was also performed.

< = less than.

Chrysotile = Chrysotile asbestos.

Amosite = Amosite asbestos.

Determination of the locations of asbestos-containing material was made based on the review of existing information, results of bulk sample analysis, visual observations and physical characteristics of the applications as well as our knowledge of the uses of asbestos in building materials.

Based on review of existing information, visual observations, and results of laboratory analyses of samples collected by Arcadis Canada Inc., no accessible asbestos-containing materials were found to be present in the designated study areas except for the following assumed asbestos-containing materials:

- Grout and adhesives associated with ceramic tile baseboards located in Corridor C01 adjacent to Entrance S03 and Corridor C06 adjacent to Entrance S07 may contain asbestos but were not sampled to limit damage to the ceramic tile baseboards. It appears that these ceramic tile baseboards should not be affected by the proposed door replacement work however, if they are disturbed by renovation activities, confirmatory testing of these materials should be undertaken at the time of renovations, or the materials can be assumed to contain asbestos.

During the course of our site investigation, Arcadis staff accessed cavities in exterior concrete block walls in several locations throughout the school all three construction eras. Materials suspected of containing asbestos (e.g. vermiculite block-fill insulation) was not observed in all block wall cavities accessed.

Glass fibre insulation is readily visually distinguishable (typically yellow in colour) from asbestos-containing insulation materials and was, therefore, not tested for asbestos content.

Asbestos may also be present in materials which were not sampled during the course of the asbestos survey carried out by Arcadis, including, but not limited to, areas outside the designated study areas, which include components of electrical equipment (e.g. electric wiring insulation, non-metallic sheathed cable, electrical panel partitions, arc chutes, high-grade electrical paper, etc.), threaded pipe sealants, mortar, concrete, asphaltic pavement. Confirmatory testing of any such materials could be undertaken as the need arises (i.e., at the time of renovations, modifications or demolition) or the materials can be assumed to contain asbestos based on findings in adjacent areas.

If any materials which may contain asbestos and which were not tested during the course of the designated substances and hazardous materials survey are discovered during any construction activities, the work shall not proceed until such time as the required notifications have been made and an appropriate course of action is determined.

3.2 Lead

During the course of our site investigation, bulk samples of representative paints were collected by Arcadis staff. The samples were forwarded to EMSL for lead analyses. Results of bulk sample analysis for lead content are provided in Table 3.2. The laboratory report is provided in Appendix B.

Results of bulk sample analysis of paint samples for lead content are provided in Table 3-2.

Table 3-2 Summary of Results of Analyses of Bulk Samples for Lead Content

École élémentaire Nouvel Horizon

Sample No.	Sample Location	Sample Description	Lead Content
P-1	Room 123	Beige paint on block wall	<80 ppm

NOTE:

< = less than.

ppm = part per million

1 ppm = 1 mg/Kg

Lead was not detected at levels above 90 mg/kg (Surface Coating Materials Regulations criterion value) in the representative paint sample analyzed.

Lead may also be present in lead pipe, mortar, glazing on ceramic tiles, in the solder on the seals of bell joints of any cast iron drainpipe and in the solder on the sweated-on joints between copper pipe and fittings.

The Ministry of Labour *Guideline – Lead on Construction Projects*, dated April 2011, provides guidance in the measures and procedures that should be followed when handling lead containing materials during construction projects. In the guideline, lead-containing construction operations are classified into three groups - Type 1 (low risk), Type 2 (medium risk) and Type 3 (high risk) based on presumed airborne concentrations of lead, as shown in Appendix C, Table C-2. Any operation that may expose a worker to lead that is not a Type 1, Type 2, or Type 3b operation, is classified as a Type 3a operation.

In addition, the *EACO Lead Abatement Guidelines, 2014 — Edition 1*, Environmental Abatement Council of Ontario, also provides guidance and recommended work practices.

3.3 Mercury

During the course of our site investigation, fluorescent lights were observed in various locations throughout the designated study areas. A total of eighteen (18) HID lamps or Metal Halide Lamps were observed in Rooms 129 and 1129A. Mercury should be assumed to be present as a gas in all fluorescent light tubes and HID lamps and in all paint applications, albeit at low levels. The fluorescent light tubes and HID lamps should be recycled for mercury, if the lights are removed.

Proper procedures for removing and handling mercury-containing fluorescent light tubes typically involve:

- ensuring that electrical power to light fixtures has been disconnected and locked out;
- taking all necessary precautions to ensure that fluorescent light tubes and lamps are removed in a manner that prevents breakage; and
- transporting fluorescent lamp tubes and lamps to a licensed processing location for separation and recovery of mercury.

The measures and procedures outlined in the MOL *Guideline, Lead on Construction Projects* for control of potential exposure to lead in paint during construction activities will also serve to control potential exposure to any mercury in paint.

3.4 Silica

Materials observed in the designated study areas which should be considered to contain silica included, gypsum board, gypsum board joint compounds, plaster, brick, concrete block, concrete, mortar, ceramic tiles, floor levelling compounds, terrazzo flooring and vinyl floor tiles.

Silica can also be assumed to be present in any gravel ballast on roofs and will also be found in asphalt roofing materials if rock or stone are present in the asphalt.

The Ministry of Labour *Guideline, Silica on Construction Projects*, April 2011, provides guidance in controlling exposure to silica dust during construction activities. In the guideline, silica-containing construction operations are classified into three groups - Type 1 (low risk), Type 2 (medium risk) and Type 3 (high risk) based on presumed airborne concentrations of silica, as shown in Appendix C, Table C-3.

Additional precautionary measures should also be implemented for certain types of materials (e.g., plaster and texture coat materials, including non-asbestos applications, concrete block, etc.). For minor disturbances such as drilling, a HEPA-filtered attachment should be used. For removal of more than a minor amount of material, enclosures should be constructed for dust control and separation of the work area from adjacent areas.

3.5 Vinyl Chloride

As mentioned in Section 2.5 above, vinyl chloride would only be a potential exposure concern in the event of combustion of PVC products.

3.6 Acrylonitrile

As mentioned in Section 2.6 above, acrylonitrile would only be a potential exposure concern in the event of combustion of ABS products.

3.7 Other Designated Substances

No other designated substances (benzene, isocyanates, arsenic, ethylene oxide and coke oven emissions) were observed to be present in the designated study areas, and none would be expected to be encountered in any building materials in a form that would represent an exposure concern. Arsenic may be present at low levels in paint applications. The measures and procedures outlined in the MOL *Guideline, Lead on Construction Projects* for control of potential exposure to lead in paint during construction activities will also serve to control potential exposure to any arsenic (or mercury) in paint.

3.8 Polychlorinated Biphenyls (PCBs)

Fluorescent lights were observed in various locations in the designated study areas during the course of our site investigations. Light ballasts, such as those associated with the type of fluorescent lights (T8s) observed in the designated study areas, are usually an electronic type which do not contain PCBs, however, this would be confirmed by an electrician at the time of dismantling of the lights.

A total of eighteen (18) HID light fixtures were observed in Rooms 129 and 129A in the designated study areas. The CSV provided Arcadis with documentation associated with the type of HID light fixtures located in Rooms 129 and 129A. The light fixtures are *Electronic High Bay Fixtures* manufactured by *ROMlight International Inc.* and review of the technical documentation indicated that ballasts associated with these light fixtures are an electronic type which do not contain PCBs.

3.9 Ozone-Depleting Substances (ODS) and Other Halocarbons

Equipment with refrigerants that may be ODS, that may be affected by the proposed renovation work were not observed during course of the site investigation.

If any ODS-containing equipment is to be removed then they must be handled in the following manner:

- any equipment designated for disposal as scrap must be drained of its contents by a licensed technician and equipped with a label indicating that the equipment no longer contains any refrigerant. The specific requirements for information on the label, as specified in the regulation, must be adhered to;
- equipment designated for relocation to another facility owned by Conseil scolaire Viamonde must be drained and labelled, as above; and
- any equipment that is drained to facilitate relocation to another facility owned by Conseil scolaire Viamonde must be tested for leaks prior to re-filling. The equipment must be re-filled within six months of the leak test.

3.10 Mould

The investigation for mould included a visual inspection of readily-accessible surfaces throughout the designated study areas to determine if any mould was evident. The inspection of mould did not include intrusive inspections of wall cavities. Readily evident suspect mould was not observed in the designated study areas during the course of the site investigation. During renovations or interior demolition work, any mould-impacted materials uncovered/discovered should be remediated following the measures and procedures outlined in the *Canadian Construction Association Standard Construction Document CCA-82 2004 - Mould Guidelines for the Canadian Construction Industry*.

4 Limitations and Service Constraints

The opinions, conclusions and recommendations presented in this report are limited to the information obtained during the performance of the specific scope of service identified in the report. To the extent that Arcadis relied upon any information prepared by other parties not under direct contract to Arcadis, no representation as to the accuracy or completeness of such information is made. This report is an instrument of professional service and the services described in the report were performed in accordance with generally accepted standards and level of skill and care ordinarily exercised by members of the profession working under similar conditions including comparable budgetary and schedule constraints. No warranty, guarantee or certification express or implied, is intended or given with respect to Arcadis' services, opinions, conclusions or recommendations.

Arcadis' observations, the results of any testing and Arcadis' opinions, conclusions and recommendations apply solely to conditions existing at the specific times when and specific locations where Arcadis' investigative work was performed. Arcadis affirms that data gathered and presented in this report was collected in an appropriate manner in accordance with generally accepted methods and practices. Arcadis cannot be responsible for decisions made by our client solely on the basis of economic factors. Observation and testing activities such as those conducted by Arcadis are inherently limited and do not represent a conclusive or complete characterization. Arcadis analyzed only the substances, conditions and locations described in the report at the time indicated. Conditions in other parts of the project site, building or area may vary from conditions at the specific locations where observations were made and where testing was performed by Arcadis. Additionally, other building material hazards which were not identified by Arcadis, may also be present un-accessed areas and in walls, ceilings, cavities, and floors.

This report is expressly for the sole and exclusive use of the Client for whom this report was originally prepared and for the particular purpose outlined in the report. Reuse of this report or any portion thereof for other than its intended purpose, or if modified, or if used by third parties, shall be at the user's sole risk. This report must be presented in its entirety.

The survey did not include for identification of asbestos in process materials, equipment (including electrical equipment and wiring), furniture (e.g., chairs, tabletops, chalkboards, etc.), nor material outside of the building (e.g., asphaltic pavement).

This report is not intended to be used as a scope of work or technical specification for remediation of designated substances or hazardous materials.

Appendix A

Floor Plans



LEGEND

- 101 FUNCTIONAL SPACE
- CP ASBESTOS CEMENT PRODUCT
- STUDY AREA



NOTES:

REVISIONS:

No.	Date:	By:	Revisions

REFERENCE:

1.



Conseil scolaire Viamonde

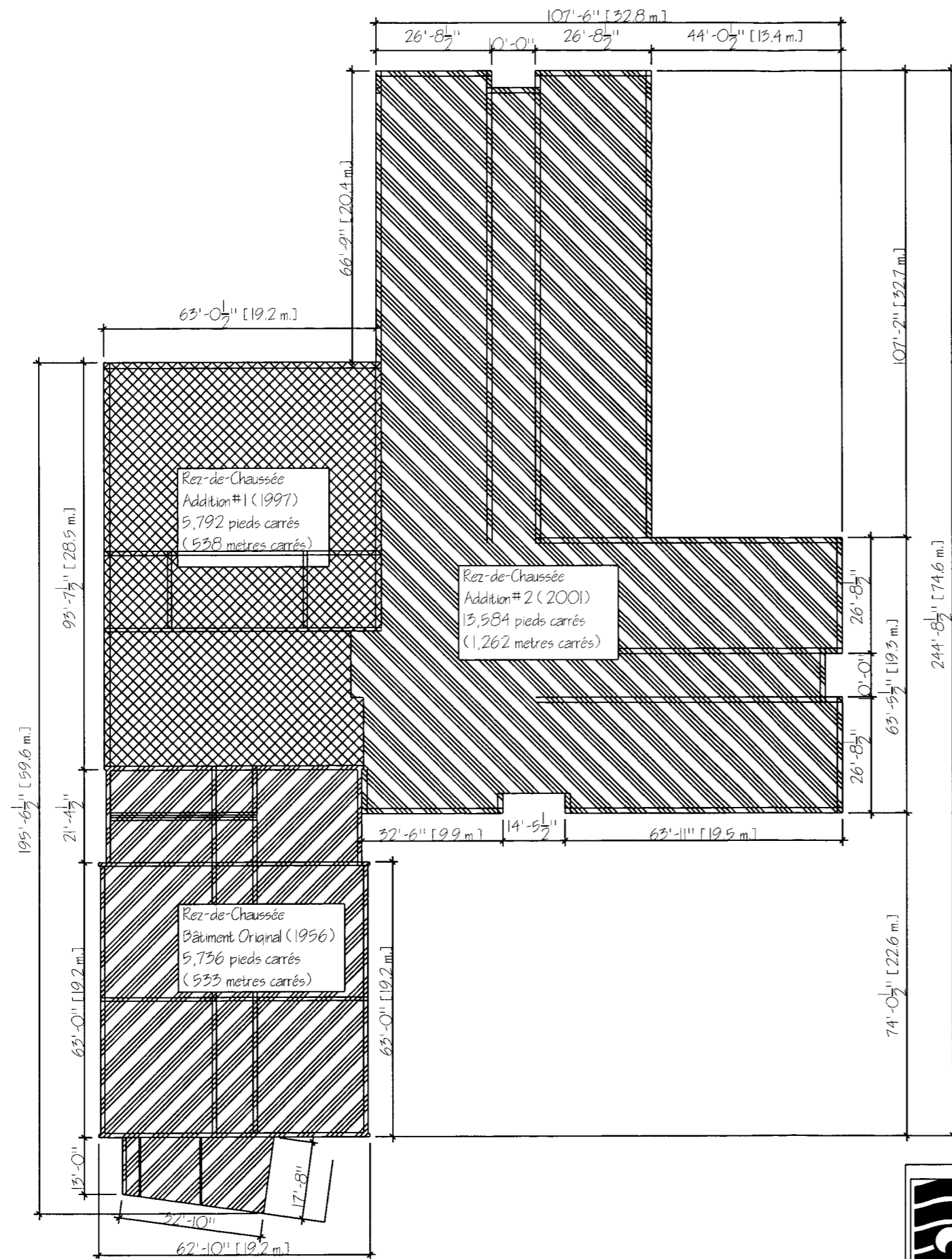
PRE-RENOVATION DESIGNATED SUBSTANCES AND HAZARDOUS MATERIALS SURVEY

LOCATIONS OF ASBESTOS-CONTAINING MATERIALS

ÉCOLE ÉLÉMENTAIRE NOUVEL HORIZON
 621 CHEMIN QUAKER, WELLAND, ONTARIO

GROUND FLOOR PLAN

Drawn By: BR	Approved By: V.D	Project No: 30213270
Date: MARCH 2024	Scale: N.T.S	Drawing No: 30213270-1



Rez-de-Chaussée
Addition #1 (1997)
5,792 pieds carrés
(538 metres carrés)

Rez-de-Chaussée
Addition #2 (2001)
3,584 pieds carrés
(1,262 metres carrés)

Rez-de-Chaussée
Bâtiment Original (1956)
5,736 pieds carrés
(533 metres carrés)

REZ-DE-CHAUSSÉE

Superficie brute totale : 25,112 pieds carrés (2,333 metres carrés).

Total superficie plancher Bâtiment Original (1956) : 5,736 pieds carrés (533 metres carrés)

Total superficie plancher Addition #1 (1997) : 5,792 pieds carrés (538 metres carrés)

Total superficie plancher Addition #2 (2001) : 3,584 pieds carrés (1,262 metres carrés)

SUPERFICIE TOTALE ÉDIFICE: 25,112 pieds carrés (2,333 metres carrés)



ÉDIFICE:	École NOUVEL HORIZON; plan REZ-DE-CHAUSSÉE		
projet:	dossier Recapp 2003		
nom du dessin:	plan superficies et additions	échelle:	1" = 30' (1/360)
chemin d'accès:	X:/DanP/AutoCAD/plans d'écoles/22. Nouvel Horizon superficies		
CONSEIL SCOLAIRE de DISTRICT du CENTRE-SUD-OUEST 116 Cornelius Parkway, Toronto (Ontario) M6L 2K5 Secteur d'immobilisation de l'entretien et de la planification; SIEP		dessiné par: DP	dessin no.:
		date: avril 2003	

Appendix B

Laboratory Reports



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 552403498
Customer ID: 55DCSL97
Customer PO: 30213270
Project ID:

Attn: Viraj Daruwala
ARCADIS Canada Inc.
121 Granton Drive
Unit 12
Richmond Hill, ON L4B 3N4
Phone: (905) 882-5984
Fax: (905) 882-8962
Collected:
Received: 3/07/2024
Analyzed: 3/11/2024
Proj: Nouvel Horizon - 30213270

Summary Test Report for Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05

Client Sample ID: A1-A **Lab Sample ID:** 552403498-0001

Sample Description: Block filler paint (2001 era)/123

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray/White	0.0%	100.0%	None Detected	

Client Sample ID: A1-B-Block Fill **Lab Sample ID:** 552403498-0002

Sample Description: Block filler paint (2001 era)/125

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	White	0.0%	100.0%	None Detected	

Client Sample ID: A1-B-Mortar **Lab Sample ID:** 552403498-0002A

Sample Description: Block filler paint (2001 era)/125

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A1-C **Lab Sample ID:** 552403498-0003

Sample Description: Block filler paint (2001 era)/123

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray/White	0.0%	100.0%	None Detected	

Client Sample ID: A2-A **Lab Sample ID:** 552403498-0004

Sample Description: Joint compound (2001 era)/125

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	White	0.0%	100.0%	None Detected	

Client Sample ID: A2-B **Lab Sample ID:** 552403498-0005

Sample Description: Joint compound (2001 era)/124

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	White	0.0%	100.0%	None Detected	

Client Sample ID: A2-C **Lab Sample ID:** 552403498-0006

Sample Description: Joint compound (2001 era)/123

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	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 552403498
Customer ID: 55DCSL97
Customer PO: 30213270
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05

Client Sample ID: A3-A-Mastic **Lab Sample ID:** 552403498-0007

Sample Description: Levelling compound and mastic/123

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: A3-A-Mortar **Lab Sample ID:** 552403498-0007A

Sample Description: Levelling compound and mastic/123

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A3-B-Mastic **Lab Sample ID:** 552403498-0008

Sample Description: Levelling compound and mastic/123

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: A3-B-Mortar **Lab Sample ID:** 552403498-0008A

Sample Description: Levelling compound and mastic/123

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A3-C-Mastic **Lab Sample ID:** 552403498-0009

Sample Description: Levelling compound and mastic/111

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: A3-C-Mortar **Lab Sample ID:** 552403498-0009A

Sample Description: Levelling compound and mastic/111

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A4-A **Lab Sample ID:** 552403498-0010

Sample Description: Exterior brick mortar (2001 era)/125

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A4-B **Lab Sample ID:** 552403498-0011

Sample Description: Exterior brick mortar (2001 era)/125

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	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 552403498
Customer ID: 55DCSL97
Customer PO: 30213270
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05

Client Sample ID: A4-C **Lab Sample ID:** 552403498-0012

Sample Description: Exterior brick mortar (2001 era)/123

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A5-A **Lab Sample ID:** 552403498-0013

Sample Description: Brown door caulking (2001 era)/C106

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Brown	0.0%	100.0%	None Detected	

Client Sample ID: A5B **Lab Sample ID:** 552403498-0014

Sample Description: Brown door caulking (2001 era)/C106

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Brown	0.0%	100.0%	None Detected	

Client Sample ID: A5-C **Lab Sample ID:** 552403498-0015

Sample Description: Brown door caulking (2001 era)/130

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Brown	0.0%	100.0%	None Detected	

Client Sample ID: A6-A **Lab Sample ID:** 552403498-0016

Sample Description: White door caulking (2001 era)/C106

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	White	0.0%	100.0%	None Detected	

Client Sample ID: A6-B **Lab Sample ID:** 552403498-0017

Sample Description: White door caulking (2001 era)/C106

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	White	0.0%	100.0%	None Detected	

Client Sample ID: A6-C **Lab Sample ID:** 552403498-0018

Sample Description: White door caulking (2001 era)/130

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	White	0.0%	100.0%	None Detected	

Client Sample ID: A7-A-Floor Tile **Lab Sample ID:** 552403498-0019

Sample Description: 12" vinyl floor tiles (grey with purple flecks)/118

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	3/11/2024	Gray	0.0%	100%	None Detected	
TEM Grav. Reduction	3/11/2024	Gray	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 552403498
Customer ID: 55DCSL97
Customer PO: 30213270
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05

Client Sample ID: A7-A-Mastic **Lab Sample ID:** 552403498-0019A

Sample Description: 12" vinyl floor tiles (grey with purple flecks)/118

TEST	Analyzed		Non-Asbestos		Asbestos	Comment
	Date	Color	Fibrous	Non-Fibrous		
PLM	3/11/2024	Black	0.0%	100.0%	None Detected	

Client Sample ID: A7-B-Floor Tile **Lab Sample ID:** 552403498-0020

Sample Description: 12" vinyl floor tiles (grey with purple flecks)/118

TEST	Analyzed		Non-Asbestos		Asbestos	Comment
	Date	Color	Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray/Beige	0.0%	100.0%	None Detected	

Client Sample ID: A7-B-Mastic **Lab Sample ID:** 552403498-0020A

Sample Description: 12" vinyl floor tiles (grey with purple flecks)/118

TEST	Analyzed		Non-Asbestos		Asbestos	Comment
	Date	Color	Fibrous	Non-Fibrous		
PLM	3/11/2024	Black	0.0%	100.0%	None Detected	

Client Sample ID: A7-C-Floor Tile **Lab Sample ID:** 552403498-0021

Sample Description: 12" vinyl floor tiles (grey with purple flecks)/118

TEST	Analyzed		Non-Asbestos		Asbestos	Comment
	Date	Color	Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray/Beige	0.0%	100.0%	None Detected	

Client Sample ID: A7-C-Mastic **Lab Sample ID:** 552403498-0021A

Sample Description: 12" vinyl floor tiles (grey with purple flecks)/118

TEST	Analyzed		Non-Asbestos		Asbestos	Comment
	Date	Color	Fibrous	Non-Fibrous		
PLM	3/11/2024	Black	0.0%	100.0%	None Detected	

Client Sample ID: A8-A-Baseboard **Lab Sample ID:** 552403498-0022

Sample Description: Brown baseboard and mastic/118C

TEST	Analyzed		Non-Asbestos		Asbestos	Comment
	Date	Color	Fibrous	Non-Fibrous		
PLM Grav. Reduction	3/11/2024	Yellow/Beige	0.0%	100%	None Detected	
TEM Grav. Reduction	3/11/2024	Yellow/Beige	0.0%	100.0%	None Detected	

Client Sample ID: A8-A-Mastic **Lab Sample ID:** 552403498-0022A

Sample Description: Brown baseboard and mastic/118C

TEST	Analyzed		Non-Asbestos		Asbestos	Comment
	Date	Color	Fibrous	Non-Fibrous		
PLM	3/11/2024	Beige	0.0%	100.0%	None Detected	

Client Sample ID: A8-B-Baseboard **Lab Sample ID:** 552403498-0023

Sample Description: Brown baseboard and mastic/118C

TEST	Analyzed		Non-Asbestos		Asbestos	Comment
	Date	Color	Fibrous	Non-Fibrous		
PLM	3/11/2024	Brown	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 552403498
Customer ID: 55DCSL97
Customer PO: 30213270
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05

Client Sample ID: A8-B-Mastic **Lab Sample ID:** 552403498-0023A

Sample Description: Brown baseboard and mastic/118C

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Beige	0.0%	100.0%	None Detected	

Client Sample ID: A8-C-Baseboard **Lab Sample ID:** 552403498-0024

Sample Description: Brown baseboard and mastic/118C

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Brown	0.0%	100.0%	None Detected	

Client Sample ID: A8-C-Mastic **Lab Sample ID:** 552403498-0024A

Sample Description: Brown baseboard and mastic/118C

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Beige	0.0%	100.0%	None Detected	

Client Sample ID: A9-A **Lab Sample ID:** 552403498-0025

Sample Description: Block filler paint (1997 era)/129

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	White	0.0%	100.0%	None Detected	

Client Sample ID: A9-B **Lab Sample ID:** 552403498-0026

Sample Description: Block filler paint (1997 era)/129

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	White	0.0%	100.0%	None Detected	

Client Sample ID: A9-C **Lab Sample ID:** 552403498-0027

Sample Description: Block filler paint (1997 era)/129

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	White	0.0%	100.0%	None Detected	

Client Sample ID: A10-A **Lab Sample ID:** 552403498-0028

Sample Description: Grout between 6" white ceramic tiles/107

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	White	0.0%	100.0%	None Detected	

Client Sample ID: A10-B **Lab Sample ID:** 552403498-0029

Sample Description: Grout between 6" white ceramic tiles/107

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	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 552403498
Customer ID: 55DCSL97
Customer PO: 30213270
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05

Client Sample ID: A10-C

Lab Sample ID: 552403498-0030

Sample Description: Grout between 6" white ceramic tiles/107

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	White	0.0%	100.0%	None Detected	

Client Sample ID: A11-A

Lab Sample ID: 552403498-0031

Sample Description: Mastic under 6" white ceramic tiles/107

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Beige	0.0%	100.0%	None Detected	

Client Sample ID: A11-A

Lab Sample ID: 552403498-0032

Sample Description: Mastic under 6" white ceramic tiles/107

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Beige	0.0%	100.0%	None Detected	

Client Sample ID: A11-C

Lab Sample ID: 552403498-0033

Sample Description: Mastic under 6" white ceramic tiles/107

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Beige	0.0%	100.0%	None Detected	

Client Sample ID: A12-A

Lab Sample ID: 552403498-0034

Sample Description: Concrete block mortar (2001 era)/C102

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A12-B

Lab Sample ID: 552403498-0035

Sample Description: Concrete block mortar (2001 era)/C102

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A12-C

Lab Sample ID: 552403498-0036

Sample Description: Concrete block mortar (2001 era)/C102

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A13-A

Lab Sample ID: 552403498-0037

Sample Description: Concrete block mortar (1997 era)/130

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	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 552403498
Customer ID: 55DCSL97
Customer PO: 30213270
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05

Client Sample ID: A13-B **Lab Sample ID:** 552403498-0038

Sample Description: Concrete block mortar (1997 era)/C104

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A13-C **Lab Sample ID:** 552403498-0039

Sample Description: Concrete block mortar (1997 era)/C106

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A14-A **Lab Sample ID:** 552403498-0040

Sample Description: Exterior brick mortar (1997 era)/129

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A14-B **Lab Sample ID:** 552403498-0041

Sample Description: Exterior brick mortar (1997 era)/111

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A14-C **Lab Sample ID:** 552403498-0042

Sample Description: Exterior brick mortar (1997 era)/114

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A15-A **Lab Sample ID:** 552403498-0043

Sample Description: 2'x4' ceiling tiles with pinholes and fissures/123

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	80.0%	20.0%	None Detected	

Client Sample ID: A15-B **Lab Sample ID:** 552403498-0044

Sample Description: 2'x4' ceiling tiles with pinholes and fissures/130

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	80.0%	20.0%	None Detected	

Client Sample ID: A15-C **Lab Sample ID:** 552403498-0045

Sample Description: 2'x4' ceiling tiles with pinholes and fissures/111

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	80.0%	20.0%	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 552403498
Customer ID: 55DCSL97
Customer PO: 30213270
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05

Client Sample ID: A16-A **Lab Sample ID:** 552403498-0046

Sample Description: Joint compound (1997 era)/116

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	White	0.0%	100.0%	None Detected	

Client Sample ID: A16-B **Lab Sample ID:** 552403498-0047

Sample Description: Joint compound (1997 era)/116

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	White	0.0%	100.0%	None Detected	

Client Sample ID: A16-C **Lab Sample ID:** 552403498-0048

Sample Description: Joint compound (1997 era)/116

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	White	0.0%	100.0%	None Detected	

Client Sample ID: A17-A-Baseboard **Lab Sample ID:** 552403498-0049

Sample Description: Brown baseboard (1997 era)/111

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	3/11/2024	Red	0.0%	100%	None Detected	
TEM Grav. Reduction	3/11/2024	Red	0.0%	100.0%	None Detected	

Client Sample ID: A17-A-Mastic **Lab Sample ID:** 552403498-0049A

Sample Description: Brown baseboard (1997 era)/111

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Beige	0.0%	100.0%	None Detected	

Client Sample ID: A17-B-Baseboard **Lab Sample ID:** 552403498-0050

Sample Description: Brown baseboard (1997 era)/111

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Brown/Red	0.0%	100.0%	None Detected	

Client Sample ID: A17-B-Mastic **Lab Sample ID:** 552403498-0050A

Sample Description: Brown baseboard (1997 era)/111

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Beige	0.0%	100.0%	None Detected	

Client Sample ID: A17-C-Baseboard **Lab Sample ID:** 552403498-0051

Sample Description: Brown baseboard (1997 era)/111A

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Brown/Red	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 552403498
Customer ID: 55DCSL97
Customer PO: 30213270
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05

Client Sample ID: A17-C-Mastic **Lab Sample ID:** 552403498-0051A

Sample Description: Brown baseboard (1997 era)/111A

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Beige	0.0%	100.0%	None Detected	

Client Sample ID: A18-A **Lab Sample ID:** 552403498-0052

Sample Description: Green door caulking/S03

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Blue/Green	0.0%	100.0%	None Detected	

Client Sample ID: A18-B **Lab Sample ID:** 552403498-0053

Sample Description: Green door caulking/S03

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Blue/Green	0.0%	100.0%	None Detected	

Client Sample ID: A18-C **Lab Sample ID:** 552403498-0054

Sample Description: Green door caulking/S03

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Blue	0.0%	100.0%	None Detected	

Client Sample ID: A19-A **Lab Sample ID:** 552403498-0055

Sample Description: Exterior brick mortar (1956 era)/104

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A19-B **Lab Sample ID:** 552403498-0056

Sample Description: Exterior brick mortar (1956 era)/104

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	0.0%	100.0%	None Detected	

Client Sample ID: A19-C **Lab Sample ID:** 552403498-0057

Sample Description: Exterior brick mortar (1956 era)/101

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	3/11/2024	Gray	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 552403498
Customer ID: 55DCSL97
Customer PO: 30213270
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Materials for Ontario Regulation 278/05

Analyst(s):

Khue Nguyen TEM Grav. Reduction (3)
Kira Ramphal PLM (47)
Nickesh Mistry PLM (20)
PLM Grav. Reduction (3)

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. Interpretation and use of test results are the responsibility of the client. This is a summary report; official reports are available on LabConnect or upon request and 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. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

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

Initial report from: 03/11/2024 17:40:50



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 Or	552403489
CustomerID:	55DCSL97
CustomerPO:	30213270
ProjectID:	

Attn: **Viraj Daruwala**
ARCADIS Canada Inc.
121 Granton Drive
Unit 12
Richmond Hill, ON L4B 3N4

Phone: (905) 882-5984
 Fax: (905) 882-8962
 Received: 3/7/2024 05:24 PM
 Collected:

Project: **Nouvel Horizon - 30213270**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

<i>Client SampleDescription</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>RDL</i>	<i>Lead Concentration</i>
P-1 552403489-0001		3/8/2024	0.2488 g	80 ppm	<80 ppm
	Site: Beige Paint on Black Wall, Room 123				

Rowena Fanto, Lead Supervisor
or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. 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. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted.

* Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.008% wt based on the minimum sample weight per our SOP. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. Definitions of modifications are available upon request.

Samples analyzed by EMSL Canada Inc. Mississauga, ON AIHA LAP, LLC-ELLAP Accredited #196142

Initial report from 03/11/2024 09:28:26

Appendix C

Summary of Asbestos, Lead and Silica Work Classifications

TABLE C-1
SUMMARY OF CLASSIFICATION OF
TYPE 1, 2 AND 3 OPERATIONS
(Ont. Reg. 278/05)

TYPE 1 OPERATIONS

- removing less than 7.5 m² asbestos-containing ceiling tiles;
- removing non-friable asbestos-containing material other than ceiling tiles, if the material is removed without being broken, cut, drilled, abraded, ground, sanded or vibrated;
- breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if the material is wetted and the work is done only using non-powered, hand-held tools; and
- removing less than 1 m² of drywall in which asbestos-containing joint compounds have been used.

TYPE 2 OPERATIONS

- removing all or part of a false ceiling to obtain access to a work area, if asbestos-containing material is likely to be lying on the surface of the false ceiling;
- removal of one square metre or less of friable asbestos-containing material;
- enclosing friable asbestos-containing material;
- applying tape or a sealant or other covering to asbestos-containing pipe or boiler insulation;
- removing 7.5 m² or more asbestos-containing ceiling tiles (if removed without being broken, cut, drilled, abraded, ground, sanded or vibrated);
- breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if the material is not wetted and the work is done only using non-powered, hand-held tools;
- removal of one square metre or more of drywall in which asbestos-containing joint compounds have been used;
- breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if the work is done using power tools that are attached to dust-collecting devices equipped with HEPA filters;
- cleaning or removing filters used in air-handling equipment in a building that has asbestos-containing sprayed fireproofing.

TABLE C-1 (Continued)
SUMMARY OF CLASSIFICATION OF
TYPE 1, 2 AND 3 OPERATIONS
(Ont. Reg. 278/05)

TYPE 3 OPERATIONS

- removal of more than one square metre of friable asbestos-containing material;
- spray application of a sealant to friable asbestos-containing material;
- cleaning or removing air-handling equipment, including rigid ducting but not including filters, in a building that has sprayed asbestos-containing fireproofing;
- repairing or demolishing a kiln, metallurgical furnace or similar structure that is made in part of asbestos-containing refractory materials;
- breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing materials, if the work is done using power tools that are not attached to dust-collecting devices equipped with HEPA filters.

TABLE C-2
SUMMARY OF CLASSIFICATION OF
LEAD-CONTAINING CONSTRUCTION TASKS
MOL GUIDELINE – LEAD ON CONSTRUCTION PROJECTS, APRIL 2011

Type 1 Operations	Type 2 Operations		Type 3 Operations	
	Type 2a	Type 2b	Type 3a	Type 3b
<0.05 mg/m ³	>0.05 to 0.50 mg/m ³	>0.50 to 1.25 mg/m ³	>1.25 to 2.50 mg/m ³	>2.50 mg/m ³

Note: The classification of Type 1, 2 and 3 operations is based on presumed airborne concentrations of lead, as shown above.

TYPE 1 OPERATIONS

- application of lead-containing coatings with a brush or roller;
- removal of lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap;
- removal of lead-containing coatings or materials using a power tool that has an effective dust collection system equipped with a HEPA filter;
- installation or removal of lead-containing sheet metal;
- installation or removal of lead-containing packing, babbitt or similar material;
- removal of lead-containing coatings or materials using non-powered hand tools, other than manual scraping or sanding;
- soldering.

TYPE 2 OPERATIONS

Type 2a Operations

- welding or high temperature cutting of lead-containing coatings or materials outdoors. This operation is considered a Type 2a operation only if it is short-term, not repeated, and if the material has been stripped prior to welding or high temperature cutting. Otherwise it will be considered a Type 3a operation;
- removal of lead-containing coatings or materials by scraping or sanding using non-powered hand tools;
- manual demolition of lead-painted plaster walls or building components by striking a wall with a sledgehammer or similar tool.

Type 2b Operations

- spray application of lead-containing coatings.

TABLE C-2 (Continued)
SUMMARY OF CLASSIFICATION OF
LEAD-CONTAINING CONSTRUCTION TASKS
MOL GUIDELINE – LEAD ON CONSTRUCTION PROJECTS, APRIL 2011

TYPE 3 OPERATIONS

Type 3a Operations

- welding or high temperature cutting of lead-containing coatings or materials indoors or in a confined space;
- burning of a surface containing lead;
- dry removal of lead-containing mortar using an electric or pneumatic cutting device;
- removal of lead-containing coatings or materials using power tools without an effective dust collection system equipped with a HEPA filter;
- removal or repair of a ventilation system used for controlling lead exposure;
- demolition or cleanup of a facility where lead-containing products were manufactured;
- an operation that may expose a worker to lead dust, fume or mist that is not a Type 1, Type 2, or Type 3b operation

Type 3b Operations

- abrasive blasting of lead-containing coatings or materials;
- removal of lead-containing dust using an air mist extraction system.

TABLE C-3
SUMMARY OF CLASSIFICATION OF SILICA-CONTAINING CONSTRUCTION TASKS
MOL GUIDELINE, SILICA ON CONSTRUCTION PROJECTS, APRIL 2011

	Type 1 Operations	Type 2 Operations	Type 3 Operations
Cristobalite and Tridymite	>0.05 to 0.50 mg/m ³	>0.50 to 2.50 mg/m ³	>2.5 mg/m ³
Quartz and Tripoli	>0.10 to 1.0 mg/m ³	>1.0 to 5.0 mg/m ³	>5.0 mg/m ³

Note: The classification of silica-containing construction tasks is based on presumed concentrations of respirable crystalline silica, as shown above.

TYPE 1 OPERATIONS

- The drilling of holes in concrete or rock that is not part of a tunnelling operation or road construction.
- Milling of asphalt from concrete highway pavement.
- Charging mixers and hoppers with silica sand (sand consisting of at least 95 per cent silica) or silica flour (finely ground sand consisting of at least 95 per cent silica).
- Any other operation at a project that requires the handling of silica-containing material in a way that may result in a worker being exposed to airborne silica.
- Entry into a dry mortar removal or abrasive blasting area while airborne dust is visible for less than 15 minutes for inspection and/or sampling.
- Working within 25 metres of an area where compressed air is being used to remove silica-containing dust outdoors.

TYPE 2 OPERATIONS

- Removal of silica containing refractory materials with a jackhammer.
- The drilling of holes in concrete or rock that is part of a tunnelling or road construction.
- The use of a power tool to cut, grind, or polish concrete, masonry, terrazzo or refractory materials.
- The use of a power tool to remove silica containing materials.
- Tunnelling (operation of the tunnel boring machine, tunnel drilling, tunnel mesh installation).
- Tuckpoint and surface grinding.
- Dry mortar removal with an electric or pneumatic cutting device.
- Dry method dust cleanup from abrasive blasting operations.
- The use of compressed air outdoors for removing silica dust.
- Entry into area where abrasive blasting is being carried out for more than 15 minutes.

TABLE C-3 (Continued)
SUMMARY OF CLASSIFICATION OF SILICA-CONTAINING CONSTRUCTION TASKS
MOL GUIDELINE, SILICA ON CONSTRUCTION PROJECTS, APRIL 2011

TYPE 3 OPERATIONS

- Abrasive blasting with an abrasive that contains ≥ 1 per cent silica.
- Abrasive blasting of a material that contains ≥ 1 per cent silica.

Arcadis Canada Inc.
8133 Warden Avenue
Markham, Ontario
L6G 3N4
Phone: 905 764 9380
www.arcadis.com