Designated Substances Survey

Gatineau Park Facilities
(PA# 95799, Gatineau Park Headquarters)

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Executive Summary

Trow Associates Inc. (Trow) was retained by Ms. Leslie Scott of the National Capital Commission (NCC) to complete limited designated substance surveys (DSS) on a total of three facilities/structures and a full DSS on the Gatineau Park Headquarters located at chemin Scott in Gatineau, Quebec.

The main objectives of the DSS, which was only conducted on the Gatineau Park Visitor Centre (Building Asset # 99311), were to identify and quantify, through a sampling program and visual assessment, the presence of designated substances listed in the Ontario Occupational Health and Safety Act and other special handling materials. The goal of the limited DSS was to visually assess for the potential of designated substances and identify associated health risks.

Understanding that sites are in Quebec where there are no specific regulations for conducting a DSS, however, the surveys included a review of the designated substances as defined by OHSA, with particular emphasis placed on (but not limited to): asbestos-containing materials (ACMs); lead-based paints and lead-containing materials; mercury-containing equipment; and potential sources of silica. The special handling materials surveyed included: PCB-containing equipment; ozone-depleting substances (ODSs); urea-formaldehyde foam insulation (UFFI); bird and animal droppings; and mould. The aforementioned materials were identified through visual observations and were not sampled as part of the survey. It is noted that the roofing materials were not cut nor assessed in detail as part of this survey.

The buildings are described as follows:

- The front portion of the Gatineau Park headquarters is a two-storey, steel-framed building, complete with a general lobby on the main floor entrance and offices on the second floor. The middle portion of the building consists of a split level facility which houses meeting rooms, washrooms and general lobby/visitor centre. The rear portion of the building consists of a mix of a garage/storage with storage rooms on a mezzanine floor along with offices on the main and second floor (BA 99311).
- A large 1 ½ storey wooden garage on a concrete slab used to store general materials. The building is complete with wooden mezzanines (BA 345282).
- A concrete bunker-style storage building used to store general materials (BA 244157).
- A metal panel storage shed used to house lost dogs (BA 346913).

Based on the information collected as part of the survey, the results of the survey are summarized in the table below. It is noted that roof materials were not assessed as part of this survey.

Table 1: DSS Summary

Substance	Description	Location	Recommendation
Asbestos	Pipe fitting / Mud elbow insulation	2nd floor service area	It is recommended that a damaged elbow identified in the 2nd floor map storage room be removed using moderate-risk work (if glove bag is used) as per R.Q.c.S-2.1, r.6) If to be disturbed in the future, a moderate-risk work operation (R.Q.c.S-2.1,r.6) can be used to remove the asbestos-containing pipe fitting insulation assuming a glove bag is used. Alternatively, if other elbows are not removed, an asbestos-management program would be suggested as per Section 7,8 of O.Reg. 278/05.
	Black Fire Sealant	Various ceiling/wall joints of the building	If to be disturbed in the future, the sealant may be removed using a Low-risk work operation (R.Q.c.S-2.1,r.6). Alternatively, an asbestos-management program would be suggested as per Section 7,8 of O.Reg. 278/05
Lead	Black paint Dark Red paint	Stair Railings Public spaces columns	Provide workers with appropriate personal protective equipment (i.e., respirators, gloves and eye protection) during any future renovations. Minimize activities involving abrasion or sanding of painted surfaces. It is recommended that the Ontario Ministry of Labour's Guideline "Lead on Construction Projects", September, 2004 be followed.
Mercury	Fluorescent light tubes	Throughout building (300 to 500 tubes).	As part of on-going building maintenance, remove and re-use/recycle or dispose of all mercury-containing equipment in accordance with applicable regulations. Where possible, fluorescent light tubes should be recycled at an approved recycling facility.
	Thermostats	At least 3 thermostats in the building.	
Silica	Plaster and textured wall plaster, concrete block walls, drywall, acoustic ceiling tiles, ceramic tile, poured concrete	Throughout building.	Wet silica-containing area(s) to be disturbed and provide daily wet sweeping or HEPA vacuuming of silica dust to minimize generation of dust. Provide workers with appropriate respiratory protection and utilize ventilation during disturbance of silica-containing structures.

Substance	Description	Location	Recommendation
PCBs	Fluorescent light ballasts	Throughout building (over 100 ballasts).	Remove and stockpile fluorescent light ballasts prior to demolition in accordance with Federal Federal Regulations SOR/2008-273 and Ontario Regulation 362 Assess stockpiled ballasts for PCB content by comparing the coding on the surface of each ballast with the Environment Canada publication EPS 2/CC/2 entitled, *Identification of Lamp Ballasts Containing PCBs*, revised August 1991. Dispose of PCB-containing ballasts at a licensed PCB destruction facility in accordance with O. Reg. 362 and 347.
ODSs	Refrigerators, water fountains, portable water coolers, drink vending machine, air-conditioning unit, walk-in cooler	Various locations throughout building.	As part of on-going building maintenance, all sources of ODSs should be removed from the building/ property by an individual who holds an ozone depletion prevention card prior to disposing of such equipment. Re-use/recycle or dispose of equipment in accordance with O. Reg. 189/94 (amended to O. Reg. 238/01).

Trow completed a limited DSS on three buildings on this property asset which included the garage, storage shed and a dog storage unit. No samples were collected for analysis, however, the following potential special attentions substances were identified on the various buildings.

- Garage (BA 345282)
    - Potential asbestos (non-friable tar shingles on the roof, in good condition);
    - Potential lead-paints (brown, green and black paint in fair condition);
    - Mercury (fluorescent light tubes); and
    - Silica (poured concrete floor, good condition).
- Storage Shed (BA 244157)
    - Potential asbestos (non-friable tar sheet shingle, fair to good condition);
    - Potential lead-based paints (brown/beige paint on doors, some minor flaking/peeling); and
    - Silica (concrete floor and concrete block walls).

- Dog Storage Shed (BA 346913)
    - Potential lead-based paints (yellow cabinet, red paint on metal panel walls); and
    - Silica (poured concrete floor)

None of these materials were in a condition that would require immediate attention. Appropriate regulations should be however followed when handling these materials.

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Appendices

1.0 Introduction & Background

1.1. Introduction

Trow Associates Inc. (Trow) was retained by Ms. Leslie Scott of the National Capital Commission (NCC) to complete limited designated substance surveys (DSS) on three building facilities/structures and a full DSS on the Gatineau Park Headquarters asset (PA 95799).

1.2. Background

The property covered by this report includes the following areas and structures:

- The Gatineau Park Headquarters, which consists of a two-storey building with visitor centre, office space and a works garage.

The Gatineau Park Headquarters was completed as a full DSS and is described as follows:

- The front portion of the Gatineau Park Headquarters is a two-storey, steel-framed building, complete with a general lobby on the main floor entrance and offices on the second floor. The middle portion of the building consists of a split level facility which houses meeting rooms, washrooms and general lobby/visitor centre. The rear portion of the building consists of a mix of a garage/storage with storage rooms on a mezzanine floor along with offices on the main and 2nd floor (BA 99311).

The remaining buildings were completed as limited DSS and are described as follows:

- A large, 1 ½ storey wooden garage on a concrete slab used to store general materials. The building is complete with wooden mezzanines (BA 345282).
- A concrete, bunker-style, storage building used to store general materials (BA 244157).
- A metal panel storage shed used to house lost dogs (BA 346913).

1.3. Objectives

The main objectives of the full DSS, which was only conducted on the Gatineau Visitor Headquarters (Building Asset # 99311), were as follows:

- To identify, through a sampling program and visual assessment, the presence of designated substances listed in the Ontario Occupational Health and Safety Act (OHSA) and other special handling materials;
- To quantify the amounts of designated substances and special handling materials on the site; and,
- To evaluate if such substances pose a health risk to constructors, and make recommendations to eliminate such risks.

The main objective of the limited DSS, which was conducted on the remaining three facilities, were as follows:

- To visually identify the presence of designated substances listed in the OHSA and other special handling materials;
- To evaluate if such substances pose a health risk to constructors, and make recommendations to eliminate such risks.

1.4. Scope of Work

To accomplish the DSS objectives, the following scope of work was conducted on the Gatineau Park Headquarters (BA# 99311):

- Conduct a systematic inspection of all accessible areas of the building to document the location, type, quantity and condition of designated substances and special handling materials;
- Collect and record representative building material samples for potential laboratory analysis;
- Submit representative samples for bulk asbestos and lead laboratory analyses; and,
- Interpret analytical results and prepare a detailed stand-alone survey report identifying the type, location and condition of the designated substances and special handling materials within the building.

To accomplish the limited DSS objectives, the following scope of work was conducted on the garage, concrete bunker style storage building, lost dog storage shed (i.e. remaining three buildings).

- Conduct a visual inspection of all accessible areas of the buildings to document the location, type, quantity and condition of suspected designated substances and special handling materials;

The DSS and Limited DSS survey included a review of all of the designated substances defined by the OHSA, with particular emphasis placed on (but not limited to):

- Asbestos-containing materials;
- Lead based paints and plumbing;
- Mercury-containing equipment; and,
- Potential sources of silica.

Special handling materials that were incorporated into the survey include:

- PCB-containing equipment;
- Ozone-depleting substances;

- Urea-formaldehyde foam insulation;
- Bird and animal droppings; and,
- Mould.

2.0 Health & Safety, Product and Legislative History

Understanding that the subject property is in Quebec where there are no specific regulations for completing a DSS, it was requested that Trow complete the surveys in accordance with Ontario Regulations. The Ontario Regulations were chosen based on its detailed requirements and list of special attention substances to be reviewed as part of the Designated Substance Surveys to ensure consistency between reporting a thorough assessment of its buildings.

2.1. Legislation

Section 30 of the Ontario OHSA R.S.O. 1990 states the following: *"Before beginning a project, the Owner shall determine whether any designated substances are present at the project site and shall prepare a list of all designated substances that are present at the site." A designated substance is defined by OHSA as "a biological, chemical or physical agent or combination thereof prescribed as a designated substance to which the exposure of a worker is prohibited, regulated, restricted, limited or controlled."* The OHSA has enacted a regulation for eleven designated substances. Section 30 of OHSA further requires that a list of designated substances be provided to prospective construction workers on the project.

More specific legislation, as well as a brief discussion of the potential health and safety issues and manufacturing history for the main designated substances or special handling materials included in this survey is provided below.

2.2. Asbestos-Containing Materials

In accordance with O. Reg. 278/05, asbestos-containing materials (ACM) are defined as material is that contains 0.5 % or more (dry weight) of any of the following fibrous silicates: actinolite, amosite, anthophyllite, chrysotile, crocidolite or tremolite. However, in accordance with Quebec regulation *Regulation respecting the quality of the work environment, R.Q. c. S-2.1, r.15, Whole document*, ACM is defined as a material that contains 0.1% or more (dry weight) of any of the aforementioned fibrous silicates. The handling of ACM is also governed by the *Safety Code for the Construction Industry (R.Q.c.S-2.1,r.6)* under an *Act Respecting Occupational Health and Safety (R.S.Q.c.s-2.1*).

Although asbestos has apparently been in use for more than 2,000 years, it was not until the industrial revolution in the late 1800s that it became popular for such things as insulation, fireproofing, floor tiles, ceiling tiles, cement piping, and corrugated pipe insulating wrap because of its incombustibility, heat resistance, chemical resistance, and reinforcing properties.

Health concerns related to airborne friable asbestos fibres, which include the diseases called asbestosis, mesothelioma, and lung cancer, resulted in a ban of its use as insulation in Ontario in 1973. Provincial occupational health and safety requirements with respect to ACMs are contained within Ontario Regulation 278/05 and 837 (amended to O. Reg. 279/05). Disposal of

asbestos waste is governed by Environmental Protection Act – R.R.O. 1990, Regulation 347 (amended to O. Reg. 461/05). The Transportation of Dangerous Goods Act and Regulations prescribe additional requirements related to the transportation of asbestos waste.

2.3. Lead-Based Paints and Lead-Containing Materials

It is believed that lead has been used for over 6,000 years. Its long history and widespread use is due to some of its properties which make it commercially attractive, including: easy workability, low melting point, ability to form carbon metal compounds, hold pigments well, very easily recycled, stands up well to the outside weather elements, a high degree of corrosion resistance, and is inexpensive. As a result, lead has historically been used for many things. The following is a list of some areas in a building where lead might typically be found: interior and/or exterior paint, batteries, pigments, solders, plumbing, cable coverings, caulking, varnishes, glass and pipes.

The above products may produce air, dust, water and soil lead contamination, which can result in exposures through ingestion, absorption and/or inhalation. Lead exposure can result in damage to the kidneys, nervous system, and reproductive system. Lead exposure is a particular concern from lead paint dust during renovation, demolition, or construction activities, or from deterioration of wall coverings.

The 1975 Hazardous Products Act prohibited the use of lead-based pigments in interior consumer paint. The Federal Hazardous Products Act (1976) originally limited the quantity of lead permissible in newly manufactured paints to 0.5% (5,000 ppm). However, on April 19, 2005, the federal Surface Coating Materials Regulations came into force, thereby amending Schedule I of the Hazardous Products Act. According to the new regulation, paints having a lead content greater than 600 mg/kg (600 ppm) are considered to be lead-based.

Under the provincial OHSA Regulation 843 (amended to O. Reg. 109/04) respecting lead, workers shall be protected from exposure to airborne lead. Workers are not at risk of being exposed to lead unless they are undertaking an activity that disturbs surfaces covered with lead-based paint. Special precautions are required during renovation or demolition activities to ensure that worker exposure to lead does not exceed the limits specified in the Occupational Health and Safety Act, and its associated regulations.

2.4. Mercury-Containing Equipment

Mercury has historically been used to produce chlorine gas and caustic soda, and is also used in some paints, thermometers, fluorescent light tubes, dental fillings, and batteries. Mercury salts are sometimes used in skin lightening creams and as antiseptic creams and ointments.

Mercury can be present in three forms: elemental, inorganic and monomethyl. The nervous system is very sensitive to all forms of mercury. Methylmercury and metallic mercury vapours are more harmful than other forms, because more mercury in these forms reaches the brain. Exposure to high levels of metallic, inorganic, or organic mercury can permanently damage the

brain, kidneys, and developing fetus. Effects on brain functioning may result in irritability, shyness, tremors, changes in vision or hearing, and memory problems.

Short-term exposure to high levels of metallic mercury vapours may cause lung damage, nausea, vomiting, diarrhea, increases in blood pressure or heart rate, skin rashes, and eye irritation.

The 1975 Hazardous Products Act prohibits the use of mercury in decorative or protective coatings applied on toys, equipment and other products for use by a child in learning or play. In 1991, a voluntary agreement between Health Canada and the Canadian Paint and Coatings Association resulted in the removal of mercury compounds from interior latex paints. In accordance with the Surface Coating Materials Regulations, the concentration of total mercury present in a surface coating material must not be more than 10 mg/kg (10 ppm).

In addition, the Canadian Council of Ministers of the Environment (CCME) has developed a Canada-wide Standard for mercury-containing lamps. The standard takes a pollution prevention approach by reducing the mercury content of lamps sold in Canada. The standard set a goal of a 70% reduction by 2005, as compared to a 1990 baseline, and an 80% reduction by 2010 in the average content of mercury in all mercury-containing lamps sold in Canada.

Under the OHSA Regulation 844 (amended to O. Reg. 110/04) respecting mercury, workers shall be protected from exposure to airborne mercury. Workers are not at risk of being exposed to mercury unless they are undertaking an activity that disturbs surfaces covered with mercury-containing paint or equipment containing mercury. Special precautions are required during renovation or demolition activities to ensure that worker exposure to mercury does not exceed the limits specified in the OHSA, and its associated regulations.

2.5. Silica

Silica refers to the chemical compound silicon dioxide (SiO_2), which occurs in a crystalline or noncrystalline (amorphous) form. Crystalline silica is a common component of soil and rocks, and is produced in some industrial operations when heated (such as foundry processes, calcining of diatomaceous earth, brick and ceramics manufacturing, and silicon carbide production).

Occupational exposure to respirable crystalline silica occurs in a large variety of industries and occupations due to its widespread natural occurrence and the common use of materials and products containing it. Activities such as drilling, quarrying brick/block/concrete cutting and demolition activities can create an airborne silica exposure hazard. Inhalation of silica can produce silicosis, a disabling, dust-related disease of the lungs. Depending on the length of exposure, silicosis is a progressive and many times a fatal disease. Inhaling silica dust has also been associated with other diseases, such as tuberculosis and lung cancer.

Under the OHSA Regulation 845 (amended to O. Reg. 606/05) respecting silica, workers shall be protected from exposure to airborne silica. Workers are not at risk of being exposed to silica unless they are undertaking an activity that disturbs silica-containing materials, causing respirable silica to become airborne. Special precautions are required during renovation or

demolition activities to ensure that worker exposure to silica does not exceed the limits specified in the OHSA, and its associated regulations.

2.6. PCB-Containing Equipment

Polychlorinated biphenyls (PCBs) are a group of chemicals based on a combination of chlorine and a derivative of benzene called biphenyl. PCBs are toxic and persistent chemicals primarily used as insulating fluids in heavy-duty electrical equipment in power plants, industries, and large buildings. Other uses were as a plasticizer in sealant, caulking, synthetic resins, rubber, paints, waxes, and asphalt, and a flame retardant in lubricating oils. Health concerns over PCBs, including their potential as carcinogens, resulted in the ban of their manufacture in 1977.

The PCB regulations (SOR/2008-273) took effect in 2008 and are governed under the Canadian Environmental Protection Act, 1999. These regulations have provided deadlines for ending PCB usage at concentrations above 50 mg/kg, limit the time that PCB can be stored and limit the time that PCBs can be stored prior to destroying them. The disposal of PCB waste is governed by O.Reg. 362, 1990 which was last consolidated in February, 2007.

2.7. Ozone-Depleting Substances

An ozone-depleting substance (ODS) is any substance that results in a depletion of stratospheric ozone shield that screens the earth from some of the sun's harmful ultraviolet rays. Such substances must be sufficiently stable to survive the time needed to mix into the stratosphere. Common ozone-depleting substances are chlorofluorocarbons (CFCs), halons, hydrochlorofluorocarbons (HCFCs), carbon tetrachloride, methyl chloroform, methyl bromide and oxides of nitrogen.

CFCs have been widely used as refrigerants, solvents, foam blowing agents and as aerosol propellants. Halons are used within fire extinguishing equipment. Methyl chloroform and carbon tetrachloride have been used mainly in industry as degreasers and adhesives, and for chemical processing.

Several regulations apply to the use, storage, disposal and emission of ozone-depleting substances. The general provincial regulation pertaining to ODS is O. Reg. 356 (amended to O. Reg. 851/93) and O. Reg. 189/94 (amended to O. Reg. 238/01).

Due to the nature of ODSs and their potential impact to the environment, their use, transport, storage, and disposal is strictly enforced. Canada's current position on CFCs is to freeze production by January 1996 and complete elimination by 2020. The Federal Halocarbon Regulations (SOR/99-255) assist in the development of strategic plans for the use, control and phase-out of ODSs and their halocarbon alternatives for operations under federal jurisdiction.

2.8. Urea-Formaldehyde Foam Insulation

Urea-formaldehyde foam insulation (UFFI) was developed in Europe in the 1950s as an improved means of insulating cavities in house walls. It was typically made at a construction site from a mixture of urea-formaldehyde resin, a foaming agent and compressed air. When the mixture is injected into the wall, urea and formaldehyde unite and "cure" into an insulating foam plastic. During the 1970s, when concerns about energy efficiency led to efforts to improve home insulation in Canada, UFFI became an important insulation product for existing houses.

In the insulating process, a slight excess of formaldehyde was often added to ensure complete "curing" with the urea to produce the urea-formaldehyde foam. That excess was off-gassed during the curing, almost entirely within a day or two of injection. Health problems associated with exposure to formaldehyde include: eye, nose, and throat irritation, coughing, headaches, dizziness, and, in very high concentrations, bronchial pneumonia and pulmonary edema. As a result, the use of UFFI was banned in 1980 by the Federal Hazardous Products Act (RF 1985).

2.9. Bird and Animal Droppings

Bird and animal droppings may present a health risk. The most serious health risks arise from disease organisms that grow in the nutrient rich accumulations of bird and animal droppings. Fungal diseases are associated with bird, bat and animal droppings. The two most common diseases associated with bird and bat droppings are histoplasmosis and cryptococcosis.

Histoplasmosis is a common lung disease caused by a microscopic fungus which grows on accumulated bat guano and bird droppings. The fungus enters the lungs usually after the guano has been disturbed. The infection usually causes only minor flu-like symptoms and is resolved uneventfully. In a small percentage of cases it can be fatal, especially to young children. Histoplasmosis can be prevented by avoiding areas with high concentrations of guano or wearing a protective mask and clothing.

Cryptococcosis is rare fungal infection acquired by inhalation of encapsulated yeast Cryptococcus neoformans, which may cause a self-limited pulmonary infection or disseminate, especially to the meninges, but sometimes to the skin, bones, viscera, or other sites.

Histoplasmosis is most often associated with bird and bat droppings and cryptococcosis with pigeon droppings. Both diseases are spread when droppings are disturbed. After the disturbance, the fungal spores (for histoplasmosis) or yeast-like vegetative cells (for cryptococcosis) float in the air by the millions. Workers or visitors nearby may inhale them and become infected. Bird droppings are most dangerous when they are dry and become airborne as a fine dust.

Most people, when infected by either disease organism, show no symptoms or mild flu-like symptoms. But if someone breathes a high concentration of spores or cells, or is particularly susceptible to the disease, the infection can become serious, sometimes even deadly.

2.10. Mould

Moulds and fungi are found in nature and are necessary for the breakdown of leaves, wood and other plant debris. These micro-organisms can enter a building directly or by their spores being carried in by the air. All moulds require both a source of nutrients and humidity to survive and flourish. Generally, nutrients are not a limiting factor and, when moisture is high, mould will grow on wood, drywall, upholstery, fabric, wallpaper, drapery, ceiling tiles, and carpeting. In modern buildings, moisture is present as the result of: flooding, leaks in the roof or plumbing, sealed buildings that do not allow excess moisture to escape, sources such as cooking facilities, showers, etc., or excess humidity.

Some of the more common types of mould found in buildings include: *Stachybotrys chartarum* (also known as *Stachybotrys atra*), *Aspergillus* sp., *Penicillium* sp., *Fusarium* sp., *Trichoderma* sp., *Memnoniella* sp., *Cladosporum* sp. and *Alternaria* sp.. In general, it is the very young, the elderly, and immune-compromised individuals who are most at risk. It is also important to note that sensitivity to mould varies dramatically from individual to individual. In addition, many of these moulds make mycotoxins, which are metabolites or by-products from the moulds that have been identified as being toxic to humans. These toxins can slowly wear down the immune system and can lead to allergic or respiratory problems.

Mould exposure from homes or workplaces can cause a variety of symptoms ranging from minor allergic reactions to extremely severe, life threatening disease. Documented health effects from mould exposure include headache, fatigue, cough, shortness of breath, congestion, fever, nausea, and eye, ear and throat irritation.

3.0 Survey Methodology and Assessment Criteria

3.1. Full DSS Survey

Mr. Shawn Doherty, P.Eng. of Trow conducted the survey at BA# 99311 (Gatineau Park Headquarters) on September 16, 2009. The front portion of the property is a two-storey, steel-framed building, complete with a general lobby on the main floor entrance and offices on the second floor. The middle portion of the building consists of a split level facility which houses meeting rooms, washrooms and general lobby/visitor centre. The rear portion of the building consists of a mix of a garage/storage with storage rooms on a mezzanine floor along with offices on the main and second floor.

The DSS consisted of a thorough systematic inspection of all accessible areas of the on-site building to document the location, type, quantity and condition of designated substances and special handling materials. As part of the survey, bulk material samples were collected for asbestos analysis and paint samples were collected for lead analysis.

The following limitations were present as part of the site visit:

- Void spaces behind or within walls, structural supporting walls and chases could not be assessed and additional materials may be present within these void spaces.
- The roofing materials of the building were not assessed (i.e. cut, sampled) at this stage of the DSS program. This limitation was discussed with the NCC prior to completing the field survey.

Selected photographs taken during the survey have been included in Appendix C. Details regarding the approach used in conducting the field investigation including sampling procedures and analytical methodologies are outlined in the following sections.

3.1.1. Asbestos-Containing Materials

The asbestos survey included but was not limited to recording visual observations of the flooring, walls, ceilings, sealants and thermal system insulation.

Potential ACMs were classified in the field as being either friable or non-friable. In accordance with applicable regulations, “friable material” is defined as: *material that, when dry, can be crumbled, pulverized or powdered by hand pressure, or is crumbled, pulverized or powdered.*

Bulk samples of suspected ACMs were collected and submitted to Crisp Analytical Laboratory in Baton Rouge, Louisiana.

3.1.1.1. Sampling

The asbestos survey was undertaken in general conformance with Ontario Regulation 278/05, *Regulation Respecting Asbestos on Construction Projects and in Buildings and Repair Operations*, which is the current governing Regulation on detection and handling of asbestos. As described above, the survey methodology included a visual inspection of all accessible building components. Minor destructive test openings were made in some materials where access permitted. Table 1 guidelines were followed for the sampling program.

Table 1: Minimum Asbestos Bulk Material Sample Requirements

ITEM	TYPE OF MATERIAL	SIZE OF AREA OF HOMOGENEOUS MATERIAL	MINIMUM NUMBER OF BULK MATERIAL SAMPLES TO BE COLLECTED
1.	Surfacing material, including without limitation, material that is applied to surfaces by spraying, by troweling or otherwise, such as acoustical plaster on ceilings and fireproofing materials on structural members	Less than 90 square meters	3
		90 or more square meters, but less than 450 square meters	5
		450 or more square meters	7
2.	Thermal insulation, except as described in item 3	any size	3
3.	Thermal insulation patch	Less than 2 linear meters or 0.5 square meters	1
4.	Other material	Any size	3

Based on the above, a total of 52 bulk material samples were collected and submitted for asbestos analysis. However, due to additional layers being identified at the laboratory, a total of 62 laboratory analyses were completed.

This number of samples was considered representative based on observations pertaining to like building materials, and was consistent with the sampling requirements of O. Reg. 278/05. It is also noted that the laboratory also identified additional material layers within selected samples, which is shown within Table 2. Please note that spatial representation is not only achieved in an asbestos survey through sampling but also through visual observation. For example, drywall compound material from one wall is considered to be the same as another wall if the material appears to be homogeneous. As such, a building material sample collected from a certain area can be extrapolated to represent other areas within the building. This stems from the visual evidence relating to the similarity of the building materials and the assumption that these materials would have been placed / erected at the same time during the same construction project. Where evidence indicates that this is not the case, additional characterization is required.

Samples were collected from various areas of the building using appropriate wetting techniques and sampling tools. The collected bulk samples were placed in sealable plastic bags and labelled before being sent to an independent laboratory for analysis to verify the presence or absence of asbestos.

The results of the asbestos sampling program are summarized in Table 2 of **Section 4.1.1**.

3.1.1.2. Analytical Methodology

All asbestos samples were submitted to Crisp Analytical Laboratory, which is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) by the National Institute of Standards and Technology for analysis of bulk materials for asbestos.

Analyses were performed in accordance with the method outlined in the *Regulation Respecting Asbestos on Construction Projects and in Buildings and Repair Operations* – made under the Occupational Health and Safety Act Ontario Regulation 278/05, IRSST Method 224-1 and the EPA/600/R-93-116 Method for the Determination of Asbestos in Bulk Building Materials.

3.1.1.3. Hazard Ranking

Having identified building materials and areas containing asbestos, a comprehensive hazard assessment was performed. The degree of hazard associated with asbestos containing materials depends upon on the following factors: accessibility, condition, friability, activity level, exposed surface area, type of asbestos and percentage of asbestos content. The hazard ranking tree is presented in **Appendix E**.

Activity Level

Activity level or occupancy refers to the degree of activity in the area. The higher the activity level the greater the potential for disturbance. The number of workers, the work performed and the length of time spent in the area is noted.

Exposed Surface Area

Exposed surface area has an effect on the potential for fibre release and the possibility for contact or damage.

Accessibility

Accessibility refers to how easily area occupants can reach the material. (i.e., is there a high potential for accidental or intentional disturbance of material, either by direct impact by individuals or by impact from objects used on the area).

Condition

Condition of the material refers to the quality of installation, material deterioration, adhesion to the underlying substrate and damage sustained. Deterioration and damage to material can result from leakage, vibration, impaction, air movement and wind erosion. Material discolouration and staining often indicates water damage. Also debris on floors, furniture and work surfaces indicates material of poor condition.

Friability

Friability refers to the ease with which the material breaks apart. The more friable the material, the greater the potential for fibre release.

Type of Asbestos

Exposure to all types of asbestos fibres may cause cancer or asbestosis, but higher risks are associated with exposure to crocidolite and amosite.

3.1.2. Lead-Based Paints and Lead-Containing Materials

The building was inspected for various painted surfaces that may contain lead-based paint or other building materials (such as wiring and plumbing) that may contain lead. The selection of sampling locations was based on the paint colours, area of coverage, and suspected age of the paint.

3.1.2.1. Sampling

All painted areas of significant size and different colours were sampled and analyzed for lead. Areas where several layers of paint existed did not necessarily have identification of each layer unless the paint was in poor condition. However, every attempt to identify the number and colours of the layers was made.

Field staff used a scraper blade to collect bulk lead paint samples. Paint was scraped directly off the substrate and into a plastic-sampling bag, which was then sealed and labelled. Special care was made to ensure that all layers of paint were removed equally but none of the substrate. Eleven paint samples were submitted for lead analysis.

The number of samples from the building was considered representative based on observations pertaining to contiguous areas showing similar painted surfaces. Since paint is processed in large batches, paint composition is assumed to be spatially consistent during and after application.

The results of the lead sampling are summarized in Table 3 in **Section 4.1.2**.

3.1.2.2. Analytical Methodology

All lead paint chip samples were submitted to Crisp Analytical Laboratory, which is accredited by the American Industrial Hygiene Association (AIHA) National Lead Laboratory Accreditation Program (NLLAP). Analyses were performed by Atomic Absorption Spectrophotometry (AAS).

According to the Surface Coating Materials Regulations, paints having a lead content greater than 600 mg/kg (600 ppm) are considered to be lead-based.

3.1.3. Mercury-Containing Equipment

The buildings were visibly inspected for materials that could release mercury liquid/vapour during on-going building maintenance. The results of the mercury inspection are summarized in **Section 4.1.3**.

3.1.4. Silica

The building was visibly inspected for free silica and materials that could release silica dust as a result of on-going building maintenance. Although samples for silica were not collected, areas that commonly contain silica materials were noted during the DSS. The results of the silica inspection are summarized in **Section 4.1.4**.

3.1.5. Other Designated Substances

A visual survey of the building was made to determine if any other designated substances including coke oven emissions, acrylonitrile, arsenic, benzene, ethylene oxide, isocyanates, and vinyl chloride were present within the building, which would require special attention prior to demolition. The results of the visual inspection are presented in **Section 4.1.5**.

3.1.6. PCB-Containing Equipment

A cursory inspection for equipment that may potentially contain PCBs was conducted. During the survey, if any PCB wastes and/or storage sites were identified, their presence and location were also recorded in the field. The results of the PCB inspection are summarized in **Section 4.1.6**.

3.1.7. Ozone-Depleting Substances

During survey activities, the presence of equipment containing refrigerants was recorded in the field. The results of the ODSs inspection are summarized in **Section 4.1.7**.

3.1.8. Urea-Formaldehyde Foam Insulation

During survey activities, inspections of the exterior and interior walls were made in order to determine the potential presence of any UFFI. The interior and exterior walls were inspected for evidence of repaired openings (i.e., "nozzle holes") made for installation of the insulation. In order to assist in the determination of whether or not any insulation is present, visual observations of the wall cavities were made at representative locations. Any UFFI material identified and its location was recorded in the field. The results of the UFFI inspection are summarized in **Section 4.1.8**.

3.1.9. Bird and Animal Droppings

During survey activities, the presence of bird and/or animal droppings was recorded in the field. The results of the inspection for bird and animal droppings are summarized in **Section 4.1.9**.

3.1.10. Mould

The mould inspection consisted of looking for visible signs of mould in areas where mould growth is likely. Such areas include those with building materials containing cellulose (e.g. paper, cardboard, wood, etc.), where these materials are exposed from time to time to water or high humidity. The results of this inspection are included in **Section 4.1.10**.

3.2. Limited DSS

The limited DSS was conducted as per **Section 1.4** of the report on a garage, concrete store building and a dog shed all located within the Gatineau Park Headquarters property. A summary of the Limited DSS information is included in **Appendix A**. No samples were collected and/or submitted for analysis as part of this survey.

3.2.1. Asbestos-Containing Materials

The asbestos survey included but was not limited to recording visual observations of the flooring, walls, ceilings, sealants and thermal system insulation.

Potential ACMs were classified in the field as being either friable or non-friable. In accordance with applicable regulations, "friable material" is defined as: *material that, when dry, can be crumbled, pulverized or powdered by hand pressure, or is crumbled, pulverized or powdered*.

The locations of the potential / suspected ACMs were then outlined in the limited DSS summary table**.**

3.2.2. Lead-Based Paints and Lead-Containing Materials

The buildings were inspected for various painted surfaces that may contain lead-based paint or other building materials (such as wiring and plumbing) that may contain lead. The results of the paint inspection are included in the Limited DSS Table.

3.2.3. Mercury-Containing Equipment

The buildings were visibly inspected for materials that could release mercury liquid/vapour during on-going building maintenance. The results of the mercury inspection are summarized in the limited DSS Table.

3.2.4. Silica

The buildings were visibly inspected for free silica and materials that could release silica dust as a result of on-going building maintenance. All results of the silica inspection are summarized in the limited DSS Table.

3.2.5. Other Designated Substances

A visual survey of the buildings was made to determine if any other designated substances including coke oven emissions, acrylonitrile, arsenic, benzene, ethylene oxide, isocyanates, and vinyl chloride were present within the building, which would require special attention prior to demolition. The results of the visual inspection are presented in the limited DSS Table.

3.2.6. PCB-Containing Equipment

A cursory inspection for equipment that may potentially contain PCBs was conducted. The results of the PCB inspection are summarized in the limited DSS Table.

3.2.7. Ozone-Depleting Substances

During survey activities, the presence of equipment containing refrigerants was recorded in the field. The results of the ODSs inspection are summarized in the limited DSS Table.

3.2.8. Urea-Formaldehyde Foam Insulation

During survey activities, inspections of the exterior and interior walls were made in order to determine the potential presence of any UFFI. The interior and exterior walls were inspected for evidence of repaired openings (i.e., “nozzle holes”) made for installation of the insulation. The results of the UFFI observations are shown in the limited DSS Table.

3.2.9. Bird and Animal Droppings

During survey activities, the presence of bird and/or animal droppings was recorded in the field. The results of the inspection for bird and animal droppings are summarized in the limited DSS Table.

3.2.10. Mould

The mould inspection consisted of looking for visible signs of mould in areas where mould growth is likely. The results of the inspection for mould are summarized in the limited DSS Table.

4.0 Survey Findings

4.1. Full DSS Findings

The following findings are for the Gatineau Park Headquarters (BA# 99311).

4.1.1. Asbestos-Containing Materials

Several bulk material samples were collected and submitted for asbestos analysis and are shown in the table below. The locations of the asbestos samples are shown on the floor plans, in **Appendix B**. Analytical results are provided in **Appendix D**. The following is a brief summary of the survey.

Table 2: Summary of Asbestos Analyses

SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	FRIABILITY[1]	ASBESTOS CONTENT[2]	CONDITION[3]	ESTIMATED QUANTITY	HAZARD RANKING[4]
AS1a	Locker 1-25	FT1 floor tile, beige with brown spots (12 by 12)	Non-Friable	n/d	n/a	n/a	n/a
AS1b*				n/d			
AS1c				n/d			
AS1b*		FT1 floor tile, black mastic	Non-friable	n/d	n/a	n/a	n/a
AS2a	Map Storage, 2nd Floor	Drywall Compound	Friable	n/d	n/a	n/a	n/a
AS2b				n/d			
AS2c	Office 242b			n/d			
AS2d	1st Floor, General Office Area			n/d			
AS2e				n/d			
AS2f	Common Area 1-19			n/d			
AS2g				n/d			
AS3a	Mud elbow, Storage Room	Mud elbows	Friable	36% C	Fair	30 to 60 elbows (service area of building)	3
AS3b	Mud Elbow, Map Storage			36% C			
AS3c	Mud elbow, Mezzanine			36% C			
AS4a	2nd Floor Hallway, Rear Section	CT1 ceiling tile, 2 ft by 4 ft, long hole and groove	Friable	n/d	n/a	n/a	n/a
AS4b				n/d			
AS4c				n/d			
AS6a	2nd Floor Cafeteria	CT2 ceiling tile, 2 ft by 4 ft,	Friable	n/d	n/a	n/a	n/a
AS6b				n/d			

SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	FRIABILITY[1]	ASBESTOS CONTENT[2]	CONDITION[3]	ESTIMATED QUANTITY	HAZARD RANKING[4]
AS6c		deep hole and groove		n/d			
AS7a*	Generator Room	Fibreglass parging wrap	Friable	n/d	n/a	n/a	n/a
AS7b*				n/d			
AS7c*				n/d			
AS7a*		Yellow fibrous insulation	Friable	n/d	n/a	n/a	n/a
AS7b*				n/d			
AS7c*				n/d			
AS8a	1st Floor General Office Space	Grey putty/sealant around duct	Non-friable	n/d	n/a	n/a	n/a
AS8b				n/d			
AS8c				n/d			
AS9a*	Public Cafeteria / Lobby	FT2 – orange seamless floor	Non-friable	n/d	n/a	n/a	n/a
AS9b*				n/d			
AS9c*				n/d			
AS9a*		FT2 flooring underlay	Non-friable	n/d	n/a	n/a	n/a
AS9b*				n/d			
AS9c*				n/d			
AS10a*	2nd Floor Visitor Area Lobby	FT3 – yellow seamless flooring	Non-friable	n/d	n/a	n/a	n/a
AS10b*				n/d			
AS10c*				n/d			
AS10a*		FT3 flooring underlay	Non-friable	n/d	n/a	n/a	n/a
AS10b*				n/d			
AS10c*				n/d			
AS11a	2nd floor Visitor Area Hallway	CT3 ceiling tile – 2 ft by 4 ft with groove in middle	Friable	n/d	n/a	n/a	n/a
AS11b				n/d			
AS11c				n/d			
AS12a	2nd Floor Public Washroom	Grey coarse plaster above ceiling tile	Friable	n/d	n/a	n/a	n/a
AS12b				n/d			
AS12c				n/d			
AS13a	Office Near Public Reception	Black fire sealant	Non-friable	1% C	Good	Sporadic wall joints in building	7
AS13b				1% C			
AS13c				1% C			
AS14a	Front of Building Windows	Black Window Caulking	Non-friable	n/d	n/a	n/a	n/a
AS14b				n/d			
AS14c				n/d			

SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	FRIABILITY[1]	ASBESTOS CONTENT[2]	CONDITION[3]	ESTIMATED QUANTITY	HAZARD RANKING[4]
AS15a	Front of Building, 2nd Floor Office	CT4 ceiling tile – 2 ft by 2 ft tile	Friable	n/d	n/a	n/a	n/a
AS15b				n/d			
AS15c				n/d			
AS17a	Exterior Building,	White textured wall plaster	Friable	n/d	n/a	n/a	n/a
AS17b				n/d			
AS17c				n/d			
AS18a	Exterior Building	Grey coarse grained plaster (behind white coat)	Friable	n/d	n/a	n/a	n/a
AS18b				n/d			
AS18c				n/d			

Notes:

n/a Not analyzed
n/d Not detected (i.e. below laboratory method detection limit of 0.1%)
1 Friability is assessed as friable or non-friable (as defined by O. Reg. 278/05).
2 Type of Asbestos is Chrysotile (C), Amosite (A) or Other Fibre (O) with the total percentage of asbestos contained.
3 Quantity shown is for total quantity in building (see Sections 4.1.1 and 4.1.2 for a more detailed breakdown of location and quantity).
4 Hazard ranking tree shown in Appendix E.
* Additional layers were identified and analysed by the laboratory

4.1.1.1. Friable Materials

Pipe Elbows

As part of the survey, **friable pipe (mud) elbows** within the garage/service portion of the building were identified to contain 36% chrysotile asbestos. The pipe elbows were located, but not limited to, within the mezzanine (2nd floor) storage rooms (i.e. map storage room), generator room, garage mezzanine. The majority of pipe elbows were identified to be in good condition but a limited number were identified be in poor condition. However, no debris was associated with the pipe elbows at the time of the site survey.

Based on initial estimates, approximately 30 to 60 asbestos mud elbows are located within the garage portion of the building. Based on the hazard ranking tree, a hazard ranking of 3 is associated with these materials as some are slightly damaged (some of the elbows) and are easily accessible to all staff. It is noted that a significantly damaged pipe elbow in the map storage room (Sampling location 3a should be repaired and/or removed) not withstanding any future plans for renovations.

The following friable materials were sampled and identified *not* to contain asbestos:

- Drywall Compound throughout the building;
- Grey plaster on interior walls (ceiling space of public washrooms);
- Exterior white stucco/textured plaster;
- Exterior grey base plaster; and,
- A variety of ceiling tiles.

4.1.1.2. Non-friable Materials

Black Fire Sealant

Black sealant (potential fire stop material) was sporadically identified within the subject building and was identified to contain 1% of chrysotile asbestos. The fire-sealant was predominantly identified within joints/seams/cracks between the drywall walls and / or drywall/concrete seams. The material is described as a sticky adhesive material.

Estimates with regards to the quantity of the material are difficult at this time given that the material is located sporadically and only in limited areas. However, given that the material is non-friable, a hazard ranking of 7 is associated with the material as it is unlikely to release air-born fibres and it is located above ceiling tiles.

The following non-friable materials were sampled and identified *not* to contain asbestos:

- Various flooring materials (as referenced in Table 2);
- Flooring adhesives;
- Various window caulking; and,
- Black/brown window caulking.

4.1.2. Lead-Based Paints and Lead-Containing Materials

The location of the paint samples are shown on the floor plan, in **Appendix B**. Analytical results are provided in **Appendix D**.

Table 3: Summary of Lead Paint Analyses

SAMPLE ID	SAMPLE LOCATION	SAMPLE COLOUR	LOCATION OF SIMILAR PAINT APPLICATIONS	LEAD CONTENT (PPM)
LS1	Locker door, garage	Cream	n/a	415.46
LS2	Map storage room door	Red/brown	n/a	<248.76
LS3	Map storage room door	Brown	n/a	<362.98
LS4	Map storage room walls	Light yellow	n/a	<597.01

SAMPLE ID	SAMPLE LOCATION	SAMPLE COLOUR	LOCATION OF SIMILAR PAINT APPLICATIONS	LEAD CONTENT (PPM)
LS5	Structural beams	Maroon	n/a	<188.5
LS6	Room 242B walls	Olive green	n/a	<407.33
LS7	Room 242B, window frame	Blue	n/a	<212.54
LS8	**Garage railings**	**Black**	**All railings in garage**	**4,905.03**
LS9	1-19, common area walls	Orange	n/a	<584.8
LS10	**Public area columns and doors**	**Dark Red**	**Various columns and doors**	**1,822.22**
LS11	Office 2-27	Grey	n/a	<461.89

Note: **Bold** indicates exceedence above 600 ppm of lead

The analytical results from the sampling program indicated that two of eleven samples displayed lead concentrations above the applicable criterion of 600 ppm.

It is noted that the lead-based paint applications were identified on railing/columns and some doors but were not identified on any of the walls within the building. It is also noted that the lead-based paints (i.e. black and red paint) were identified to be in fair to good condition with no significant peeling and/or flaking. As a result, there is no immediate concern regarding exposure to the painted surfaces. Refer to Section **5.1.2** for recommendations when handling the material.

4.1.3. Mercury-Containing Equipment

Based on a review of the building, it is estimated that approximately 300 to 400 fluorescent light tubes are present within the building

Three of the thermostats observed within the subject building were identified to contain mercury. Approximately five of the thermostats were observed to be locked and Trow could not review the contents of the thermostats. All remaining thermostats were identified to be electronically controlled.

4.1.4. Silica

Materials that likely contain silica within the visitor centre include:

- Plaster and textured plaster building exterior;
- Concrete block walls that form main walls and some exterior walls;
- Drywall interior walls;
- Acoustic ceiling tiles;
- Ceramic tiles on walls and floor of the bathrooms; and

- Poured concrete flooring and ceilings.

These materials were observed to be in good condition with no evidence of silica-associated debris.

4.1.5. Other Designated Substances

Based on field observations and the on-site activities, there is no reason to believe that the following substances are present in the construction materials of the building in sufficient quantities to exceed the Ministry of Labour exposure limits: vinyl chloride, isocyanates, arsenic, ethylene oxide, benzene or acrylonitrile.

4.1.6. PCB-Containing Equipment

Fluorescent lighting is common within the building and it is understood that garage portion of the building dates back prior to the 1970's. As a result, there is the potential that the ballasts may contain PCB-bearing oils. However, it is understood that a thorough building renovation, including retrofitting of the lighting system was reported to have occurred in 1994.

Trow did not identify any transformers or other materials that would be anticipated to contain PCBs.

4.1.7. Ozone-Depleting Substances (ODS)

Two pad-mounted air-conditioners are located outside of the building. Trow reviewed the air-conditioning units but the tags were not legible at the time. However, the air-conditioners appeared to be dated and likely contain ODSs containing refrigerant.

Roof-top air-conditioning/HVAC system could not be accessed. It is anticipated that the roof-top air-conditioners are used to cool the front of the building.

Cooling systems with associated compressors provide cool air to the walk-in cooler located within the garage to store dead animals. The specific refrigerant for the cooling system could not be identified.

The remaining sources of ODS within the building would stem from refrigerant used for the refrigerators within cafeteria/kitchens, fountains and water coolers. The specific refrigerant within these devices are unknown.

4.1.8. Urea-Formaldehyde Foam Insulation

No suspected UFFI or areas where the material would have been injected were identified during the site visit. No evidence of pin holes was identified within the building that would be associated with injecting UFFI.

4.1.9. Bird and Animal Droppings

No evidence of bird and/or animal droppings were identified at the time of the survey. No evident entry holes for birds and/or animals were identified within the majority of the building.

It is noted that dead animals are located within a walk-in cooler (in the garage). Although the room was not fully assessed for animal droppings, droppings are not anticipated given that the animals are dead prior to being placed in the cooler.

4.1.10. Mould

Minor staining was identified on some acoustical ceiling tiles near the side entrance to the visitor centre. However, no notable evidence of mould (i.e. black/green discolouration) was identified within the building.

4.2. Limited DSS Discussion

Trow completed a visual DSS on three buildings on this property asset which included the garage, storage sheds and a lost dog storage unit. The survey was completed as per the scope of work **(Section 1.4)** and the results are summarized in a limited DSS Table in Appendix A. No samples were collected for analysis, however, the following potential special attentions substances were identified on the various building.

- Garage (BA 345282)
    - Potential asbestos (non-friable tar shingles on the roof, in good condition);
    - Potential lead-based paints (brown, green and black paint in fair condition);
    - Mercury (fluorescent light tubes);
    - Silica (poured concrete floor, good condition).
- Storage Shed (BA 244157)
    - Potential asbestos (non-friable tar sheet shingle, fair to good condition);
    - Potential lead-based paints (brown/beige paint on doors, some minor flaking/peeling);
    - Silica (concrete floor and concrete block walls).
- Dog Storage Shed (BA 346913)
    - Potential lead-based paints (yellow cabinet, red paint on metal panel walls);
    - Silica (poured concrete floor)

Based on a review of these buildings, no evidence of debris associated with special attention substances was identified. None of the aforementioned materials were in a condition that would

require immediate attention / repair to minimize any health risks at this time. Nevertheless, the recommendations in **Section 5.2** are to be followed when handling the aforementioned materials.

5.0 Recommendations

5.1. Full DSS

The following designated substances and special handling materials were identified:

- Asbestos;
- Lead;
- Silica;
- PCBs; and
- Mercury;

No potential sources of UFFI, animal droppings, mould, and other designated substances or special handling materials were identified.

The recommended remedial/management options for each of the designated substances and/or special handling materials identified during the survey are presented below.

5.1.1. Asbestos-Containing Materials

The following recommendation should be considered when reading the detailed removal options. In the case that the ACMs are not to be removed, it is suggested that an Asbestos Management Program be commenced as per Section 7 and 8 of O.Reg. 278/05.

Mud Elbows

The mud elbows identified within the main rooms of the building were determined to contain asbestos, and it is estimated that there are approximately 30 to 60 elbows. It is noted that a damaged elbow was identified in the 2nd floor map storage room and should be removed and/or repaired. Since the material is found on pipes, the material could likely be removed using Moderate Risk operations in accordance with Section 3.23.15 of R.Q.c.S-2.1,r.6) assuming a glove bag is used

Fire Sealant

The fire sealant identified was non-friable and generally in good condition. The quantity was limited to seams between drywall and concrete. As a result, if the material is to be removed, a Low Risk removal operation would be required as per Section 3.23.14.1 of R.Q.c.S-2.1,r.6)

5.1.2. Lead-Based Paints and Lead-Containing Materials

For all painted surfaces above the applicable criteria, necessary protective equipment should be worn to reduce the risk of lead-dust inhalation to any workers when the buildings are being demolished. Activities involving abrasion or sanding of painted surfaces should be minimized. Appropriate personal protective equipment (i.e., respirators, gloves and eye protection) should be worn when undertaking any such activities.

It is recommended that the Ontario Ministry of Labour's Guideline "Lead on Construction Projects", September, 2004 be followed during the proposed building demolition for the handling of lead-based paint and potential lead-based pipes.

Type 1 operations should be followed in the case that manual tools (with the exception of scraping/sanding tools) are used to remove paints. Conversely, Type 2 operations should be followed if scraping is used to remove paint and/or demolish walls using sledgehammers or similar tools.

5.1.3. Mercury-Containing Equipment

Exposure to mercury is regulated under Ontario Regulation 844/90 (amended to O. Reg. 110/04). All mercury containing equipment should be removed and re-used/recycled or disposed prior to any renovations in accordance with applicable regulations, if they are to be disturbed as part of the renovation program.

5.1.4. PCBs

All handling and removal of PCB-containing equipment, including storage, should be conducted as specified in Federal Regulations SOR/2008-273 and Ontario Regulation 362.

When the fluorescent light ballasts are to be removed from service, they should be stockpiled and assessed for PCB content by comparing the coding on the surface of each ballast with the Environment Canada publication EPS 2/CC/2 entitled, *Identification of Lamp Ballasts Containing PCBs*, revised August 1991. Ballasts that are found to be PCB-containing should be separated from non-PCB-containing ballasts, and then taken to a licensed PCB destruction facility.

Disposal of PCB-containing equipment must be conducted in accordance with Ontario Regulations 362 and 347.

5.1.5. Silica

Exposure to airborne silica is regulated under Ontario Regulation 845/90 (amended to O. Reg. 606/05) regarding silica under the OHSA. Airborne silica can be generated through such processes as blasting, grinding, crushing, and sandblasting silica-containing material such as concrete block walls, poured concrete flooring and other materials. Precautions must be taken to

prevent silica-containing particles from becoming airborne during the application of such processes. Such precautions include wetting of silica-containing area(s) to be disturbed and daily wet sweeping or HEPA vacuuming of silica dust. Additionally, appropriate respiratory protection and ventilation must be utilized during disturbance of silica-containing structures. The aforementioned recommendations and precautions should be adhered to during the demolition of all on-site buildings.

It is recommended that the Ministry of Labour's Guideline "Silica on Construction Projects", September, 2004 be followed during the proposed building demolition for the handling of lead-based paint and potential lead-based pipes.

5.1.6. Ozone Depleting Substances

As part of the on-going building maintenance, all sources of ODS should be removed from the dismantling/removing the equipment from the property. In accordance with Reg. 189/94, any removal and disposal of refrigeration equipment should only be undertaken by individuals who hold ozone depletion prevention cards. Disposal of any refrigeration equipment and/or refrigerant containers is regulated under Ontario Regulation 189/94 (amended to O.Reg. 238/01).

5.2. Limited DSS

5.2.1. Asbestos-Containing Materials

Until confirmed not to be asbestos through sampling, the tar shingled roof should be removed (if planned to be removed) using Low Risk removal operations as per Section 3.23.14.1 of R.Q.c.S-2.1,r.6) . In the case that the materials are confirmed to be ACMs and are not to be removed, it is recommended that an Asbestos Management Program be commenced as per Section 7 and 8 of O.Reg. 278/05.

5.2.2. Lead-Based Paints and Lead-Containing Materials

Until confirmed not to be lead-based through sampling, necessary protective equipment should be worn to reduce the risk of lead-dust inhalation to any workers when disturbing the paint material. Activities involving abrasion or sanding of painted surfaces should be minimized. Appropriate personal protective equipment (i.e., respirators, gloves and eye protection) should be worn when undertaking any such activities.

It is recommended that the Ministry of Labour's Guideline "Lead on Construction Projects", September, 2004 be followed during the proposed building demolition for the handling of lead-based paint and potential lead-based pipes.

Type 1 operations should be followed in the case that manual tools (with the exception of scraping/sanding tools) are used to remove paints. Conversely, Type 2 operations should be followed if scraping is used to remove paint and/or demolish walls using sledgehammers or similar tools.

5.2.3. Mercury-Containing Equipment

Exposure to mercury is regulated under Ontario Regulation 844/90 (amended to O. Reg. 110/04). All mercury containing equipment should be removed and re-used/recycled or disposed prior to any renovations in accordance with applicable regulations, if they are to be disturbed as part of the renovation program.

5.2.4. PCBs

All handling and removal of PCB-containing equipment, including storage, should be conducted as specified in Federal Regulations SOR/2008-273 and Ontario Regulation 362.

When the fluorescent light ballasts are to be removed from service, they should be stockpiled and assessed for PCB content by comparing the coding on the surface of each ballast with the Environment Canada publication EPS 2/CC/2 entitled, *Identification of Lamp Ballasts Containing PCBs*, revised August 1991. Ballasts that are found to be PCB-containing should be separated from non-PCB-containing ballasts, and then taken to a licensed PCB destruction facility.

Disposal of PCB-containing equipment must be conducted in accordance with Ontario Regulations 362 and 347.

5.2.5. Silica

Exposure to airborne silica is regulated under Ontario Regulation 845/90 (amended to O. Reg. 606/05) regarding silica under the OHSA. Airborne silica can be generated through such processes as blasting, grinding, crushing, and sandblasting silica-containing material such as concrete block walls, poured concrete flooring and other materials. Precautions must be taken to prevent silica-containing particles from becoming airborne during the application of such processes. Such precautions include wetting of silica-containing area(s) to be disturbed and daily wet sweeping or HEPA vacuuming of silica dust. Additionally, appropriate respiratory protection and ventilation must be utilized during disturbance of silica-containing structures. The aforementioned recommendations and precautions should be adhered to during the demolition of all on-site buildings.

It is recommended that the Ministry of Labour's Guideline "Silica on Construction Projects", September, 2004 be followed during the proposed building demolition for the handling of lead-based paint and potential lead-based pipes.

6.0 General Limitations

The services performed and outlined herein were based in part, upon visual observations of the site and attendant structures. Our opinion cannot be extended to portions of the site that were unavailable for direct observation by objects or coverings at the time of our observations.

Any of our observations relating to designated substances at the site are described in this report. Where testing was performed, it was executed in accordance with our contract for these services. It should be noted that other compounds or materials not tested for might be present in the building.

The objective of this report was to survey the environmental conditions at the site within the context of our contract with respect to the existing regulations within the applicable jurisdiction. Compliance of past and current owners with applicable local, provincial and federal government laws and regulations was not included in our contract for services.

The conclusions of this report are based, in part, on the information provided by others and any testing and analyses described in the report. The possibility remains that unexpected environmental conditions may be encountered at the site locations not explored. Should such an event occur, Trow should be notified in order that we may determine if modifications to our conclusions are necessary.

This report has been prepared in accordance with generally accepted environmental study and/or engineering practices. No other warranties, expressed or implied, are made as to the professional services provided under the terms of our contract and included in this report.

We trust this report is satisfactory for your purposes. If you have any questions regarding our submission, please do not hesitate to contact this office.

Trow Associates Inc.

Shawn Doherty, P.Eng.
Environmental Engineer
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Appendix A:
DSS Summary Tables

Table 1: Designated Substance Survey
PA# 95799
OTEN00019509D

Building Name	Building Number	Room	General Building Construction					Potential Asbestos-Containing Materials					Potential Lead Paint			ODS	PCB		Mercury		Silica					UFFI	Mould	Other	Comments	
			Exterior	Walls	Floor	Ceiling	Roof	Friable	Results	Non-Friable	Results	Condition	colour	Results	condition		Ballasts	Transformers	Fluorescent light	Thermostat	Concrete	Drywall	Ceramic	Plaster	Brick					
Main building	99311	CO Locker 1,25	n/a	concrete blocks with no paint	tiles	concrete	n/a	n/a	na	FT1 described as brown floor tile with brown spots (Sample ID AS1A,B,C)	non-detect	good condition	brown on doors, cream on some walls (Sample ID LS1)	Brown = non lead LS1 = 415 ppm	good	fridge	ballasts	n/a	4 tubes	n/a	walls and ceiling	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Asb: AS1A,B,C (FT1), LS1-cream paint	• silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation • ODS refer to O.Reg. 189/94 (amended to O.Reg. 238/01
		2nd floor Map Storage	n/a	concrete block side walls with drywall inside	poured concrete	metal clad	n/a	drywall compound taken from interior wall above door (Sample ID AS2A,2B); **mud elbow around fibreglass (Sample ID AS3A,3B)**; paper around fibreglass	AS2=non-detect **AS3=36% chrysotile**	n/a	n/a	one damaged, five in good condition	red and brown on the door (Sample ID LS2), brown on the door (Sample ID LS3), cream on the concrete walls, yellow on the hallway facing wall (Sample ID LS4), maroon on the beams (Sample ID LS5)	LS2 = <248 ppm LS3 = <362 ppm LS4 = <597 ppm LS5 = <188 ppm	good with some peeling on beams	n/a	ballast 94	n/a	10 tubes	n/a	concrete block walls and poured floor	interior, south wall	n/a	n/a	n/a	n/a	n/a	n/a	the black tar identified to be asbestos was identified on the stairwell up to the meeting room and along the brick near the side public entrance, it is sporadic in nature	• asbestos elbows and sealant, (refer to R.Q.c.S-2.1,r.6) • silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation
		Dead Animal Room	n/a	concrete blocks with no paint	poured concrete	metal clad	n/a	drywall compound on some hallway facing walls,**ten mud elbows**	Drywall compound = non-detect **Mud elbows - asbestos**	n/a	n/a	good condition	red and brown on the door (Sample ID LS2), brown on the door (Sample ID LS3), cream on the concrete walls, yellow on the hallway facing wall (Sample ID LS4), maroon on the beams (Sample ID LS5)	non-lead	good with some peeling on beams	n/a	ballast 94	n/a	10 tubes	1 locked	concrete block walls and poured floor	hallway facing	n/a	n/a	n/a	n/a	n/a	n/a		• asbestos elbows (refer to R.Q.c.S-2.1,r.6) • silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation
		2nd Floor Hallway	n/a	drywall painted off-white/cream	ceramic tiles with some carpet in hallway and towards the office	CT1 (described as 2 ft by 4 ft tiles with long hole and groove) under a metal clad roof	n/a	CT1 (Sample ID AS4A,B,C)	non-detect	**black fire sealant (Refer to AS13)**	**asbestos**	good condition	cream/off white on walls	non-lead	good	n/a	ballast 94	n/a	6 tubes	1 locked	concrete under ceramic floor	walls	floor	n/a	n/a	n/a	n/a	n/a		• asbestos sealant, (refer to R.Q.c.S-2.1,r.6) • silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation
		242B, 2nd Floor Office	n/a	drywall painted off-white	carpet	CT1 under metal clad roof	n/a	dywall compound (AS2C), CT1 ceiling tile	non-detect	n/a	n/a	good condition	off white and olive green on side walls (Sample ID LS6), blue on interior window overlooking this 1st floor (Sample ID LS7)	cream/off white = non lead LS6= <407 ppm LS7= <212 ppm	good	fridge and water cooler	ballast 94	n/a	30 tubes	n/a	concrete under floor	walls	n/a	n/a	n/a	n/a	n/a	n/a	exactly the same as 242B	• silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation • ODS refer to O.Reg. 189/94 (amended to O.Reg. 238/01
		Office Area Washroom	n/a	drywall painted off-white and door frames painted olive green	ceramic tiles with some carpet in hallway and towards the office	CT1 under metal clad roof	n/a	CT1 ceiling tile and drywall	non-detect	n/a	n/a	good condition	off-white/cream and olive green on doors	non-lead	good	n/a	ballast 94	n/a	20 tubes	n/a	concrete under floor	walls	floor	n/a	n/a	n/a	water damage above showers	n/a	ceiling tiles above the shower space	• silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation
		Cafeteria	n/a	drywall painted off-white and door frames painted red/brown	ceramic tiles	CT2 (described as 2 ft by 4 ft tiles with deep hole and groove)	n/a	CT2 (Sample ID AS6A,B,C), drywall compound	non-detect	n/a	n/a	good condition	off white / cream and red brown on door frames	non-lead	good	two fridges	ballast 94	n/a	8 tubes	2 electric	concrete under floor	walls	floor	n/a	n/a	n/a	n/a	n/a		• silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation • ODS refer to O.Reg. 189/94 (amended to O.Reg. 238/01
		Garage	n/a	concrete blocks with cream paint	poured concrete with red and brown paint	metal clad	n/a	**about 40 elbows, including mezzanine area (Sample ID AS3C)**	**Mud elbows = 36% chrysotile**	n/a	n/a	fair to good condition	off-white/cream walls, red/brown floor, brown doors, black paint on railings (Sample ID LS8)	Off-white and brown = non-lead **LS 8 (black)= 4,905 ppm (lead)**	peeling on floor	hvac on roof of cold storage with no access	ballast 94	n/a	20 tubes	n/a	concrete block walls and poured floor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	none	• asbestos elbows (refer to R.Q.c.S-2.1,r.6) • paint (refer to MOL Guideline, Lead on Construction Projects, 2004) • silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation • ODS refer to O.Reg. 189/94 (amended to O.Reg. 238/01
		Generator Room	n/a	concrete blocks	poured concrete	metal clad	n/a	parging around fibreglass (Sample ID AS7A,B,C), **about 10 mud elbows**	Parging = non-detect **Mud elbows = asbestos**	n/a	n/a	fair to good condition	offwhite walls, red/brown floor, brown doors	non-lead	fair	n/a, general heating system and no refrigerator	ballast 94	n/a	10 tubes	n/a	concrete block walls and poured floor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	none	• asbestos elbows (refer to R.Q.c.S-2.1,r.6) • silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation
		1-23 , 1st Floor General Office	n/a	drywall with offwhite and olive green paint	carpet	CT1	n/a	CT1, drywall compound taken from entrance near stairwell (Sample ID AS2D,2E)	non-detect	carpet	n/a	good condition	olive green and offwhite	non-lead	good	n/a	ballast 94	n/a	16 tubes	n/a	concrete walls behind drywall	walls	n/a	n/a	n/a	n/a	n/a	n/a	none	• silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation
		1-19, Common Area	n/a	drywall with orange and cream paint, exterior painted olive green, interior painted off white	carpet	CT2 ceiling tile for high ceiling, drywall over offices	n/a	drywall compound (Sample ID AS2F,G)	non-detect	carpet	n/a	good condition	orange walls (Sample ID LS9)	LS9 = 584 ppm	good	water cooler	ballast 94	n/a	32 tubes	electric	concrete floor under carpet	walls and ceiling	n/a	n/a	n/a	n/a	n/a	n/a	none	• silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation • ODS refer to O.Reg. 189/94 (amended to O.Reg. 238/01
		1-20, 1-22	n/a	drywall painted off-white and olive green, concrete walls in 1-21 painted off-white, door painted red	carpet	drywall	n/a	drywall compound	non-detect	putty / bitumen coating around pipe duct (Sample ID AS8A,B,C)	non-detect	good condition	offwhite / cream walls, olive green walls, office white on concrete in magasine storage	non-lead	good	n/a	ballasts	n/a	40+ tubes	electric	concrete floor under carpet	walls and ceiling	n/a	n/a	n/a	n/a	n/a	n/a	none	• silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation

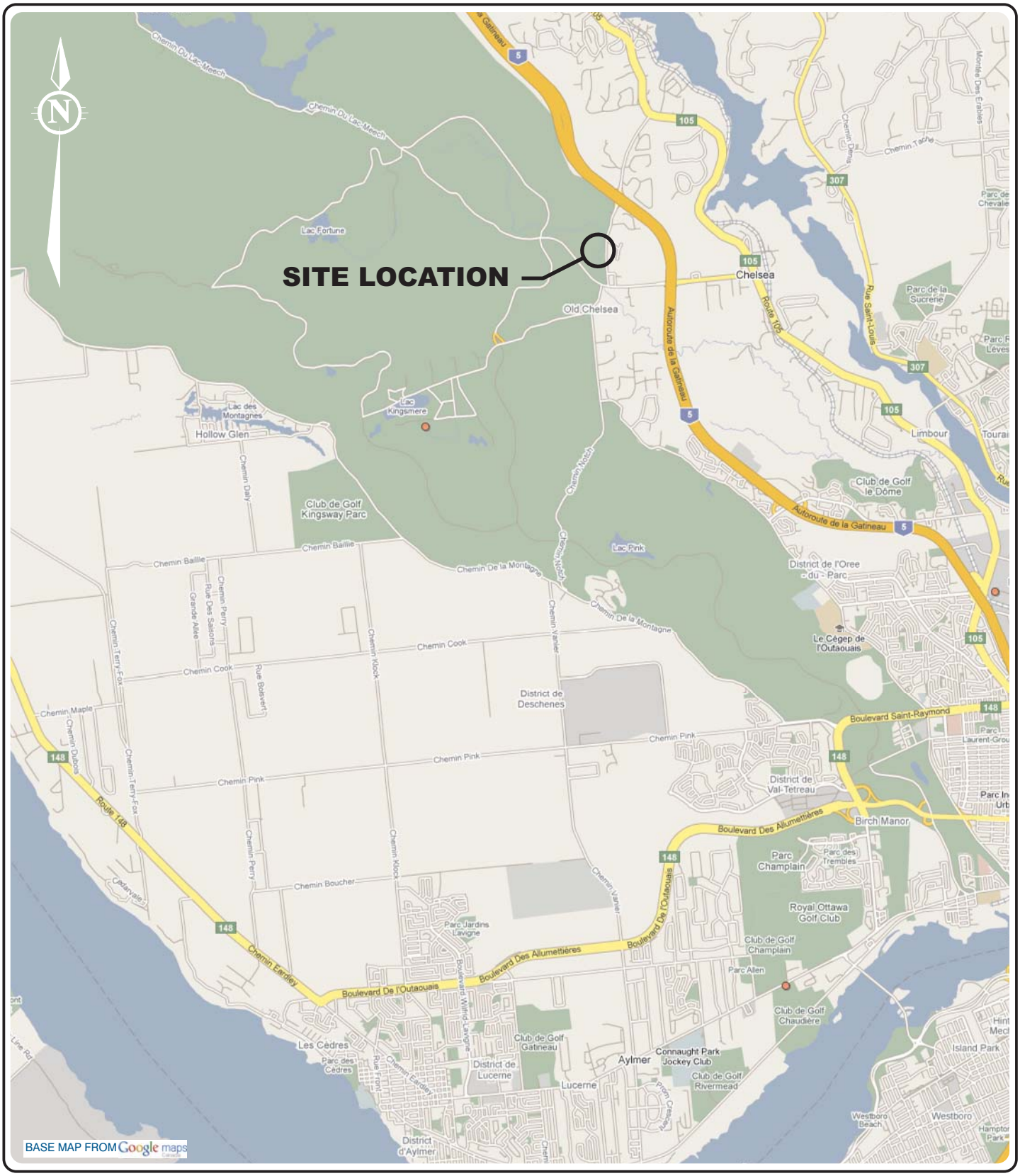
Building Name	Building Number	Room	General Building Construction					Potential Asbestos-Containing Materials					Potential Lead Paint			ODS	PCB		Mercury		Silica					UFFI	Mould	Other	Comments	
			Exterior	Walls	Floor	Ceiling	Roof	Friable	Results	Non-Friable	Results	Condition	colour	Results	condition		Ballasts	Transformers	Fluorescent light	Thermostat	Concrete	Drywall	Ceramic	Plaster	Brick					
Main building	99311	General Cafeteria/ lobby	n/a	drywall painted off-white and olive green	vt1 (described as orange seamless floor)	CT2 in locker area, drywall above cafeteria	n/a	drywall compound	non-detect	orange seamless floor - FT2 (Sample ID AS9A,B,C) **black sealant**	floor = non-detect **black sealant = asbestos**	good condition	offwhite / cream, olive green walls	non-lead	good	n/a	ballasts	n/a	30 tubes	electric	concrete under flooring	wall	n/a	n/a	n/a	n/a	n/a	n/a	none	• asbestos sealant (refer to R.Q.c.S-2.1,r.6) • silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and O.Reg.362
		2nd Floor Hallway	n/a	drywall painted olive green	vt2 (described as yellow seamless floor)	CT3 (described as 2 ft by 4 ft tiles with groove in middle)	n/a	CT3 ceiling tile (Sample ID AS11A,B,C), drywall compound	non-detect	yellow seamless flooring - FT3 (Sample ID AS10A,B,C), **black sealant**	floor = non-detect **black sealant = asbestos**	good condition	olive green walls	non-lead	good	n/a	n/a	n/a	standard lights no mercury	n/a	concrete walls behind drywall	walls	n/a	n/a	n/a	n/a	n/a	n/a	none	• asbestos sealant (refer to R.Q.c.S-2.1,r.6) • silica (refer to MOL Guideline, Silica on Construction Projects, 2004)
		2-27, Office	n/a	drywall painted off-white with grey paint on beam	vt2	CT1	n/a	CT1 ceiling tile	non-detect	FT3 floor	non-detect	good condition	offwhite / cream and grey (Sample ID LS11)	non-lead LS11 = <461 ppm	good	n/a	ballasts	n/a	10 tubes	n/a	concrete walls behind drywall	walls	n/a	n/a	n/a	n/a	n/a	n/a	none	• silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation
		2-22	n/a	drywall painted off-white	carpet and vt1 in the side room	CT1	n/a	CT1 ceiling tile	non-detect	FT1 floor in the side room	non-detect	good condition	offwhite / cream walls	non-lead	good	n/a	ballasts	n/a	20 tubes	electric	concrete walls behind drywall	walls	n/a	n/a	n/a	n/a	n/a	n/a	none	• silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation
		Washrooms	n/a	drywall with ceramic tiles at the base	ceramic tiles	CT1 and CT2	n/a	CT1 & CT2 ceiling tile,drywall compound AS12a,b,c (plaster walls)	non-detect	n/a	non-detect	good condition	offwhite / cream walls	non-lead	good	n/a	ballasts	n/a	10 tubes	identified to contain Hg in men's washroom	concrete walls behind drywall	walls	walls and floor	n/a	n/a	n/a	water damage in the mens washroom	n/a	some old plaster walls between the various washrooms (AS12A,B,C)	• silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs/mercury as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation
		Bill Mason	n/a	drywalll	vt2	CT1	n/a	CT1 ceiling tile, drywall compound	non-detect	FT2 floor	non-detect	good condition	olive green	non-lead	good	n/a	ballasts	n/a	10 tubes	identified to contain Hg	concrete walls behind drywall	walls	n/a	n/a	n/a	n/a	n/a	n/a	none	• silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs/mercury as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation
		Exhibit	n/a	drywall painted with a mural	vt2	CT1	n/a	CT1 ceiling tile, drywall compound	non-detect	FT2 floor	non-detect	good condition	offwhite / cream, mural	non-lead	good	n/a	n/a	n/a	n/a	electric	concrete walls behind drywall	some side walls	n/a	n/a	n/a	n/a	n/a	n/a	none	• silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs/mercury as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation
		2-08	n/a	drywalls painted off-white and red/brown	carpet	CT1	n/a	CT1 ceiling tile, drywall compound	non-detect	**black fire sealant (Sample ID AS13A,B,C)**	**1% chrysotile**	good condition	red/brown, offwhite/ cream	non-lead	good	n/a	ballasts	n/a	n/a	electric	concrete walls behind drywall	walls	n/a	n/a	n/a	n/a	n/a	n/a	grey sealant around duct, black sealant around fibreglass pipe	• asbestos sealant (refer to R.Q.c.S-2.1,r.6) • silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation
		Public Lobby	n/a	drywall painted beige/olive	vt1/vt2	CT1	n/a	CT1 ceiling tile, drywalll compound	non-detect	FT2 and FT3 flooring	non-detect	good condition	olive green, offwhite/cream	non-lead	good	fountain	n/a	n/a	n/a	n/a	concrete walls behind drywall	walls	n/a	n/a	n/a	n/a	n/a	n/a	none	• silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation • ODS refer to O.Reg. 189/94 (amended to O.Reg. 238/01
		Exterior, Public Building	wood siding over concrete blocks painted cream	n/a	n/a	n/a	n/a	n/a	n/a	brown window sealant (Sample ID AS14A,B,C)	non-detect	good condition	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	concrete block walls	n/a	n/a	n/a	n/a	n/a	n/a	n/a	none	• silica (refer to MOL Guideline, Silica on Construction Projects, 2004)
		2nd floor, Public Building	n/a	drywall painted off-white	carpet	CT4 (described as 2 ft by 2 ft tiles with holes)	n/a	CT4 ceiling tile (Sample ID AS15A,B,C), drywall compound	non-detect	carpet	n/a	good condition	offwhite, olive green door frames, red columns and doors (LS10)	**LS10 = 1,822 ppm (lead)** off-white/cream & olive = non-lead		fridge and water colour	ballasts	n/a	40 tubes	Hg suspected on column thermostat, 16 electrical	exterior walls	walls	n/a	n/a	n/a	n/a	n/a	n/a	none	• paint (refer to MOL Guideline, Lead on Construction Projects, 2004) • silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs/mercury as per O.Reg. 110/04) • PCB review ballasts as per SOR/2008-273 and provincial regulation • ODS refer to O.Reg. 189/94 (amended to O.Reg. 238/01
		Garage Building Exterior	windows and white textured plaster over coarse grey plaster	n/a	n/a	n/a	n/a	white text plaster on garage portion of building (Sample ID AS17A,B,C), grey coarse plaster on garage side behind white plaster(Sample ID AS18A,B,C)	non-detect	window sealant	non-detect	plaster debris in some areas	cream on plaster	non-lead	good with damage in some areas	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	exterior coating	n/a	n/a	n/a	n/a		• silica (refer to MOL Guideline, Silica on Construction Projects, 2004)

n/a - not applicable

Table 2#: Limited Designated Substance Survey
PA# 95799
OTEN00019509D

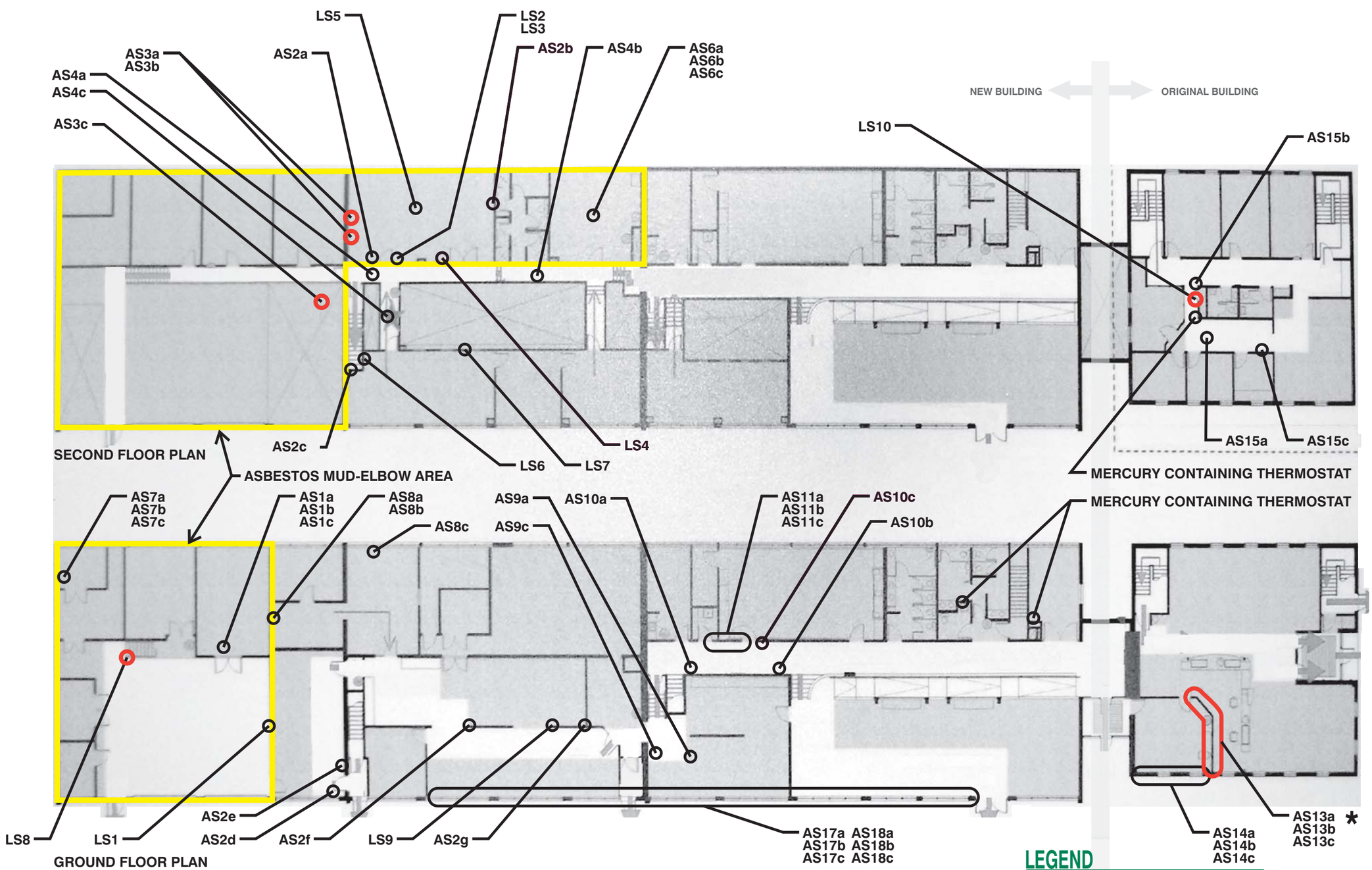
Building Name	Building Number	General Building Description	Room	General Building Construction					Potential Asbestos-Containing Materials			Potential Lead Paint		ODS	PCB		Mercury		Silica					UFFI	Mould	Other	Comments	Recommendations
				Exterior	Walls	Floor	Ceiling	Roof	Friable	Non-Friable	Condition	colour	condition		Ballasts	Transformers	Fluorescent light	Thermostat	Concrete	Drywall	Ceramic	Plaster	Brick					Refer to Section 5.2 of report for detailed recommendations
Garage	345282	One and a half storey wood constructed garage, complete with two garage doors, that sits on a poured concrete base and foundation. The garage is divided into two section, each used for storage, that are complete with mezzanines for additional storage. The building is provided with lighting. The building is in good condition.	exterior	1 1/2 storey garage with wood frame and wood panel construction	concrete base painted black and wood above painted brown as on the outside	n/a	n/a	tar shingled	n/a	potentially tar shingles	good	brown on exterior wood walls, green on garage doors, black on base	mostly in good condition, minor flaking of brown paint at base, wood is old and slighthy peeling, no evident debris identified	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	electricity supplied for light only, building used to store equipment, unfished building built using wood over concrete	• potential asbestos (tar shingles) (sample or refer to Low Risk operations as per R.Q.c.S-2.1,r.6) • paint, potentially lead (sample or refer to MOL Guideline, Lead on Construction Projects, 2004) • silica (refer to MOL Guideline, Silica on Construction Projects, 2004)
			Interior	n/a	Concrete base, wood walls from concrete to ceiling is black painted	concrete, wooden floor on mezzanine	wood ceiling with no paint under main ceiling and under mezzanine	n/a	n/a	n/a	n/a	black on interior walls	fair to good condition, no evident paint debris	n/a	2 ballasts -non PCB based on T8 fluorescent light tubes	n/a	4 T8 tubes	n/a	poured concrete floor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No evidence of heating or air-condition inside, building is not winterized (no insulation)	• paint, potentially lead (sample or refer to MOL Guideline, Lead on Construction Projects, 2004) • silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove/recycle bulbs as per O.Reg. 110/04)
Storage Shed	244157	One storey, bunker style, concrete block constructed storage building with a flat tar sheet roof. The building is divided into smaller storage rooms accessed by exterior doors. The building is provided with power for lighting.	exterior	concrete blocks walls, several doors at outside of building	n/a	n/a	n/a	flat roof tar-sheeting shingles	n/a	potentially tar sheet shingles	good	beige on doors, brown on door trim, none on concrete block	good condition	n/a	n/a	n/a	n/a	n/a	concrete block walls	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Concrete block building divided into smaller storage rooms, with a flat roof..	• potential asbestos (tar shingles) (sample or refer to Low Risk operations as per R.Q.c.S-2.1,r.6) • paint, potentially lead (sample or refer to MOL Guideline, Lead on Construction Projects, 2004) • silica (refer to MOL Guideline, Silica on Construction Projects, 2004)
			interior	n/a	concrete blocks (un-painted) form the interior walls and dividing walls of the storage shed	poured concrete floor, un-painted	un-painted wood panel ceiling	n/a	n/a	n/a	n/a	no paint on concrete, beige paint on interior of doors, brown paint on door trim	some minor flaking/peeling on door / door trim, no debris requiring immediate attention	n/a	n/a	n/a	standard bulbs, not mercury	n/a	concrete block walls and poured concrete floor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Building supplied with power for lighting, building is not winterized with no heat, insulation or air-conditioning.	• paint, potentially lead (sample or refer to MOL Guideline, Lead on Construction Projects, 2004) • silica (refer to MOL Guideline, Silica on Construction Projects, 2004)
Dog Storage Shed	346913	Small one storey metal clad building complete with insulation between walls and sits on a poured concrete floor. The building is provided with heat through a ceiling mounted fan and provided with light.	entire building	metal panels with red and brown paint	metal panels with no paint	poured concrete	metal panels with insulation above	metal panels	n/a	n/a	n/a	red on exterior walls, yellow on cabinet inside	some peeling paint on cabinet, no evident debris	n/a	n/a	n/a	standard bulbs - no mercury	**identifed to contain mercury**	poured concrete floor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Metal panels are painted, no access between walls to assess insulation	• paint, potentially lead (sample or refer to MOL Guideline, Lead on Construction Projects, 2004) • silica (refer to MOL Guideline, Silica on Construction Projects, 2004) • mercury (remove / handle thermostat as per O.Reg. 110/04)

Appendix B:
Figures



Trow Associates Inc.
154 Colonnade Road South, Ottawa, Ontario K2E 7J5
Tel: (613) 225-9940
Fax: (613) 225-7337

DATE: JANUARY 2010	CLIENT: NCC CCN Canada	JOB No.: OTEN00019509D
DESIGN: SD / CHECKED: CTK		SCALE: NA
DRAWN: MN	TITLE: SITE LOCATION - PA 95799, BA 99311 VISITORS CENTRE, GATINEAU PARK, GATINEAU, QC	FIG 1



LEGEND

AS1a	ACM SAMPLE LOCATION AND NUMBER
LS1	LEAD PAINT SAMPLE LOCATION AND NUMBER
AS1a	ACM EXCEEDENCE
LS1	LEAD PAINT EXCEEDENCE
*	BLACK SEALANT IN OTHER AREAS AS WELL

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Canada

NCC CCN

SAMPLE LOCATION PLAN - PA 95799, BA 99311
VISITORS CENTRE, GATINEAU PARK, QUEBEC

DATE	JANUARY 2010
SCALE	NA
DESIGN	SD
CHECKED	CTK
DRAWN	MN
JOB N°	OTEN00019509D

FIG 2

Appendix C:
Site Photographs

Visitor Centre Building (BA #99311)

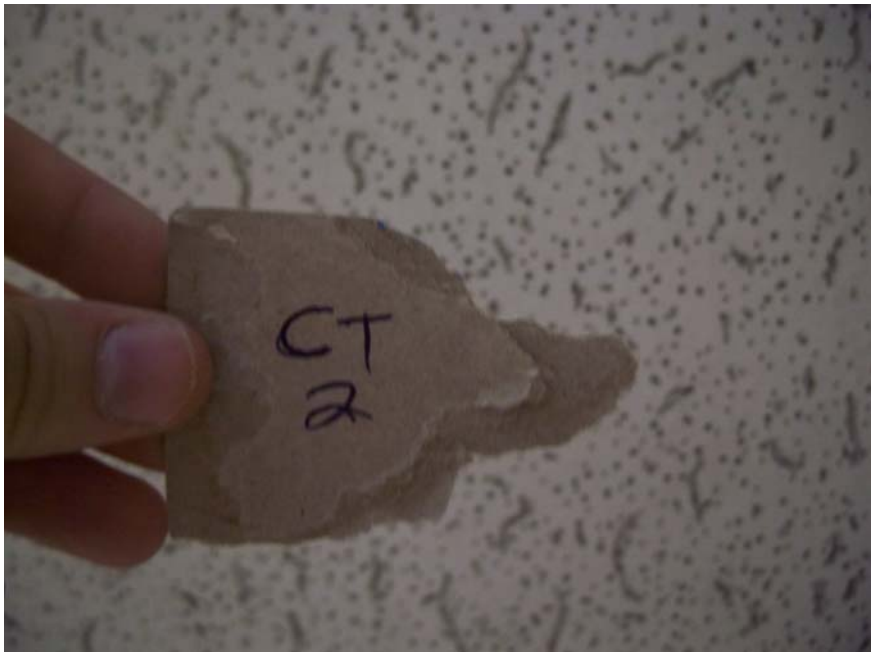
Photograph No. 1
Side view of the Gatineau Visitor Centre

Photograph No. 2
Asbestos-containing mud elbows

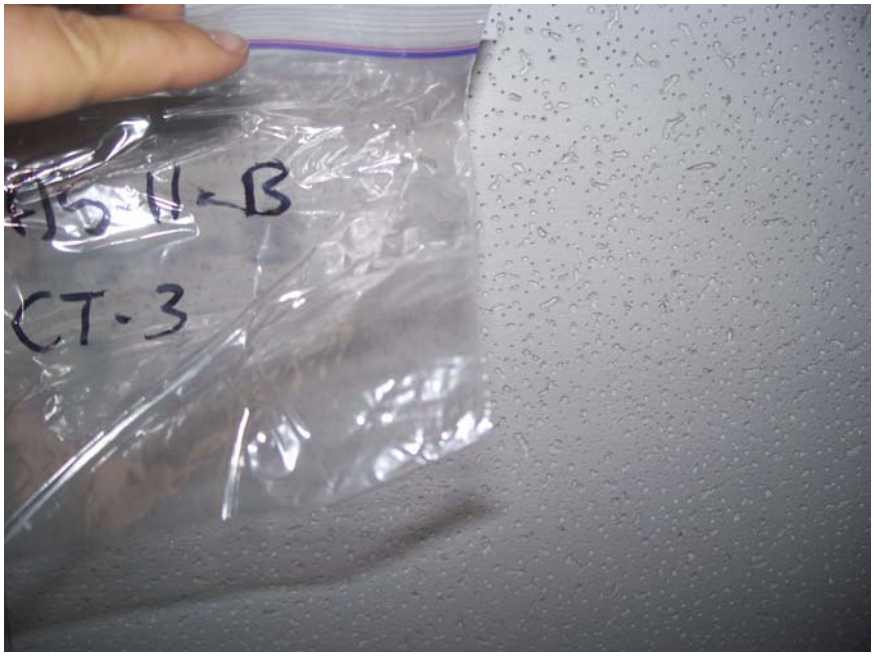
Photograph No. 3
Additional ACM mud elbows on mezzanine

Photograph No. 4
Asbestos-containing black sealant

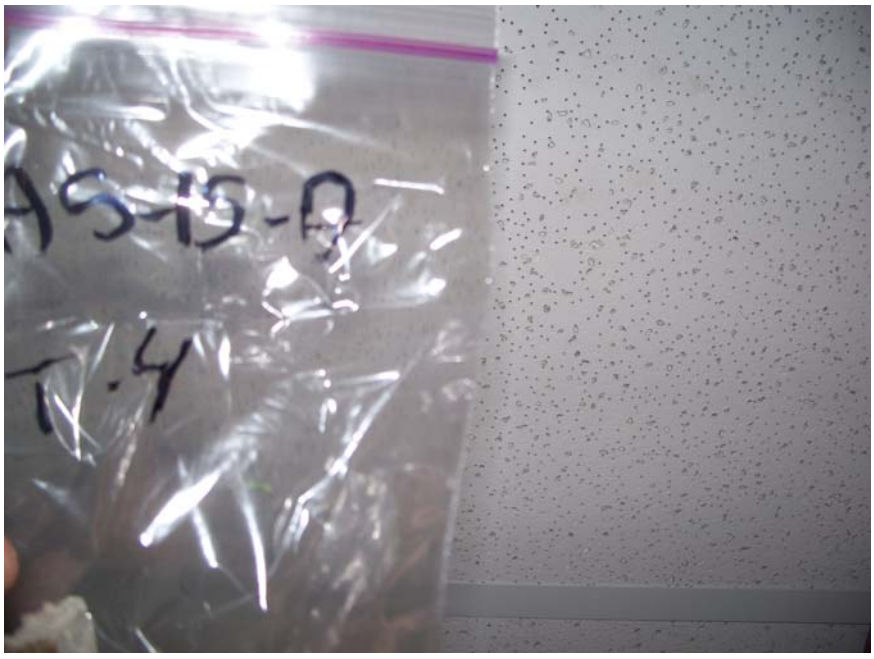
Photograph No. 5
CT1 ceiling tile (non-asbestos)



Photograph No. 6
CT2 ceiling tile (non-asbestos)

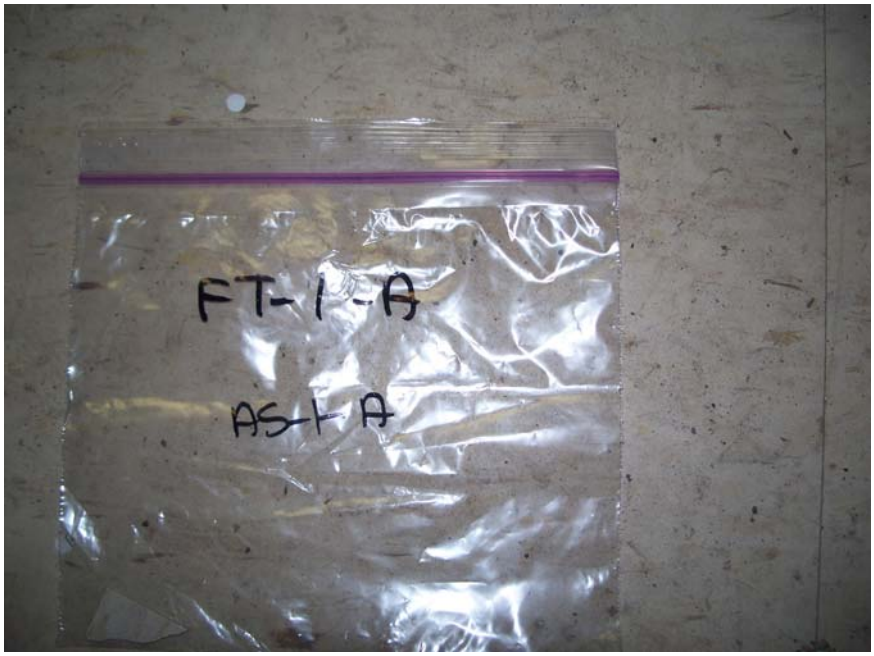


Photograph No. 7
CT3 ceiling tile (non-asbestos)



Photograph No. 8
CT4 ceiling tile (non-asbestos)

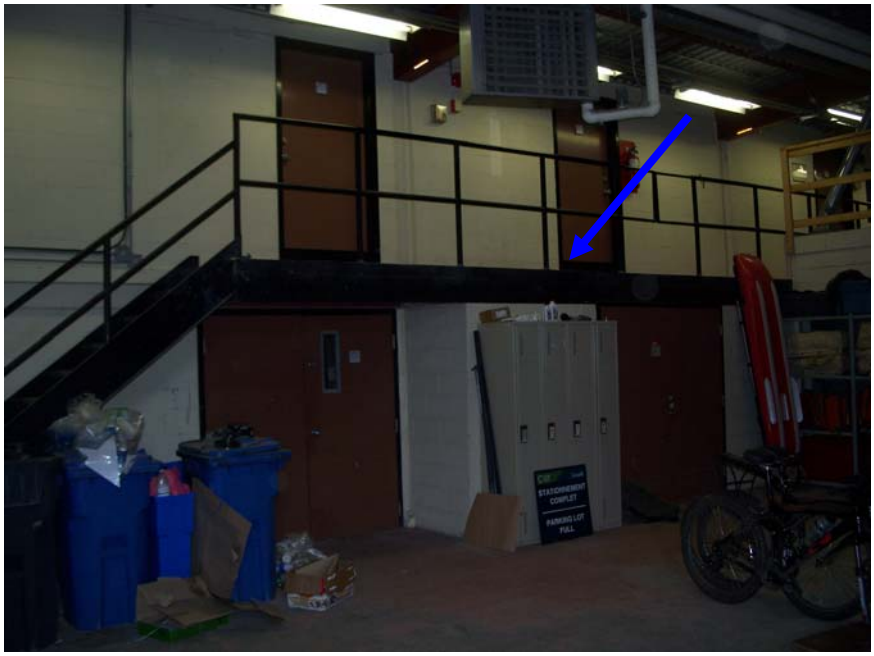
Photograph No. 9
FT3 seamless floor (non-asbestos)



Photograph No. 10
FT1 floor tile (non-asbestos)

Photograph No. 11
FT2 seamless flooring (non-asbestos)

Photograph No. 12
Mercury thermostat identified in offices.



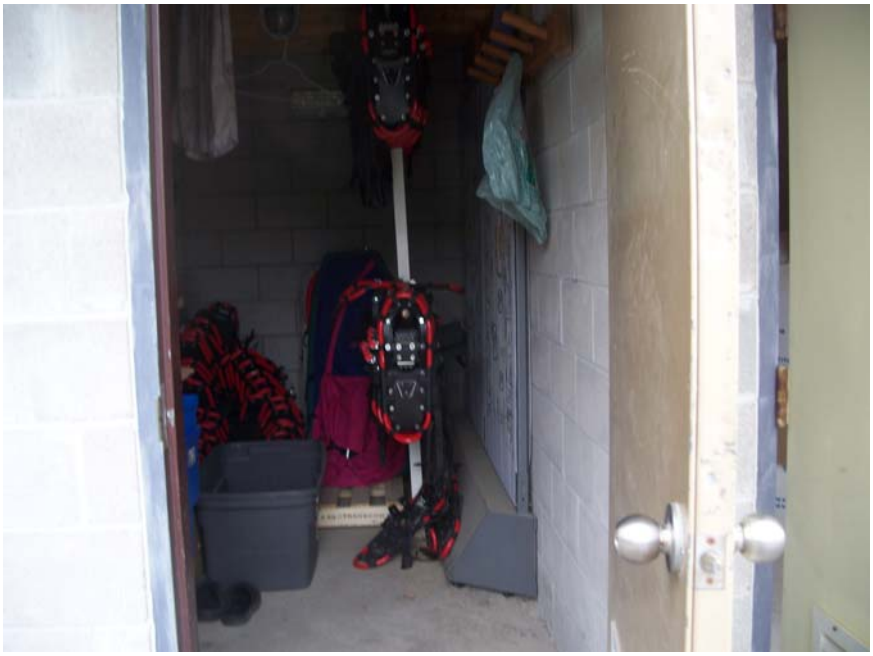
Photograph No. 13
Commonly identified fluorescent lights and lead-based black paint.

Garage Building (BA 345282)

Photograph No. 14
Front view of garage building.

Photograph No. 15
Interior view of the garage building.

Storage Building (BA 244157)



Photograph No. 16
Interior view of concrete block storage building.

Dog Storage Building (BA 346913)

Photograph No. 17
Dog storage building.

Photograph No. 18
Interior of dog storage building.

Appendix D: Laboratory Certificate of Analysis

CA Labs
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Phone 225-751-5632
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Materials Characterization - Bulk Asbestos Analysis

Laboratory Analysis Report - Polarized Light

Trow Associates, Inc.
154 Colonnade Road
Nepean, South Ottawa Canada K2E 7J5

Attn: Shawn Doherty
Customer Project: OTEN00019509D / Gatineau Visitor
Reference #: CBR09092018 Date 9/25/2009

Analysis and Method

Summary of polarizing light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved). The sample is first viewed with the aid of stereomicroscopy. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are preformed. Calibrated liquid refractive oils are used as liquid mouting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjugation with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated of asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the

Discussion

Vermiculite containing samples may have trace amounts of actinolite-tremolite, where not found be PLM should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may even contain a related asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be delectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Quantification of <1% will actually be reported as <=1% (allowable variance close to 1% is high). Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos and the "trace asbestos". **In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.**

Qualifications

CA Labs is accredited by NVLAP for selected test methods for bulk asbestos fiber analysis (PLM) and airborne fiber analysis (TEM). All analysts have a college degree in a natural science (geology, biology, or environmental science) or are recognized by a state professional board in one these disciplines .Extensive in-house training programs are used to augment education background of the analyst. The group leader of polarized light has received supplemental McCrone Research training for asbestos identification. This report is not covered by the scope of AIHA accreditation. Analysis performed at CA Labs, LLC 12232 Industriplex, Suite 32 Baton Rouge, LA 70809.

Baton Rouge NVLAP Lab Code 200772-0 TEM/PLM *TDH 30-0370*
LDEQ

CA Labs
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Overview of Project Sample Material Containing Asbestos

Customer Project: OTEN00019509D / Gatineau Visitor **CA Labs Project #:** CBR09092018

Sample #	Layer #	Analysts Physical Description of Subsample	Asbestos type / calibrated visual estimate percent	List of Affected Building Material Types
AS3a	*1*	*gray elbow insulation*	***36% Chrysotile***	***gray elbow insulation black sealant***
AS3b	*1*	*gray elbow insulation*	***36% Chrysotile***	
AS3c	*1*	*gray elbow insulation*	***36% Chrysotile***	
AS13a	*1*	*black sealant*	***1% Chrysotile***	
AS13b	*1*	*black sealant*	***1% Chrysotile***	
AS13c	*1*	*black sealant*	***1% Chrysotile***	

Baton Rouge NVLAP Lab Code 200772-0 TEM/PLM *TDH 30-0370*
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Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):

ca - carbonate
gypsum - gypsum
bi - binder
or - organic
ma - matrix
mi - mica
ve - vermiculite
ot - other
pe - perlite
qu - quartz
fg - fiberglass
mw - mineral wool
wo - wollastinite
ta - talc
sy - synthetic
ce - cellulose
br - brucite
ka - kaolin (clay)
pa - palygorskite (clay)

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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:** Shawn Doherty
Trow Associates, Inc.
154 Colonnade Road
Nepean, South Ottawa Canada K2E 7J5

Phone # 613-225-9940 ext. 303
Fax # 613-225-7337

Customer Project:
OTEN00019509D / Gatineau Visitor
Turnaround Time:
5 Day

CA Labs Project #:
CBR09092018

Date: 9/25/2009
Samples Received: 9/22/2009

Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
AS1a		*1*	*beige floor tile*	*Y*	***None Detected***		100% bi, ca, qu
AS1b		*1*	*beige floor tile*	*Y*	***None Detected***		100% bi, ca, qu
AS1b		*2*	*black mastic*	*Y*	***None Detected***	15% ce	85% ma
AS1c		*1*	*beige floor tile*	*Y*	***None Detected***		100% bi, ca, qu
AS2a		*1*	*white compound*	*Y*	***None Detected***		100% ca, gy, mi, qu
AS2b		*1*	*white compound*	*Y*	***None Detected***		100% ca, gy, mi, qu
AS2c		*1*	*white compound*	*Y*	***None Detected***		100% ca, gy, mi, qu

Baton Rouge NVLAP Lab Code 200772-0 TEM/PLM *TDH 30-0370*

LDEQ

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate	mi - mica	fg - fiberglass	ce - cellulose
gypsum - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
bi - binder	ot -other	wo - wollastinite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:

Andrew Linton
Analyst

Senior Analyst
Andrew Linton

Laboratory Director
Christopher Williams

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8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested

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OTEN00019509D / Gatineau Visitor
Turnaround Time:
5 Day

CA Labs Project #:
CBR09092018

Date: 9/25/2009
Samples Received: 9/22/2009

Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
AS2d		*1*	*white compound*	*Y*	***None Detected***	1% ce	99% ca, mi, qu
AS2e		*1*	*white compound*	*Y*	***None Detected***	1% ce	99% ca, mi, qu
AS2f		*1*	*white compound*	*Y*	***None Detected***	1% ce	99% ca, mi, qu
AS2g		*1*	*white compound*	*Y*	***None Detected***	1% ce	99% ca, mi, qu
AS3a		*1*	*gray elbow insulation*	*Y*	***36% Chrysotile***		64% ca
AS3b		*1*	*gray elbow insulation*	*Y*	***36% Chrysotile***		64% ca
AS3c		*1*	*gray elbow insulation*	*Y*	***36% Chrysotile***		64% ca

Baton Rouge NVLAP Lab Code 200772-0 TEM/PLM *TDH 30-0370*

LDEQ

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gypsum - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
bi - binder	ot -other	wo - wollastinite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:

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Analyst

Senior Analyst
Andrew Linton

Laboratory Director
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9. < 1% Result point counted positive
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Turnaround Time:
5 Day

CA Labs Project #:
CBR09092018

Date: 9/25/2009
Samples Received: 9/22/2009

Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
AS4a		*1*	*gray ceiling tile*	*Y*	***None Detected***	14% fg, 66% ce	20% bi
AS4b		*1*	*gray ceiling tile*	*Y*	***None Detected***	14% fg, 66% ce	20% bi
AS4c		*1*	*gray ceiling tile*	*Y*	***None Detected***	14% fg, 66% ce	20% bi
AS6a		*1*	*white ceiling tile*	*Y*	***None Detected***	20% fg, 70% ce	10% ca
AS6b		*1*	*white ceiling tile*	*Y*	***None Detected***	20% fg, 70% ce	10% ca
AS6c		*1*	*white ceiling tile*	*Y*	***None Detected***	20% fg, 70% ce	10% ca
AS7a		*1*	*white duct parging / wrap*	*N*	***None Detected***	13% ce, 20% sy	67% bi

Baton Rouge NVLAP Lab Code 200772-0 TEM/PLM *TDH 30-0370*

LDEQ

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate	mi - mica	fg - fiberglass	ce - cellulose
gypsum - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
bi - binder	ot -other	wo - wollastinite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:

Andrew Linton
Analyst

Senior Analyst
Andrew Linton

Laboratory Director
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9. < 1% Result point counted positive
10. TEM analysis suggested

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OTEN00019509D / Gatineau Visitor
Turnaround Time:
5 Day

CA Labs Project #:
CBR09092018

Date: 9/25/2009
Samples Received: 9/22/2009

Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
AS7a		2	*yellow fibrous insulation*	*Y*	***None Detected***	100% fg	
AS7b		1	*white duct parging / wrap*	*N*	***None Detected***	13% ce, 20% sy	67% bi
AS7b		2	*yellow fibrous insulation*	*Y*	***None Detected***	100% fg	
AS7c		1	*white duct parging / wrap*	*N*	***None Detected***	13% ce, 20% sy	67% bi
AS7c		2	*yellow fibrous insulation*	*Y*	***None Detected***	100% fg	
AS8a		1	*gray pipe sealant*	*Y*	***None Detected***		100% bi, ca
AS8b		1	*gray pipe sealant*	*Y*	***None Detected***		100% bi, ca

Baton Rouge NVLAP Lab Code 200772-0 TEM/PLM *TDH 30-0370*

LDEQ

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gypsum - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
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5 Day

CA Labs Project #:
CBR09092018

Date: 9/25/2009
Samples Received: 9/22/2009

Purchase Order #:

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AS8c		1	*gray pipe sealant*	Y	***None Detected***		100% bi, ca
AS9a		1	*orange vinyl flooring*	Y	***None Detected***	14% sy	86% bi, ca
AS9a		2	*fibrous underlay*	Y	***None Detected***	100% sy	
AS9b		1	*orange vinyl flooring*	Y	***None Detected***	14% sy	86% bi, ca
AS9b		2	*fibrous underlay*	Y	***None Detected***	100% sy	
AS9c		1	*orange vinyl flooring*	Y	***None Detected***	14% sy	86% bi, ca
AS9c		2	*fibrous underlay*	Y	***None Detected***	100% sy	

Baton Rouge NVLAP Lab Code 200772-0 TEM/PLM *TDH 30-0370*

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Date: 9/25/2009
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Purchase Order #:

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AS10a		1	*yellow vinyl flooring*	*Y*	***None Detected***	20% ce	80% bi, ca
AS10a		2	*fibrous underlay*	*Y*	***None Detected***	100% ce	
AS10b		1	*yellow vinyl flooring*	*Y*	***None Detected***	20% ce	80% bi, ca
AS10b		2	*fibrous underlay*	*Y*	***None Detected***	100% ce	
AS10c		1	*yellow vinyl flooring*	*Y*	***None Detected***	20% ce	80% bi, ca
AS10c		2	*fibrous underlay*	*Y*	***None Detected***	100% ce	
AS11a		1	*gray ceiling tile*	*Y*	***None Detected***	23% fg, 67% ce	10% bi

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Phone 225-751-5632
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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:** Shawn Doherty
Trow Associates, Inc.
154 Colonnade Road
Nepean, South Ottawa Canada K2E 7J5

Phone # 613-225-9940 ext. 303
Fax # 613-225-7337

Customer Project:
OTEN00019509D / Gatineau Visitor
Turnaround Time:
5 Day

CA Labs Project #:
CBR09092018

Date: 9/25/2009
Samples Received: 9/22/2009

Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
AS11b		*1*	*gray ceiling tile*	*Y*	***None Detected***	23% fg, 67% ce	10% bi
AS11c		*1*	*gray ceiling tile*	*Y*	***None Detected***	23% fg, 67% ce	10% bi
AS12a		*1*	*gray plaster*	*Y*	***None Detected***		100% ca, gy, qu
AS12b		*1*	*gray plaster*	*Y*	***None Detected***		100% ca, gy, qu
AS12c		*1*	*gray plaster*	*Y*	***None Detected***		100% ca, gy, qu
AS13a		*1*	*black sealant*	*Y*	***1% Chrysotile***		99% ca, ma
AS13b		*1*	*black sealant*	*Y*	***1% Chrysotile***		99% ca, ma

Baton Rouge NVLAP Lab Code 200772-0 TEM/PLM *TDH 30-0370*

LDEQ

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

ca - carbonate	mi - mica	fg - fiberglass	ce - cellulose
gypsum - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
bi - binder	ot -other	wo - wollastinite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:

Andrew Linton
Analyst

Senior Analyst
Andrew Linton

Laboratory Director
Christopher Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze
6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested

CA Labs
Dedicated to Quality

Crisp Analytical, L.L.C.
2081 Hutton, Suite 301
Carrollton, TX 75006
Phone 972-488-1414
Fax 972-488-8006

CA Labs, L.L.C.
12232 Industriplex, Suite 32
Baton Rouge, LA 70809
Phone 225-751-5632
Fax 225-751-5634

Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:** Shawn Doherty
Trow Associates, Inc.
154 Colonnade Road
Nepean, South Ottawa Canada K2E 7J5

Phone # 613-225-9940 ext. 303
Fax # 613-225-7337

Customer Project:
OTEN00019509D / Gatineau Visitor
Turnaround Time:
5 Day

CA Labs Project #:
CBR09092018

Date: 9/25/2009
Samples Received: 9/22/2009

Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
AS13c		*1*	*black sealant*	*Y*	***1% Chrysotile***		99% ca, ma
AS14a		*1*	*black caulking*	*Y*	***None Detected***	1% ce	99% bi, qu
AS14b		*1*	*black caulking*	*Y*	***None Detected***	1% ce	99% bi, qu
AS14c		*1*	*black caulking*	*Y*	***None Detected***	1% ce	99% bi, qu
AS15a		*1*	*white ceiling tile*	*Y*	***None Detected***	30% fg, 60% ce	10% ca
AS15b		*1*	*white ceiling tile*	*Y*	***None Detected***	30% fg, 60% ce	10% ca
AS15c		*1*	*white ceiling tile*	*Y*	***None Detected***	30% fg, 60% ce	10% ca

Baton Rouge NVLAP Lab Code 200772-0 TEM/PLM *TDH 30-0370*

LDEQ

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bi - binder	ot -other	wo - wollastinite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:

Andrew Linton
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Senior Analyst
Andrew Linton

Laboratory Director
Christopher Williams

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10. TEM analysis suggested

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Phone 225-751-5632
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Polarized Light Asbestiform Materials Characterization

Customer Info: **Attn:** Shawn Doherty
Trow Associates, Inc.
154 Colonnade Road
Nepean, South Ottawa Canada K2E 7J5

Phone # 613-225-9940 ext. 303
Fax # 613-225-7337

Customer Project:
OTEN00019509D / Gatineau Visitor
Turnaround Time:
5 Day

CA Labs Project #:
CBR09092018

Date: 9/25/2009
Samples Received: 9/22/2009

Purchase Order #:

Sample #	Comment	Layer #	Analysts Physical Description of Subsample	Homogeneous (Y/N)	Asbestos type / calibrated visual estimate percent	Non-asbestos fiber type / percent	Non-fibrous type / percent
AS17a		*1*	*white plaster*	*Y*	***None Detected***		100% ca, gy, qu
AS17b		*1*	*white plaster*	*Y*	***None Detected***		100% ca, gy, qu
AS17c		*1*	*white plaster*	*Y*	***None Detected***		100% ca, gy, qu
AS18a		*1*	*gray plaster*	*Y*	***None Detected***		100% ca, gy. Qu
AS18b		*1*	*gray plaster*	*Y*	***None Detected***		100% ca, gy. Qu
AS18c		*1*	*gray plaster*	*Y*	***None Detected***		100% ca, gy. Qu

Baton Rouge NVLAP Lab Code 200772-0 TEM/PLM *TDH 30-0370*

LDEQ

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)
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gypsum - gypsum	ve - vermiculite	mw - mineral wool	br - brucite
bi - binder	ot -other	wo - wollastinite	ka - kaolin (clay)
or - organic	pe - perlite	ta - talc	pa - palygorskite (clay)
ma - matrix	qu - quartz	sy - synthetic	

Approved Signatories:

Andrew Linton
Analyst

Senior Analyst
Andrew Linton

Laboratory Director
Christopher Williams

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CA Labs, L.L.C.
12232 Industriplex, Suite 32
Baton Rouge, LA 70809
Phone 225-751-5632
Fax 225-751-5634

Atomic Absorption Lead Report

Analysis Method: Lead in Paint analyzed by Atomic Absorption (AA)/SW-846-7420;
This analysis is not covered by the scope of accreditation by NVLAP or AIHA.

Sample Prep Method: Samples are dissolved in nitric acid, extracted, and analyzed on a properly calibrated AA; Absorbency curve was calculated, bandwidth corrected, and wavelength at the time of the analysis was measured and recorded.

Client Information:
Trow Associates, Inc.
154 Colonnade Road S
Ottawa, ON K2E 7J5

Client Project:
Gatineau Visitor

CA Labs Project #:
CBR09092019

Date: 09/25/09

Phone: 1-613-225-9940

Turnaround Time: 5 Day

Samples Received: 09/22/09

Fax: 1-613-225-7337

Attn: Shawn Doherty

Purchase Order #:

Sample#		Sample Concentration: parts per million (ppm)	Weight Percent:
LS1		415.46	0.0415
LS2		<248.76	<0.0249
LS3		<362.98	<0.0363
LS4		<597.01	<0.0597
LS5		<188.50	<0.0189
LS6		<407.33	<0.0407
LS7		<212.54	<0.0213
LS8		4905.03	0.4905
LS9		<584.80	<0.0585
LS10		1822.22	0.1822
LS11		<461.89	<0.0462
Lab Blank	< 1.00	----	----

Quality Control:
Duplicate: ____2.2____RPD

NVLAP # 200349-0

Approved Signatories:

TDH # 30-0235

Christopher Williams
Analyst

Christopher Williams
Laboratory Director

Andrew Linton
Senior Analyst

The current guidelines for lead in paint from the Consumer Products Safety Council (CPSC) is 0.06% by weight; the Housing and Urban Development (HUD) guideline is 0.5% by weight.
CA Labs is participating in ELPAT rounds sponsored by American Industrial Hygiene Association (AIHA) and National Lead Laboratory Program (NVLAP). This test report relates only to the items tested. This test reports relates only to the items tested. Neither AIHA, NVLAP nor EPA accreditation implies endorsement by any US Government agency. CA Labs is accredited by AIHA for fungi. This report may not be reproduced except in full without written permission from CA Labs.
These results are submitted pursuant to CA Labs' current terms and condition of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping and handling fee may be assessed for the return of any samples.
Analysis performed at Crisp Analytical Labs, LLC 12232 Industriplex suite 32, Baton Rouge, LA 70809; phone (225) 751-5632, fax (225) 751-5634.

CA Labs
Dedicated to Quality

Crisp Analytical, L.L.C.
2081 Hutton, Suite 301
Carrollton, TX 75006
Phone 972-488-1414
Fax 972-488-8006

CA Labs, L.L.C.
12232 Industriplex, Suite 32
Baton Rouge, LA 70809
Phone 225-751-5632
Fax 225-751-5634

Atomic Absorption Lead Report

Analysis Method: Lead in Paint analyzed by Atomic Absorption (AA)/SW-846-7420;
This analysis is not covered by the scope of accreditation by NVLAP or AIHA.

Sample Prep Method: Samples are dissolved in nitric acid, extracted, and analyzed on a properly calibrated AA; Absorbency curve was calculated, bandwidth corrected, and wavelength at the time of the analysis was measured and recorded.

Client Information:
Trow Associates, Inc.
154 Colonnade Road S
Ottawa, ON K2E 7J5

Client Project:
Gatineau Visitor

CA Labs Project #:
CBR09092019

Date: 09/25/09

Phone: 1-613-225-9940

Turnaround Time: 5 Day

Samples Received: 09/22/09

Fax: 1-613-225-7337

Attn: Shawn Doherty

Purchase Order #:

Sample#	Sample Concentration: parts per million (ppm)	Weight Percent:

Spike: ____97.1____% Recovery

NVLAP # 200349-0

Approved Signatories:

TDH # 30-0235

Christopher Williams
Analyst

Christopher Williams
Laboratory Director

Andrew Linton
Senior Analyst

CA Labs
Dedicated to Quality

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ATOMIC ABSORPTION
LEAD ANALYSIS
LABORATORY ANALYSIS REPORT

Trow Associates, Inc.
154 Colonnade Road S
Ottawa, ON K2E 7J5
reference number: CBR09092019

LABORATORY ANALYSIS:

Summary of lead analysis by atomic absorption in all relevant media using the method described in SW-846-7420. All analysts have received the necessary in-house and extramural training to perform analysis of samples for the presence of lead. A duplicate analysis is performed on greater than ten percent of all samples. A spiked concentration sample is analyzed with each sample group for instrument calibration. All analysts are required to participate in quality control analysis rounds. Instrument calibrations are performed on a daily, weekly, and monthly basis.

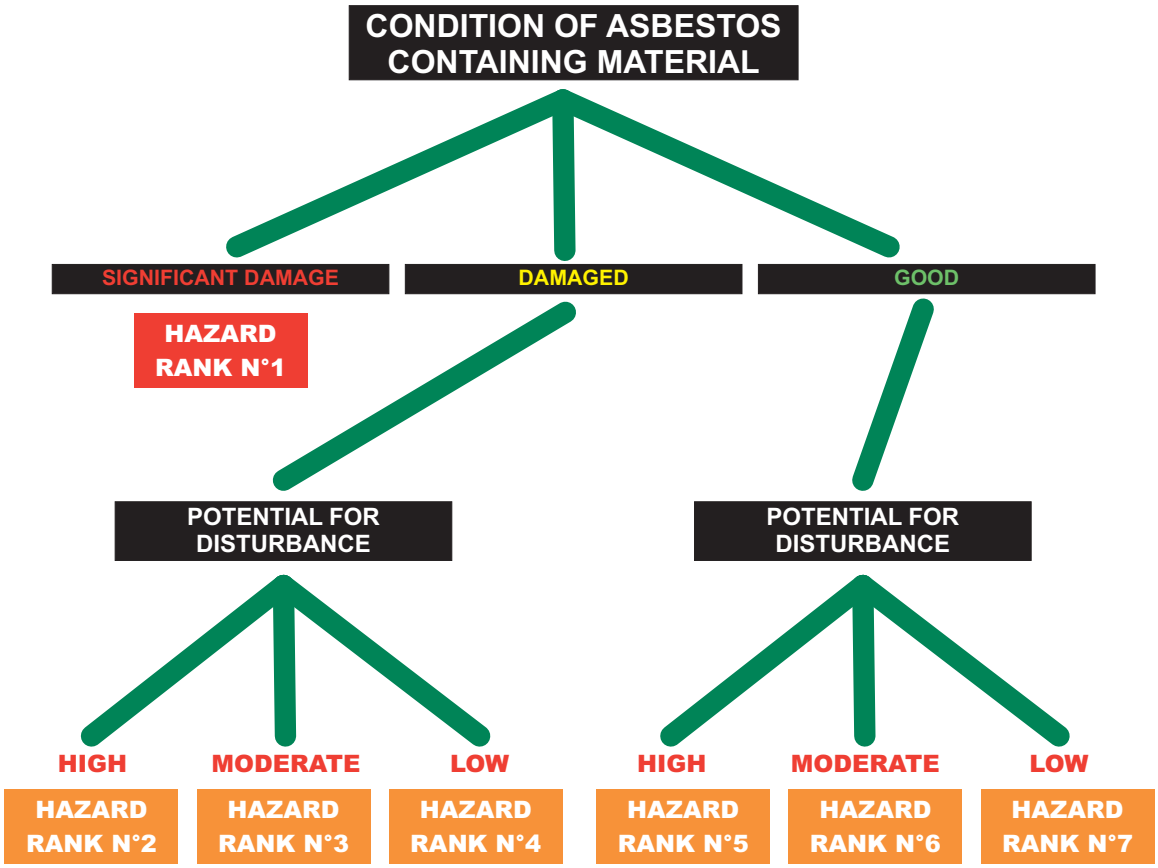
METHOD:

The procedure for paint chip analysis follows AOAC5.009(974.02) and SW-846-7420. The analysis of soil, wipes, and wastewater for the presence of lead is also referenced by SW-846-7420. Methodology for the analysis of lead in air samples follows NIOSH Method 7082.

Analysis performed at CA Labs, L.L.C. 12232 Industriplex Blvd suite 32, Baton Rouge, LA 70809: phone (225) 751-5632; fax (225) 751-5634.

Appendix E: Hazard Ranking Tree

Classifications for Asbestos Hazard Potential (Decision TreeDisplay)



NOTE:
SIGNIFICANT DAMAGE IS: 10% IF DAMAGE IS EVENLY DISTRIBUTED OR
25% IF DAMAGE IS LOCALIZED

Classifications for the level of Potential Disturbance

POTENTIAL FOR DISTURBANCE	FREQUENCY OF	INFLUENCE OF	POTENTIAL FOR AIR EROSION
HIGH (i.e. potential for significant damage)	ANY HIGH VALUE FOR ONE MORE OF THESE FACTORS		
MODERATE (i.e. potential for damage)	ANY MODERATE VALUE FOR ONE MORE OF THESE FACTORS		
LOW (i.e. little potential for damage)	ALL LOW VALUES		

Trow Associates Inc. 154 Colonnade Road South, Ottawa, Ontario K2E 7J5 Tel: (613) 225-9940 Fax: (613) 225-7337

DATE JANUARY 2010	CLIENT NCC CCN Canada	JOB No. OTEN00019509D
DESIGN SD / CHECKED CTK		SCALE NA
DRAWN MN	TITLE HAZARD RANKING TREE GATINEAU PARK FACILITIES	APPENDIX E