

HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Parks Canada Buildings
Kluane National Park
Haines Junction, YT



Prepared for:
Parks Canada
c/o Public Works and
Government Services Canada
1650 - 635 8 Avenue SW
Calgary, AB T2P 3M3

Prepared by:
Stantec Consulting Ltd.
202 107 Main Street
Whitehorse, YT, Y1A 2A7
Tel: (867) 633-2400
Fax: (867) 633-2481

Project No.: 144901924

November 19, 2014

DRAFT

Table of Contents

EXECUTIVE SUMMARY	I
1.0 INTRODUCTION	1
1.1 UNDERSTANDING OF THE PROJECT	1
2.0 SCOPE AND METHODOLOGY	1
2.1 ASBESTOS.....	2
2.1.1 Sample Results Interpretation	3
2.1.2 Potential Asbestos-Containing Vermiculite Insulation.....	3
2.1.3 Asbestos Sampling Quality Assurance/Quality Control	3
2.2 LEAD	4
2.3 POLYCHLORINATED BIPHENYLS	5
2.4 MERCURY	5
2.5 MOULD	5
2.5.1 Mould Reference Guidelines	6
2.6 OZONE-DEPLETING SUBSTANCES.....	6
2.7 SILICA.....	6
3.0 ASSESSMENT LIMITATIONS	7
3.1 ASBESTOS.....	7
3.2 LEAD	8
3.3 POLYCHLORINATED BIPHENYLS.....	8
3.4 MERCURY	8
3.5 MOULD	9
3.6 OZONE DEPLETING SUBSTANCES.....	9
3.7 SILICA.....	9
4.0 FINDINGS.....	9
5.0 GENERAL RECOMMENDATIONS	10
5.1 ASBESTOS.....	10
5.1.1 Renovation and Continued Operations	10
5.1.2 Demolition	11
5.2 LEAD	12
5.3 POLYCHLORINATED BIPHENYLS.....	12
5.4 MERCURY	12
5.5 MOULD	13
5.5.1 Renovation and Continued Operations	13
5.5.2 Demolition	13
5.6 OZONE DEPLETING SUBSTANCES.....	13
5.7 SILICA.....	14
6.0 CLOSURE.....	14

HAZARDOUS BUILDING MATERIALS ASSESSMENTS

LIST OF APPENDICES

APPENDIX A	BUILDING LIST	A.1
APPENDIX B	FINDINGS AND RECOMMENDATIONS – KNP HEADQUARTERS BUILDING.....	B.1
APPENDIX C	FINDINGS AND RECOMMENDATIONS – PUBLIC WASHROOMS BUILDING	C.1
APPENDIX D	FINDINGS AND RECOMMENDATIONS – STORES MAINTENANCE BUILDING.....	D.1
APPENDIX E	FINDINGS AND RECOMMENDATIONS – WARDENS OFFICE BUILDING	E.1
APPENDIX F	FINDINGS AND RECOMMENDATIONS – VEHICLE GARAGE BUILDING	F.1
APPENDIX G	FINDINGS AND RECOMMENDATIONS – BUTLER STORAGE SHED	G.1
APPENDIX H	FINDINGS AND RECOMMENDATIONS – FIRE CACHE.....	H.1
APPENDIX I	FINDINGS AND RECOMMENDATIONS – PUMP HOUSE	I.1
APPENDIX J	FINDINGS AND RECOMMENDATIONS – WELL SHED	J.1
APPENDIX K	FINDINGS AND RECOMMENDATIONS – SEWAGE TREATMENT BUILDING	K.1
APPENDIX L	FINDINGS AND RECOMMENDATIONS – HOUSE 1	L.1
APPENDIX M	FINDINGS AND RECOMMENDATIONS – HOUSE 2	M.1
APPENDIX N	FINDINGS AND RECOMMENDATIONS – HOUSE 2 GARAGE	N.1
APPENDIX O	FINDINGS AND RECOMMENDATIONS – HOUSE 3	O.1
APPENDIX P	FINDINGS AND RECOMMENDATIONS – HOUSE 3 GARAGE	P.1
APPENDIX Q	FINDINGS AND RECOMMENDATIONS – HOUSE 4	Q.1
APPENDIX R	FINDINGS AND RECOMMENDATIONS – HOUSE 4 GARAGE	R.1

Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by Parks Canada c/o Public Works and Government Services Canada (PWGSC) to conduct hazardous building materials assessments within 17 buildings (subject buildings) associated with Kluane National Park, at two separate locations in Haines Junction, YT.

The purpose of the assessment was to check for potential hazardous building materials that may require special attention in accordance with the Yukon Workers' Compensation Health and Safety Board (WCB) and the current version of the *Yukon Territory Occupational Health and Safety Act and Regulations* (YT OHS Reg.), prior to planned renovation and/or demolition activities.

The hazardous building materials considered included asbestos-containing materials (ACMs), lead-containing materials including lead-containing paints (LCPs), polychlorinated biphenyls (PCBs), mercury-containing items, ozone-depleting substances (ODSs), mould-impacted building materials and silica.

Based on Stantec's visual assessment and on the laboratory analyses performed on samples collected, hazardous building materials were identified within many of the subject buildings.

A summary of our findings and recommendations is presented below. It should be noted that this summary is subject to the same restrictions and limitations as presented in **Section 4** (Assessment Limitations) and **Section 7** (Closure). The information provided is to be read in conjunction with the remainder of this report.

NOTE: Where particular hazardous building materials are not listed in the following table, they were not identified in that particular building.

HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Summary of Identified Hazardous Building Materials	
Building Name	Identified Hazardous Building Materials
KNP Headquarters	
KNP Headquarters Building	<p>Asbestos</p> <ul style="list-style-type: none"> White mechanical gaskets in flanges of chilled water supply lines in the penthouse Black window pane caulking between window frames and glass panes throughout White 2'x4' ceiling tile – Standard fissure and pinhole (light red backing) throughout Black HVAC vent caulking around the seams of a vent from the penthouse to the roof 12"x12" vinyl floor tile – Brown with white streaks in various rooms throughout Exterior cement panel around the base of exterior walls <p>Lead</p> <ul style="list-style-type: none"> Grey paint on the floor of the penthouse is lead-containing Red paint on structural steel components throughout is lead-containing Beige paint on exterior railings is lead-containing Lead is expected to be present in solder used in copper domestic pipes, caulking on bell fittings for cast iron drainage pipes, and some electrical equipment <p>PCBs</p> <ul style="list-style-type: none"> It should be presumed that the majority of ballasts throughout are PCB containing <p>Mercury</p> <ul style="list-style-type: none"> Four (4) mercury-containing thermostats were observed Mercury vapour is expected be present in fluorescent light tubes <p>Mould</p> <ul style="list-style-type: none"> Moisture stained drywall was observed at the top of the South wall in the theater <p>Ozone-Depleting Substances</p> <ul style="list-style-type: none"> The small air conditioning unit located on the roof is suspected to contain ODSs <p>Silica</p> <ul style="list-style-type: none"> Silica may be present in concrete, cement, ceramic tiles, and acoustical ceiling tiles observed in various locations throughout
Public Washrooms Building	<p>Silica</p> <ul style="list-style-type: none"> Silica may be present in concrete and cement observed in various locations throughout
Farm Site	
Stores Maintenance Building	<p>Asbestos</p> <ul style="list-style-type: none"> Black window pane caulking between window frames and glass panes throughout Cream pipe sealant inside fittings of 2" decommissioned black pipes next to water tank in the pump room White window frame caulking between window frames and siding throughout the exterior Cream countertop mastic between counters and the wall in then brochure and furniture storage Grey caulking around loading bay doors both garage and exit doors

HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Summary of Identified Hazardous Building Materials	
Building Name	Identified Hazardous Building Materials
	<p>Lead</p> <ul style="list-style-type: none"> • Grey paint on interior trim is lead-containing • Red paint on structural steel is lead-containing • Lead is expected to be present in solder used in copper domestic pipes, caulking on bell fittings for cast iron drainage pipes, and some electrical equipment <p>Mercury</p> <ul style="list-style-type: none"> • One (1) mercury-containing thermostat was observed • Several suspected mercury containing thermometers were observed in the boiler room • Mercury vapour is expected be present in fluorescent light tubes <p>Mould</p> <ul style="list-style-type: none"> • Moisture stained ceiling tiles were observed in various locations throughout <p>Silica</p> <ul style="list-style-type: none"> • Silica may be present in concrete, cement, ceramic tiles, and acoustical ceiling tiles observed in various locations throughout
Wardens Office Building	<p>Asbestos</p> <ul style="list-style-type: none"> • Cement panel around the top of the walls in the boiler room. • Pipe fitting insulation throughout (cementitious insulation applied to elbows, t's, and valves) • Pipe straight insulation throughout ("Air-O-Cel" corrugated paper insulation on straight sections of pipe) • Grey/black roof flashing mastic on the seams of the aluminum roof of the basement exit stairwell • 9"x9" vinyl floor tile in basement room 12 (various colours, only the light green tiles are non-ACM) and the associated mastic (including that for the non-ACM light green tiles) • Grey window frame caulking (between window frame and the building) on the exterior of windows throughout • Black (painted brown) flashing sealant between the chimney and the roof • Black window pane caulking (between window frame and glass pane) on windows throughout • Drywall joint compound applied to walls throughout <p>Lead</p> <ul style="list-style-type: none"> • Red/grey paint on the basement corridor floor is lead-containing • Yellow paint on the basement stairwell is lead-containing • Yellow paint on trim throughout the basement is lead-containing • Red paint on the basement floors is lead-containing • Grey paint on the exterior concrete at the front entrance is lead-containing • Orange paint on exterior wood at the front entrance is lead-containing • White paint on exterior trim is lead-containing • Lead is expected to be present in solder used in copper domestic pipes, caulking on bell fittings for cast iron drainage pipes, and some electrical equipment <p>PCBs</p> <ul style="list-style-type: none"> • It is estimated that there are approximately 50 ballasts within the fluorescent light fixtures observed throughout. Based on the age of the building, fluorescent light ballasts may contain PCBs <p>Mercury</p>

HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Summary of Identified Hazardous Building Materials	
Building Name	Identified Hazardous Building Materials
	<ul style="list-style-type: none"> Mercury vapour is expected be present in fluorescent light tubes <p>Silica</p> <ul style="list-style-type: none"> Silica may be present in concrete, cement, mortar, ceramic tiles, and acoustic ceiling tiles observed in various locations throughout.
Vehicle Garage Building	<p>Asbestos</p> <ul style="list-style-type: none"> Cement panel on interior walls and ceiling throughout Pipe sealant cream/black inside cast iron pipe fittings throughout Yellow window frame caulking (painted black) on the exterior of windows at the rear of the building (between window frame and the building Cream caulking around doors on the exterior of the building Beige mastic on the backside of corrugated wall panels throughout <p>Lead</p> <ul style="list-style-type: none"> Grey paint on floors is lead-containing Lead is expected to be present in solder used in copper domestic pipes, caulking on bell fittings for cast iron drainage pipes, and some electrical equipment <p>PCBs</p> <ul style="list-style-type: none"> Approximately 33 fluorescent light fixtures were observed throughout. Based on the age of the building the ballasts within these fixtures may contain PCBs. <p>Mercury</p> <ul style="list-style-type: none"> Two (2) suspected mercury-containing thermostats were observed Mercury vapour is expected be present in fluorescent light tubes <p>Silica</p> <ul style="list-style-type: none"> Silica may be present in in concrete, cement, and mortar observed in various locations throughout
Butler Storage Shed	<p>Asbestos</p> <ul style="list-style-type: none"> Black/grey window pane caulking between window frame and glass pane on exterior of windows beside doors Grey/white door caulking around the exterior door frames <p>Lead</p> <ul style="list-style-type: none"> Red paint on the structural steel throughout is lead-containing <p>Silica</p> <ul style="list-style-type: none"> Silica may be present in concrete and cement observed in various locations throughout
Fire Cache	<p>Asbestos</p> <ul style="list-style-type: none"> Grey window frame caulking between window frame and building on the exterior <p>Lead</p> <ul style="list-style-type: none"> Grey paint on the exterior trim is lead-containing Beige paint on the exterior siding is lead-containing <p>Silica</p> <ul style="list-style-type: none"> Silica may be present in concrete and cement observed in various locations throughout
Pump House	<p>Silica</p> <ul style="list-style-type: none"> Silica may be present in concrete and cement observed in various locations

HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Summary of Identified Hazardous Building Materials	
Building Name	Identified Hazardous Building Materials
	throughout
Well Shed	Silica <ul style="list-style-type: none"> Silica may be present in concrete and cement observed in various locations throughout
Sewage Treatment Building	Silica <ul style="list-style-type: none"> Silica may be present in concrete and cement observed in various locations throughout
House 1	Asbestos <ul style="list-style-type: none"> Heat shields (foil covered) inside round incandescent light fixtures on the main floor and in the basement 9"x9" vinyl floor tile in basement rooms 4 and 5 (both beige and red) Grey window pane caulking between window frame and glass pane in main house windows White ceiling texture coat throughout the main house Drywall joint compound throughout Lead <ul style="list-style-type: none"> White paint on exterior walls is lead-containing Brown paint on exterior trim is lead-containing Green paint on the thruway door is lead-containing Lead is expected to be present in solder used in copper domestic pipes, caulking on bell fittings for cast iron drainage pipes, and some electrical equipment PCBs <ul style="list-style-type: none"> Approximately 7 fluorescent light fixtures were observed throughout. Based on the age of the building, the ballasts within these fixtures may contain PCBs Mercury <ul style="list-style-type: none"> Mercury vapour is expected to be present in fluorescent light tubes Silica <ul style="list-style-type: none"> Silica may be present in concrete, cement, and ceramic tiles observed in various locations throughout
House 2	Asbestos <ul style="list-style-type: none"> Heat shields (foil covered) inside round incandescent light fixtures throughout Tan squares vinyl sheet flooring in the mudroom 9"x9" vinyl floor tile, both green and white, in basement room 3 Drywall joint compound throughout Grey pipe sealant inside cast iron bell fittings in the basement Grey window pane caulking between window frame and glass panes throughout Lead <ul style="list-style-type: none"> Grey paint on the basement floor is lead-containing Lead is expected to be present in solder used in copper domestic pipes, caulking on bell fittings for cast iron drainage pipes, and some electrical equipment PCBs <ul style="list-style-type: none"> Two fluorescent light fixtures were observed. The label from one fluorescent light ballast was inspected and based on the label information it is suspected to contain PCBs. Both fluorescent light fixtures are expected to have PCB-containing ballasts.

HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Summary of Identified Hazardous Building Materials	
Building Name	Identified Hazardous Building Materials
	<p>Mercury</p> <ul style="list-style-type: none"> One (1) mercury-containing thermostat was observed in the living room Mercury vapour is expected be present in fluorescent light tubes <p>Mould</p> <ul style="list-style-type: none"> Suspect mould growth was observed on the walls of basement room 3 Mould growth was identified on drywall in the stairwell corner (sample M-01) Mould growth was identified on the wood cove base in the basement (sample M-02) <p>Silica</p> <ul style="list-style-type: none"> Silica may be present in concrete, cement, and ceramic tiles observed in various locations throughout
House 2 Garage	<p>Silica</p> <ul style="list-style-type: none"> Silica may be present in concrete and cement observed in various locations throughout
House 3	<p>Asbestos</p> <ul style="list-style-type: none"> 9"x9" vinyl floor tile, both red and beige, in basement room 3 Drywall joint compound throughout Grey window pane caulking between window frame and glass panes throughout <p>Lead</p> <ul style="list-style-type: none"> Grey paint on the basement floor is lead-containing White paint on interior walls is lead-containing Lead is expected to be present in solder used in copper domestic pipes, caulking on bell fittings for cast iron drainage pipes, and some electrical equipment <p>PCBs</p> <ul style="list-style-type: none"> Two fluorescent light fixtures were observed. Based on the age of the building, fluorescent light ballasts may contain PCBs. <p>Mercury</p> <ul style="list-style-type: none"> Mercury vapour is expected be present in fluorescent light tubes <p>Mould</p> <ul style="list-style-type: none"> Suspect mould growth was observed on the walls of basement room 3 <p>Silica</p> <ul style="list-style-type: none"> Silica may be present in concrete, cement, and ceramic tiles observed in various locations throughout
House 3 Garage	<p>Silica</p> <ul style="list-style-type: none"> Silica may be present in concrete and cement observed in various locations throughout
House 4	<p>Asbestos</p> <ul style="list-style-type: none"> White woven duct tape on seams of furnace ducting in the basement White duct shields on wooden joists in the basement above furnace ducting Brown square pattern sheet flooring in the kitchen Tan spots pattern sheet flooring in the mudroom Cream vinyl floor tile concealed under carpet and other flooring throughout the majority of the main level

HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Summary of Identified Hazardous Building Materials	
Building Name	Identified Hazardous Building Materials
	<ul style="list-style-type: none"> Brown exterior window frame caulking between window frames and the building on the exterior of windows Drywall joint compound throughout <p>Lead</p> <ul style="list-style-type: none"> Grey paint on the basement floor is lead-containing Brown paint on exterior trim is lead-containing Lead is expected to be present in solder used in copper domestic pipes, caulking on bell fittings for cast iron drainage pipes, and some electrical equipment <p>PCBs</p> <ul style="list-style-type: none"> Two fluorescent light fixtures were observed. The label from one light fixture ballast was inspected for comparison to the PCB Guide. Although that ballast was confirmed to be non-PCB, the ballast within the other fixture may contain PCBs, based on the age of the building. <p>Mercury</p> <ul style="list-style-type: none"> One (1) mercury-containing thermostat was observed in the living room Mercury vapour is expected to be present in fluorescent light tubes <p>Mould</p> <ul style="list-style-type: none"> Suspect mould growth was observed on the walls of basement room 3 <p>Silica</p> <ul style="list-style-type: none"> Silica may be present in concrete, cement, and ceramic tiles observed in various locations throughout
House 4 Garage	<p>Lead</p> <ul style="list-style-type: none"> Grey paint on the floor is lead-containing <p>Silica</p> <ul style="list-style-type: none"> Silica may be present in concrete and cement observed in various locations throughout

Building-by-building summaries of the identified hazardous building materials, as well as building-specific recommendations to address identified hazardous building materials in non-compliant conditions are provided in **Appendix B through Appendix R**. General findings and recommendations pertaining to hazardous building materials within the subject buildings are provided in **Section 5** and **Section 6** of this report.

DRAFT

HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Introduction
November 19, 2014

1.0 INTRODUCTION

Stantec Consulting Ltd. (Stantec) was retained by Parks Canada c/o Public Works and Government Services Canada (PWGSC) to conduct hazardous building materials assessments within 17 buildings (subject buildings) associated with Kluane National Park, at two separate locations in Haines Junction, YT.

The purpose of the assessment was to check for potential hazardous building materials that may require special attention in accordance with the Yukon Workers' Compensation Health and Safety Board (WCB) and the current version of the *Yukon Territory Occupational Health and Safety Act and Regulations* (YT OHS Reg.), prior to planned renovation and/or demolition activities.

The hazardous building materials considered included asbestos-containing materials (ACMs), lead-containing materials including lead-containing paints (LCPs), polychlorinated biphenyls (PCBs), mercury-containing items, ozone-depleting substances (ODSs), suspected mould-impacted building materials and silica.

The site work was conducted by Keith Irwin and Kassandra DeFrancis of Stantec between September 23 and 25, 2014.

1.1 UNDERSTANDING OF THE PROJECT

Stantec understands that Parks Canada is planning renovation activities in the Kluane National Park Headquarters building and the adjacent Public Washroom building as well as demolition of the buildings at the separate Parks Canada Farm Site. As a measure of diligence in maintaining compliance with the requirements of the WCB and the current version of the YT OHS Reg. pertaining to the identification of hazardous materials prior to planned renovation or demolition activities PWGSC/Parks Canada retained Stantec to conduct this assessment.

A list of the buildings included in this assessment is included in **Appendix A**.

2.0 SCOPE AND METHODOLOGY

Keith Irwin and Kassandra DeFrancis of Stantec conducted a visual assessment within the subject buildings between September 23 and 25, 2014. Site work was conducted in general compliance with the requirements of the Canada Labour Code, the WCB, the current version of the YT OHS Reg. and Stantec's Safe Work Practices (SWPs).

Mechanical systems, structures and finishes of the subject buildings were visually examined to determine the suspected presence of ACMs, lead including LCPs, PCBs, mercury, ODSs, mould, and silica. Where building materials were suspected but not confirmed to contain asbestos, lead



HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Scope and Methodology
November 19, 2014

(in paint), or mould samples were collected for analysis to confirm or deny the presence of these hazardous materials. Based on analytical results, visually similar materials were referenced to specific analyzed samples to reduce the number of samples collected.

Additional background information and the methodology used for the determination of presence or absence of each specific hazardous material considered in this assessment are outlined in the following sections.

2.1 ASBESTOS

The common use of friable (materials which, when dry, can be easily crumbled or powdered by hand pressure) ACMs in construction generally ceased voluntarily in the mid-1970s but was only banned through legislation by the late 1980s. Friable asbestos was used in many building products, primarily high temperature insulations, spray-applied structural fireproofing, and a material known as vermiculite that was commonly used as block wall insulation and may be contaminated with asbestos fibres. Asbestos was also used in many non-friable manufactured products such as floor tiles, ceiling tiles, Transite™ cement products, and various other construction materials. Some cement products currently used in the construction of buildings may still contain asbestos.

The presence of asbestos in federal workplaces, and pertaining to federally regulated workers is governed by the Canada Labour Code. The presence of asbestos in the workplace in the Yukon pertaining to territorially regulated workers is governed by the WCB, with provisions published in the current version of the YT OHS Reg. As both federally regulated workers and territorially regulated workers (e.g., contractors) are expected to carry out work activities within the subject buildings, and as the territorial regulations are generally more prescriptive pertaining to asbestos (and generally include the requirements noted in the Canada Labour Code), this assessment was conducted to meet the requirements of the current version of the YT OHS Reg.

According to current version of the YT OHS Reg., asbestos-containing material (ACM) means any material which is found to contain any asbestos.

Based on this criterion, a visual assessment of accessible areas was undertaken in order to check for the presence of materials suspected of containing asbestos. Locations to collect discrete bulk asbestos samples of suspect building materials were identified. Samples of representative materials were then collected at these locations.

Multiple samples were collected from each "homogenous application" of observed suspected ACMs (materials suspected to contain asbestos that are uniform in material type, colour, texture application and estimated installation date) and submitted to EMSL Canada Inc. (EMSL) in Mississauga, Ontario for analysis of asbestos content using polarized light microscopy (PLM) with dispersion staining, in accordance with the United States Environmental Protection Agency (EPA) 600/R-93/116 method.

HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Scope and Methodology
November 19, 2014

The number of samples to be collected for each homogenous application of a suspected ACM was based on accepted occupational hygiene standards and protocols, along with the assessor's experience and understanding of the consistency of that building material's application.

EMSL's analytical laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

2.1.1 Sample Results Interpretation

When asbestos is detected in concentrations greater than one percent for the method used in one of the samples within a set that was collected to represent a "homogenous application" of a particular material, the entire sample set and the entire application of that material is then considered to be an ACM.

In addition to the above, a "positive stop" option was used during the laboratory analysis of the building material samples submitted for asbestos analysis. The "positive stop" option is utilized by the laboratory when asbestos is detected at a concentration of greater than one percent in one of the samples within a set that was collected to represent a "homogenous application" of that material. At this point, further analysis of subsequent samples within the set is deemed to be unnecessary (as the entire set will be considered an ACM, per above), and the remainder of the samples within the set are not analysed.

2.1.2 Potential Asbestos-Containing Vermiculite Insulation

As part of the assessment, Stantec assessed the subject buildings for areas where vermiculite insulation, a potential ACM, would likely be present. This included making note of and assessing attic spaces, floor cavities and masonry or brick walls, which are typical areas where vermiculite is found. Where masonry or brick walls were observed, destructive assessment (drilling) was not conducted to assess the cavity for the presence of vermiculite.

2.1.3 Asbestos Sampling Quality Assurance/Quality Control

Sampling activities pertaining to asbestos were conducted in accordance with Stantec's Safe Work Practices (SWPs), which take into account current territorial regulations pertaining to such work (i.e., sampling procedures, required number of samples, and laboratory analytical procedures).

Representative bulk samples were collected of accessible suspect ACMs in sufficient quantities for laboratory analyses. Suspect ACM samples were sealed in polyethylene zip-lock bags labeled with the sample number, suspect material description, and sample location. As part of sampling procedures, sampling tools were cleaned between sample collection events to avoid the potential for cross-contamination of samples.



HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Scope and Methodology
November 19, 2014

Sample bags were compiled in order and placed into a single container accompanied with a Chain of Custody form outlining the project information, date, building location, number of samples, and sample description. Samples were submitted to the analytical laboratory in a sealed container via courier.

2.2 LEAD

Lead may be used in its pure metallic form or combined chemically with other elements to form lead compounds. Metallic lead is used to make products such as electric storage batteries, ammunition, lead solder, radiation shields, pipes, and sheaths for electric cables. Metallic lead is sometimes combined with other metals such as copper, tin, and antimony as lead alloys for use in the manufacture of a variety of metal products. Lead is commonly found in buildings in the solder used on copper domestic pipes, in the caulking on bell fittings of cast iron drainage pipes and in electrical equipment.

The presence of lead-containing materials (other than paint) was assessed through visual means.

With respect to potential lead exposures associated with disturbance to surfaces coated with lead-containing products, various occupational health and safety administrations have indicated that working with materials coated with paint that has a lead content that exceeds 600 ppm can lead to exposures in excess of 50% of the occupational exposure limit (OEL) for lead, when the OEL is 0.05 mg/m³ (the OEL for lead in the Yukon, according to the current version of the YT OHS Reg., is 0.15 mg/m³).

Prior to disposal, Yukon Environment recommends that analytical results for building materials should be compared to the territorial soil guideline value of 1000 ppm as found in the Contaminated Sites Regulations. As such, and given that the OEL for lead in the Yukon is 3 times that of jurisdictions that reference 600 ppm as lead-containing, Stantec will reference the 1000 ppm value in defining paints as "lead-containing" as the most applicable criteria.

Based on this criterion, samples of suspected LCPs were collected from major paint applications, and were collected to substrate, where possible, in sufficient quantity to conduct analyses for total lead content. Samples collected were placed into separate, sealed, and labeled polyethylene bags, and submitted to EMSL for analyses of total lead content using Flame Atomic Absorption Spectrometry AAS (SW 846 3050B*/7000B).

EMSL's analytical laboratory is also accredited by the American Industrial Hygiene Association (AIHA) Environmental Lead Laboratory Approval Program.

2.3 POLYCHLORINATED BIPHENYLS

PCBs were used widely as coolants and lubricants in transformers, capacitors, and other electrical equipment. In fluorescent fixtures, PCBs were usually found within the small capacitors inside the ballast that controls the lamp. The Federal Chlorobiphenyls Regulation, SOR/91-152, prohibited the use of PCBs in electrical equipment manufactured after July 1, 1980.

The presence of PCB-containing equipment was assessed through visual means. With respect to fluorescent lamp ballasts, due to the risk of electrical shock associated with dismantling operating fixtures, fluorescent lamp ballasts were not removed to view identification numbers/information.

The total number of fluorescent lamp ballasts that may contain PCBs within the subject buildings was approximated.

Suspected PCB-containing electrical equipment can be visually inspected and compared to the Environment Canada reference guide entitled "*Identification of Lamp Ballasts Containing PCBs, Report EPS 2/CC/2*", dated August 1991 (PCB Guide).

2.4 MERCURY

Mercury is commonly found in buildings as mercury vapour lighting, thermostats/thermometers with mercury-containing glass ampoules, electrical switches and can also be found in minor amounts in fluorescent lamp tubes and vapour bulbs and may be present in stable forms in adhesives. Exposure to mercury in workplaces is governed by the WCB.

The presence of mercury and mercury-containing equipment was assessed through visual means.

2.5 MOULD

Moist building materials may provide suitable conditions for mould growth, and the removal of building materials impacted by mould growth may require workers with specific training and experience using work procedures that have been developed to protect workers and work areas from exposure to elevated concentrations of airborne mould.

The presence of suspect visible mould was assessed through visual means and limited sampling. Material observed with dark-colored staining and/or a textured and discolored appearance is described as "suspect mould". Mould identified visually is defined as "suspect mould" unless it is confirmed as mould by laboratory analysis.

Two bulk samples were collected from building materials exhibiting visual evidence of suspect mould growth in one of the residences scheduled for demolition. The bulk samples collected were placed into a separate, labeled plastic bag that was sealed and submitted to Sporometrics Inc. (Sporometrics) of Toronto, ON for analysis of the mould forms present.

HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Scope and Methodology
November 19, 2014

Sporometrics is accredited through the American Industrial Hygiene Association's Environmental Microbiology Proficiency Analytical Testing (EMPAT) program.

2.5.1 Mould Reference Guidelines

With respect to mould and/or moisture, the visual assessment and bulk sampling procedures utilized during this project were based on the recommendations provided in the documents listed below:

- Standard Construction Document CCA 82 "Mould Guidelines for the Canadian Construction Industry", Canadian Construction Association, 2004 (referred to as "CCA 82").
- "Guidelines on Assessment and Remediation of Fungi in Indoor Environment", New York City Department of Health, Bureau of Environmental and Occupational Disease Epidemiology, April 2000 (referred to as the "NYC Guidelines").
- "Fungal Contamination in Public Buildings: Health Effects and Investigation Methods", Federal-Provincial Committee on Environmental and Occupational Health, 2004 (referred to as the "Health Canada Guide").
- "Indoor Air Quality in Office Buildings: A Technical Guide", Report of the Federal-Provincial Advisory Committee on Environmental and Occupational Health, 1995. (referred to as the "IAQ Guide").
- "Bioaerosols: Assessment and Control", American Conference of Governmental Industrial Hygienists (ACGIH), 1999 (referred to as the ACGIH Report).

2.6 OZONE-DEPLETING SUBSTANCES

Chlorofluorocarbons (CFCs) and other ODSs are often found in refrigeration units associated with air-conditioning or other refrigeration equipment. In September 1987, forty-seven countries agreed to the Montreal Protocol on Substances that Deplete the Ozone Layer. Disposal of ODSs are regulated in the Yukon by the Yukon Government's 'Special Waste Regulations' (2010) and the *Federal Halocarbon Regulations*, 2003 (FHR 2003).

The presence of ODSs and equipment containing these materials was assessed through visual means.

2.7 SILICA

Silica, also referred to as free crystalline silica, is found in concrete, cement, mortar, ceramic wall and floor tiles, stucco finishes and acoustic ceiling tiles. Prolonged exposure to, and inhalation of free crystalline silica, may result in respiratory disease known as silicosis, which is characterized by progressive fibrosis of the inner lung tissue and marked shortness of breath or impaired lung function.

HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Assessment Limitations
November 19, 2014

Exposure to silica dust is governed by the WCB, with applicable exposure limits indicated in the current version of the YT OHS Reg., depending on the type of silica to be considered (quartz, cristobalite or tridymite).

The presence of silica was assessed through visual means.

3.0 ASSESSMENT LIMITATIONS

This report reflects the observations made within accessed areas of the subject buildings and the results of analyses performed on specific materials sampled during the assessment. Analytical results reflect the sampled materials at the specific sample locations.

Sampling was conducted pertaining to suspected ACMs, suspected LCPs and suspect mould only. The assessment for the presence of other hazardous building materials was visual in nature, and was conducted pertaining to readily visible surfaces within accessible spaces only. Concealed spaces were inspected via existing access panels, where present. Interior and exterior finishes, solid ceilings, walls, flooring and structural elements were not removed to access concealed areas. Inspection ports were made in various places where the presence of hazardous building materials was suspected behind solid finishes.

Due to limitations on the agreed to scope of work for this project as well as physical limitations in accessing concealed areas and limitations associated with working in occupied/operational spaces, there are specific limitations to the information that can be provided to each hazardous building material considered in this assessment, as outlined below.

3.1 ASBESTOS

Suspected ACMs that were not sampled include, but are not limited to, the following (where present, based on building construction or as otherwise noted):

- Roofing materials associated with the Kluane National Park Headquarters building and the adjacent Public Washroom
- Sub-grade materials
- Interior components of mechanical equipment (e.g., inner linings or gaskets in boilers)
- Interior components of heating, ventilation and air conditioning (HVAC) units
- Heat protection materials inside mechanical installations (e.g., gaskets) and light fixtures (e.g., paper backing in sealed incandescent fixtures)
- Flooring material concealed beneath ceramic tile, brickwork, hardwood flooring, and/or concealed beneath existing sub-floors
- Drywall and/or wall plaster and associated finish materials concealed behind new and/or additional walls or ceilings
- Woven tape inside duct connection joints or inner ducting insulation



HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Assessment Limitations
November 19, 2014

- Materials within wall cavities, hard ceiling cavities or crawlspaces in the Kluane National Park Headquarters building and the adjacent Public Washroom
- Insulation materials inside fire doors.

If encountered during renovation, demolition or other activities, any suspected ACMs not identified within this report should be presumed to contain asbestos and handled as such until otherwise proven, through analytical testing.

3.2 LEAD

Assessment for the presence of lead or lead-containing materials was visual in nature, and was conducted pertaining to readily visible surfaces within accessible spaces of the subject buildings only. The presence of lead or lead-containing materials in inaccessible areas not assessed included, but was not limited to: ceiling spaces, wall cavities, crawlspaces, and buried materials.

With respect to paint, samples of suspected LCPs were collected within the subject buildings only from surfaces of major paint applications where visually different paint colours and/or types were identified. Although the surfaces where samples were collected may be covered with more than one coat of paint, the paint samples are described by the surface (visible) colour only.

Attempts were made to represent all layers of paint in the samples collected. As analytical results are referenced to the surface paint colour only, the lead content of all painted surfaces similar to that represented by the surface paint colour will be presumed to be the same, regardless of differing sub surface paints, if any.

3.3 POLYCHLORINATED BIPHENYLS

Due to height restrictions and the risk of electrical shock in handling operational light fixtures, the ballasts present in the fixtures observed within the subject buildings were not removed for comparison to the PCB Guide.

Conclusions and recommendations regarding the presence of PCBs within the subject buildings are based on Stantec's limited observations in combination with information provided by staff regarding lighting renovations (where requested by Stantec based on observations) and is presented to provide guidance regarding the likelihood that PCB-containing equipment is or is not present within the subject buildings. The exact extent and/or number of fluorescent lamp ballasts containing PCBs, if any, within the subject buildings will not be commented on.

3.4 MERCURY

Visual assessment for the presence of mercury-containing equipment within the subject buildings was conducted in accessible areas only. The presence of mercury or mercury-containing equipment in inaccessible areas includes, but is not limited to: ceiling spaces, wall cavities, and crawlspaces, or as internal parts of HVAC mechanisms.



Findings
November 19, 2014

3.5 MOULD

Visual assessment for the presence of suspected visible mould and/or suitable conditions for mould growth (e.g., moist and/or water-stained building materials) were conducted in accessed portions of the subject buildings only. The assessment was not intrusive in nature and included visual assessment of exposed surfaces and closer inspection of known problem areas.

The conclusions made in this report provide description(s) of the potential source(s) of moisture within the subject buildings that may have led to suitable conditions for mould growth, only in those cases where potential source(s) of moisture were identified. These conclusions will not necessarily identify all sources of moisture leading to suitable conditions for mould growth within the subject buildings or within the impacted area(s).

This assessment does not constitute a building envelope/building systems assessment for any of the subject buildings, which would include an intrusive investigation to assess the internal condition, potential moisture sources, and expected remaining service life of the various components and systems comprising the envelope of a building.

3.6 OZONE DEPLETING SUBSTANCES

Visual assessment for the presence of ODSs within the subject buildings was conducted in accessible areas only. The presence of ODS-containing equipment in inaccessible areas including, but not limited to, ceiling spaces, wall cavities and crawlspaces, was not assessed. In addition, portable equipment that may contain ODSs (refrigerators, drink coolers, etc.) was not considered as part of this assessment.

3.7 SILICA

Visual assessment for the presence of silica-containing materials within the subject buildings was conducted in accessible areas only. The presence of potential silica-containing materials in inaccessible areas including, but not limited to, ceiling spaces, wall cavities and crawlspaces was not assessed.

4.0 FINDINGS

The results of our assessment are provided on a building-by-building basis in **Appendices B through R**. Each Appendix contains the following (where applicable):

- Separate sections with written summaries of findings pertaining to each hazardous building material, including the following:
 - Information regarding the building, including the reported intent for that particular building (e.g., demolition, renovation or continued operation and maintenance)
 - A listing of suspect materials observed



HAZARDOUS BUILDING MATERIALS ASSESSMENTS

General Recommendations

November 19, 2014

- Tables including a summaries of the sample types, locations, and analytical results
- Interpretations of observations and/or sample analytical results.
- Photographs of identified hazardous building materials
- Information pertaining to condition evaluation of identified hazardous building materials
- Building-specific recommendations pertaining to identified hazardous building materials based on the reported intent for that particular building (e.g., demolition, renovation or continued operation and maintenance)
- Floor plan drawings for the subject building, which include locations of the samples collected during this assessment, and locations of identified hazardous building materials (where practical)
- Copies of the Certificates of Analysis for samples analyzed.

It should be noted that evaluation of condition of identified ACMs was conducted using terminology and classifications as outlined in the *Public Works and Government Services Canada Asbestos Management Directive* (DP 057, 1997-12-03), and considered the friability of the material (terminology relating to how easily fibres can be released), condition (good, fair and poor) and accessibility of the material.

5.0 GENERAL RECOMMENDATIONS

Building-specific recommendations pertaining to the identified hazardous building materials that require action are provided in **Appendices B through R**. General recommendations pertaining to management of identified hazardous building materials in for continued operations, renovation and/or demolition are provided below.

5.1 ASBESTOS

5.1.1 Renovation and Continued Operations

For renovation and continued operations, which Stantec understands is planned for the Kluane National Park Headquarters building and the adjacent Public Washroom, the following should be considered pertaining to identified ACMs:

- Identified ACMs that may be impacted during renovations activities should be removed prior to the onset of those activities, in accordance with the requirements of the Canada Labour Code, the WCB and the current version of the YT OHS Reg. It is expected that this will require the involvement of a qualified, licensed asbestos abatement contractor.
- An asbestos exposure control plan (also known as an “asbestos management plan” (AMP) or “asbestos operations and management plan”) should be developed and implemented buildings where ACMs are identified or remain. The AMP would serve to compile the available data, results and reports regarding the presence, extent, handling, removal, and disposal of ACMs within the subject building. The AMP would also provide sections for information regarding future sampling and analysis of suspected ACMs, if required, asbestos-



HAZARDOUS BUILDING MATERIALS ASSESSMENTS

General Recommendations

November 19, 2014

abatement projects, if undertaken, and other information regarding the management of asbestos within the subject building.

- Identified ACMs that remain in the building and are in good condition can be managed in place, upon development and implementation of an AMP.
- Should a material suspected to contain asbestos fibres become uncovered during renovation activities, all work in the areas that may disturb the material should be stopped. Samples of the suspect material should be submitted for laboratory analysis to determine if asbestos fibres are present. Confirmed asbestos materials should be handled in accordance with applicable guidelines and regulations.
- Suspected ACMs deemed visually similar to the ACMs identified in this report should be considered asbestos-containing and handled as such, unless proven otherwise, through analytical testing.
- Ensure asbestos containing waste is handled, stored, and disposed of in accordance with the requirements of the *Federal Transportation of Dangerous Goods Regulation*, the "Asbestos Abatement Code of Practice" (May 2012) and Yukon Environment Special Waste & Solid Waste Regulations document entitled "Asbestos Disposal" (2010).

This report should be added to the AMP and referred to as the current ACM record.

5.1.2 Demolition

For demolition, which Stantec understands is planned for buildings at the separate Parks Canada Farm Site, the following should be considered pertaining to identified ACMs:

- Identified ACMs should be removed prior to the onset of demolition, in accordance with the requirements of the Canada Labour Code, the WCB and the current version of the YT OHS Reg. It is expected that this will require the involvement of a qualified, licensed asbestos abatement contractor.
- Should a material suspected to contain asbestos fibres become uncovered during demolition activities, all work in the areas that may disturb the material should be stopped. Samples of the suspect material should be submitted for laboratory analysis to determine if asbestos fibres are present. Confirmed asbestos materials should be handled in accordance with applicable guidelines and regulations.
- Suspected ACMs deemed visually similar to the ACMs identified in this report should be considered asbestos-containing and handled as such, unless proven otherwise, through analytical testing.
- Asbestos-containing cement pipe may be present below ground – caution should be used if excavation is required.
- Ensure asbestos containing waste is handled, stored, and disposed of in accordance with the requirements of the *Federal Transportation of Dangerous Goods Regulation*, the "Asbestos Abatement Code of Practice" (May 2012) and Yukon Environment Special Waste & Solid Waste Regulations document entitled "Asbestos Disposal" (2010).

HAZARDOUS BUILDING MATERIALS ASSESSMENTS

General Recommendations
November 19, 2014

5.2 LEAD

Lead-containing materials and LCPs in good condition do not pose significant hazards to workers for continued operations and maintenance.

The provisions for lead that are indicated below would apply for either renovation or demolition:

- If LCPs or other lead-containing materials are to be disturbed and/or removed during renovation or other activities, ensure compliance with the following:
 - The occupational exposure control requirements of the Canada Labour Code and the WCB.
 - The disposal requirements of *Yukon Environment – Contaminated Sites Regulations* and the *Yukon Government Special Waste Regulations*.
 - The transportation requirements of the *Federal Transportation of Dangerous Goods Regulation*.
- Corrective action or remedial work on paint applications containing any concentration of lead should be undertaken in a manner so as to avoid generating fine particulate matter or dust (i.e., avoid sanding). Airborne lead dust or fumes should not exceed the WCB 8-hour Occupational Exposure Limit (OEL) of 0.15 milligram per cubic metre (mg/m³) during the removal of paints and products containing any concentration of lead. The use of personal protective equipment is recommended to reduce the potential for over-exposure to lead dust.

5.3 POLYCHLORINATED BIPHENYLS

For continued operations and maintenance, fluorescent lamp ballasts that may contain PCBs can be managed in place, where these items are operating and in good condition. No further action is currently required until 2025, when PCB-containing items will require removal and disposal.

The provisions for PCBs that are indicated below would apply for either renovation or demolition:

- As fluorescent lamp ballasts may contain PCBs, if these items are removed from service, they should be assessed in reference to the PCB Guide.
- If PCB-containing items are identified and require removal, they should be handled, transported, stored and disposed of according to the *Federal Transportation of Dangerous Goods Regulation* and the *PCB Regulations* (SOR/2008-273).

5.4 MERCURY

For continued operations and maintenance, identified mercury-containing materials can be managed in place. Mercury vapour within light fixtures and/or liquid mercury in thermostat switches or thermometers pose no risk to workers or occupants provided the mercury containers remain intact and undisturbed. No further action is currently required.

For either renovation or demolition, if mercury-containing materials (e.g., thermostats, fluorescent light bulbs, HID lighting) are to be removed from service, ensure all mercury waste is



HAZARDOUS BUILDING MATERIALS ASSESSMENTS

General Recommendations

November 19, 2014

handled, stored and disposed of in accordance with the requirements of the requirements of the Yukon Government *Special Waste Regulations* and the *Transportation of Dangerous Goods Regulation*.

5.5 MOULD

5.5.1 Renovation and Continued Operations

While there are few definitive guidelines on the interpretation of laboratory results for mould analysis, documents published by Health Canada, Ontario Ministry of Health, American Industrial Hygiene Association (AIHA), American Conference of Governmental Industrial Hygienists (ACGIH) and others, provide guidance for interpreting the results of mould investigations. The *Health Canada Guide* states that:

"Identifiable promoters of fungal growth require correction, and any visible fungi require removal"

As the most controllable promoter of fungal growth is moisture, buildings that are to continue to be operated and maintained should be managed to minimize moisture ingress or moisture impacts to building materials that are not intended to be wetted.

5.5.2 Demolition

With respect to demolition work, when such activities proceed, it is expected that mould and/or moisture-impacted building materials will be removed and disposed of during that process. Due to the actual or potential presence of mould on building materials in various buildings (as indicated in **Appendices D through R**), and if those impacted materials are to be removed by hand, demolition workers should be notified of the potential presence of mould and be provided with respiratory protection and/or other personal protective equipment (PPE) as deemed necessary for the work that they will be conducting.

If significant mould contamination is identified in concealed locations, an experienced mould abatement contractor may be required to assist with removal in accordance with applicable guidelines and standards for such work.

5.6 OZONE DEPLETING SUBSTANCES

Suspect ODS-containing equipment observed within the buildings that are remain operational subsequent to renovation (one suspect ODS-containing air handling unit at the Kluane National Park Headquarters building) can be managed in place and must be serviced by licensed refrigeration technicians (as defined in the *Federal Halocarbon Regulations*).

If ODS-containing equipment in buildings to be demolished (buildings at the separate Parks Canada Farm Site- none observed during this assessment, however some areas not accessible)



HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Closure
November 19, 2014

is to be removed and disposed of, ODSs must be handled, recycled, stored, and/or disposed of in accordance with the requirements of the *Yukon's Ozone Depleting Substances (ODS) Regulations* and the *Federal Halocarbon Regulations*, 2003 (FHR 2003).

5.7 SILICA

For continued operations and maintenance, identified silica-containing materials can be managed in place.

For renovation or demolition activities, if silica-containing materials are to be disturbed, ensure dust control measures are employed such that airborne silica dust concentrations do not exceed the applicable exposure limits indicated in the current version of the YT OHS Reg. This would include, but not be limited to, the following:

- Providing workers with respiratory protection.
- Wetting the surface of the materials to prevent dust emissions.
- Providing workers with facilities to properly wash prior to exiting the work area.
- Providing dust control to mitigate the potential for demolition dust to escape from the work area into public and/or adjacent areas.

6.0 CLOSURE

This report has been prepared by Stantec Consulting Ltd. for the sole benefit of Parks Canada c/o Public Works and Government Services Canada. Any use that a third party makes of this report, or any reliance on decisions to be made based on it, is the responsibility of such third parties. Stantec Consulting Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

The conclusions presented represent the best judgment of the assessor based on current environmental standards and the site conditions observed on the dates cited within this report. This report is based on, and limited by, circumstances and conditions stated herein, and on information available at the time of preparation of the report. Due to the limited nature of the investigation and the limited data available, Stantec Consulting Ltd. cannot warrant against undiscovered environmental liabilities. It is possible that additional, concealed hazardous materials may become evident during renovation and/or demolition activities within the subject buildings.

If any conditions become apparent that differ significantly from our understanding of conditions as presented in this report, we request that we be notified immediately to reassess the conclusions provided herein.



HAZARDOUS BUILDING MATERIALS ASSESSMENTS

Closure
November 19, 2014

We trust that the report meets your current requirements. Should you have any questions or concerns regarding the above, please do not hesitate to contact the undersigned.

Respectfully submitted,

STANTEC CONSULTING LTD.



Keith Irwin Dipl. Tech.
Environmental Technologist

Reviewed by:



Sean Brigden, B.Sc., P.B.Dipl., CRSP
Project Manager

KI/SB/dsc

DRAFT

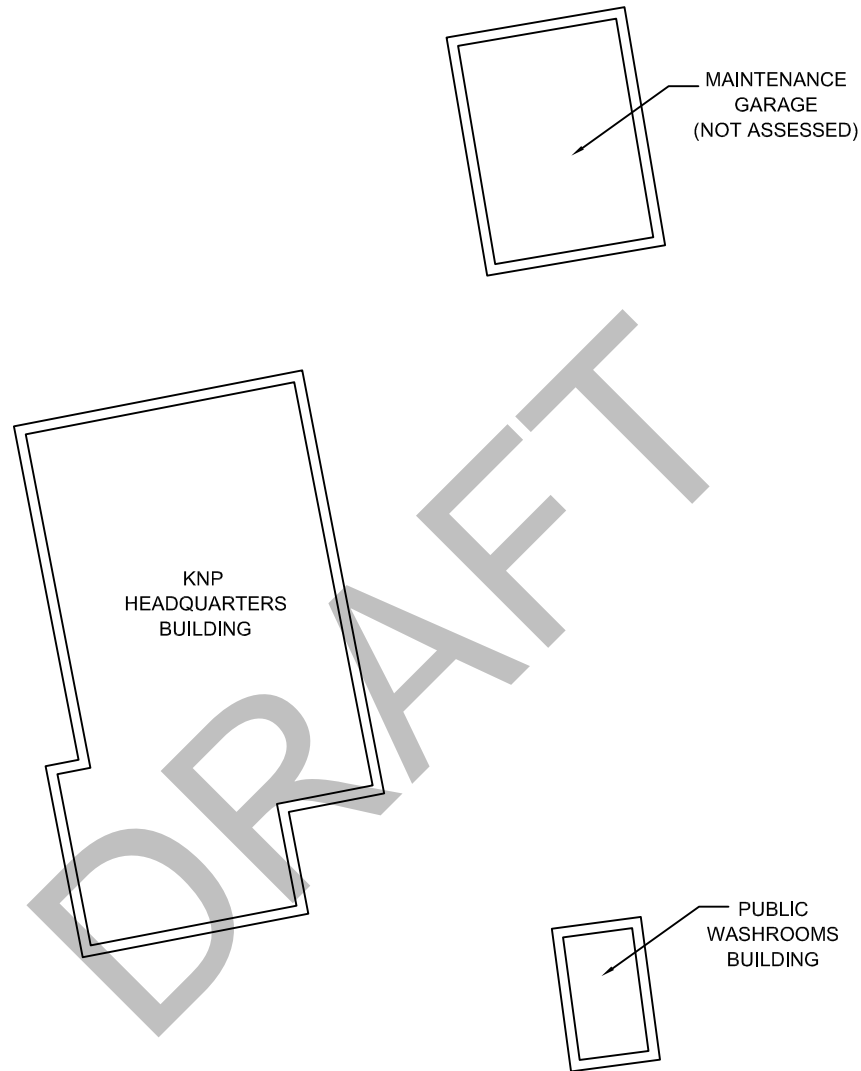
DRAFT

Appendix A
Building List

DRAFT

Appendix	Building Name	Building Status	Year Built	Area (Square Metres)
KNP Headquarters				
B	KNP Headquarters Building	For Renovation	Unknown	Unknown
C	Public Washrooms Building	For Renovation	1996	Unknown
Farm Site				
D	Stores Maintenance Building	For Demolition	1988	1,235
E	Wardens Office Building	For Demolition	1956	205
F	Vehicle Garage Building	For Demolition	1957	367
G	Butler Storage Shed	For Demolition	1957	312
H	Fire Cache	For Demolition	Unknown	Unknown
I	Pump House	For Demolition	1956	15
J	Well Shed	For Demolition	1980	16
K	Sewage Treatment Building	For Demolition	1996	34
L	House 1	For Demolition	1960	166
M	House 2	For Demolition	1959	86
N	House 2 Garage	For Demolition	1980	30
O	House 3	For Demolition	1959	86
P	House 3 Garage	For Demolition	1980	30
Q	House 4	For Demolition	1961	86
R	House 4 Garage	For Demolition	1980	30

DRAFT



KNP HEADQUARTERS

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SITE PLAN

HAINES JUNCTION, YT

Client:

PARKS CANADA

Project No.: 144901924

Scale: NTS

Date: 14/11/18

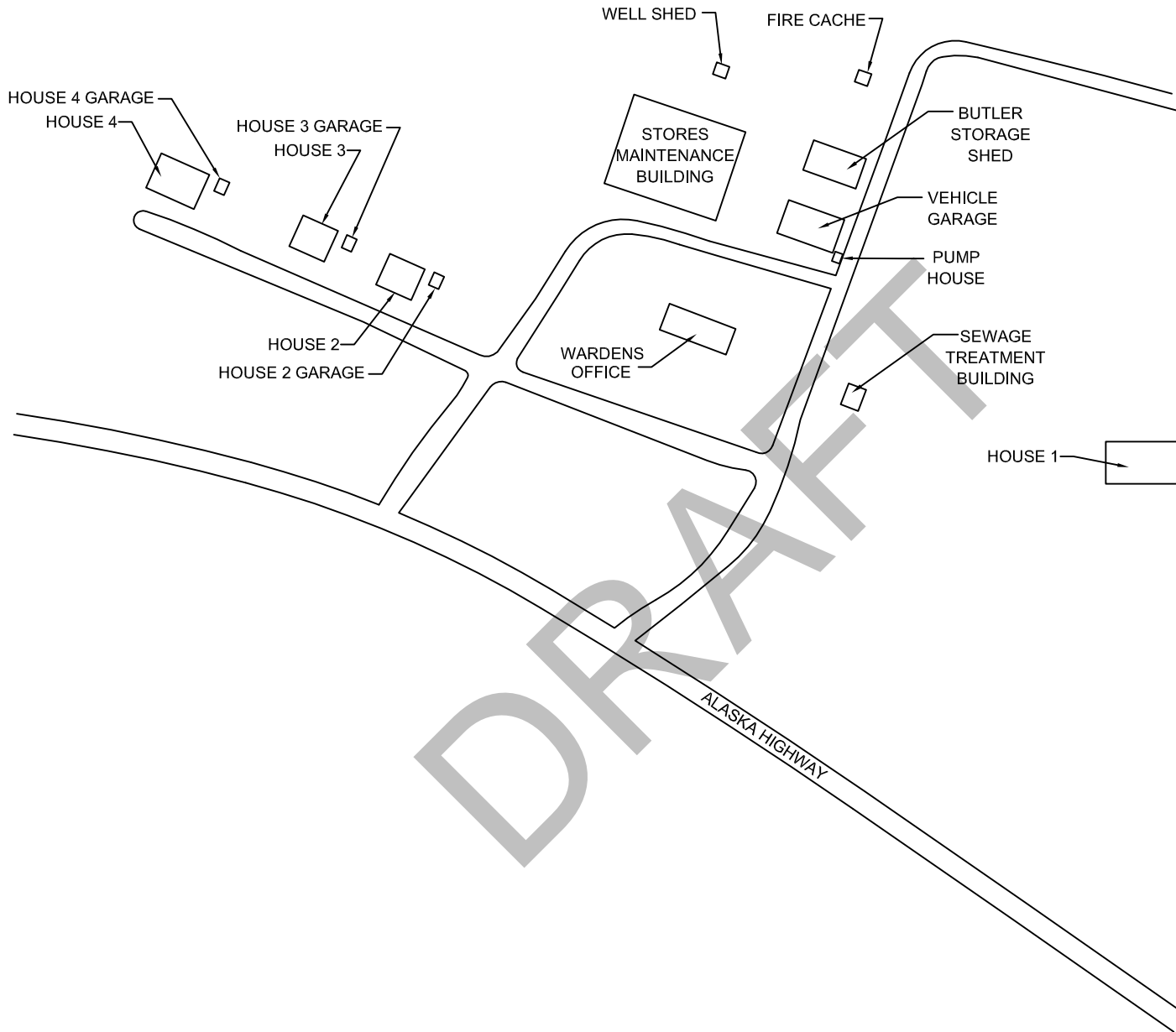
Dwn. By: CD_{DM} SL2014110100

App'd By: TW

Dwg. No.:

A1





NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SITE PLAN

HAINES JUNCTION, YT

Client:

PARKS CANADA

Project No.: 144901924

Scale: NTS

Date: 14/11/18

Dwn. By: CD_{DM} SL2014110101

App'd By: TW

Dwg. No.:

A2



Appendix B
Findings and Recommendations
– KNP Headquarters Building

DRAFT

B-4.0 FINDINGS – KNP HEADQUARTERS BUILDING

The KNP Headquarters Building was reportedly constructed prior to 1990.

Stantec understands that significant renovations are planned for the KNP Headquarters Building.

The results of the assessment for each of the considered hazardous materials within the KNP Headquarters Building are provided in the following sub-sections.

Floor plan drawings for the KNP Headquarters Building, which include locations of the samples collected during this assessment and locations of identified hazardous building materials (where practical), are attached to this Appendix.

B-4.1 Asbestos

Stantec identified and sampled various suspected ACMs, including the following:

- Mechanical gaskets
- Window caulking
- Pipe fitting insulation
- Boiler exhaust insulation
- Ceiling tiles
- Drywall joint compound
- HVAC duct mastic
- Vent caulking
- Pipe fitting sealant
- Vinyl floor tile (and associated mastic)
- Sheet flooring
- Roof shingles
- Wall mastic
- Countertop caulking
- Floor caulking
- Cement panel
- Cement footing wrap.

Eighty-eight samples of the above-noted suspected ACMs were collected and submitted to EMSL for analysis of asbestos content and nature.

A summary of the sample types, locations and analytical results is presented in Table B-4.1.1, below. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are attached at the end of this Appendix.

It should be noted that several bulk samples of vinyl floor tile were further separated into layers during laboratory analysis.

Table B-4.1.1 Suspected ACM Sample Collection and Analysis Summary
KNP Headquarters Building, Haines Junction, YT

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
HQ-MG-01A	Mechanical gasket – White	Penthouse	25% Chrysotile
HQ-MG-01B	Mechanical gasket – White	Penthouse	Stop Positive
HQ-MG-01C	Mechanical gasket – White	Penthouse	Stop Positive
HQ-WPC-01A	Window pane caulking - Black	Between window frame and glass pane on inner vestibule windows at the front entrance	0.58% Chrysotile
HQ-WPC-01B	Window pane caulking - Black	Between window frame and glass pane on inner vestibule windows at the front entrance	<0.25% Chrysotile
HQ-WPC-01C	Window pane caulking - Black	Between window frame and glass pane on inner vestibule windows at the front entrance	Insufficient Material
HQ-FI-01A	Fitting insulation – Grey	Penthouse	None Detected
HQ-FI-01B	Fitting insulation – Grey	Penthouse	None Detected
HQ-FI-01C	Fitting insulation – Grey	Penthouse	None Detected
HQ-FI-02A	Fitting insulation – Grey	Boiler room	None Detected
HQ-FI-02B	Fitting insulation – Grey	Boiler room	None Detected
HQ-FI-02C	Fitting insulation – Grey	Boiler room	None Detected
HQ-BEI-01A	Boiler exhaust insulation – White	Boiler room	None Detected
HQ-BEI-01B	Boiler exhaust insulation – White	Boiler room	None Detected
HQ-BEI-01C	Boiler exhaust insulation – White	Boiler room	None Detected
HQ-CT-01A	White 2'x4' ceiling tile – Standard fissure and pinhole (light red backing)	Theatre	<1% Chrysotile
HQ-CT-01B	White 2'x4' ceiling tile – Standard fissure and pinhole (light red backing)	Theatre	<1% Chrysotile
HQ-CT-01C	White 2'x4' ceiling tile – Standard fissure and pinhole (light red backing)	Theatre	<1% Chrysotile

**Table B-4.1.1 Suspected ACM Sample Collection and Analysis Summary
KNP Headquarters Building, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
HQ-CT-02A	White 2'x4' ceiling tile – Directional fissure and pinhole	Office hallway	None Detected
HQ-CT-02B	White 2'x4' ceiling tile – Directional fissure and pinhole	Office hallway	None Detected
HQ-CT-02C	White 2'x4' ceiling tile – Directional fissure and pinhole	Office hallway	None Detected
HQ-CT-03A	White 2'x4' ceiling tile – Fissure	Office hallway	None Detected
HQ-CT-03B	White 2'x4' ceiling tile – Fissure	Office hallway	None Detected
HQ-CT-03C	White 2'x4' ceiling tile – Fissure	Office hallway	None Detected
HQ-DJC-01A	Drywall joint compound – Upper floor	Entrance hallway to theatre	None Detected
HQ-DJC-01B	Drywall joint compound – Upper floor	Theatre	None Detected
HQ-DJC-01C	Drywall joint compound – Upper floor	Inside back entrance	None Detected
HQ-DJC-01D	Drywall joint compound – Upper floor	Office hallway	None Detected
HQ-DJC-01E	Drywall joint compound – Upper floor	Office hallway	None Detected
HQ-DJC-02A	Drywall joint compound – Lower floor	Stairwell	None Detected
HQ-DJC-02B	Drywall joint compound – Lower floor	Hallway at telecom room	None Detected
HQ-DJC-02C	Drywall joint compound – Lower floor	Entrance to storage room	None Detected
HQ-DM-01A	Duct mastic – Red	On seams and connectors of the air handling unit in the penthouse	None Detected
HQ-DM-01B	Duct mastic – Red	On seams and connectors of the air handling unit in the penthouse	Insufficient Material
HQ-DM-01C	Duct mastic – Red	On seams and connectors of the air handling unit in the penthouse	Insufficient Material

**Table B-4.1.1 Suspected ACM Sample Collection and Analysis Summary
KNP Headquarters Building, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
HQ-IWC-01A	Interior window caulking – Black	Around window/door panes and frames in the boardroom	None Detected
HQ-IWC-01B	Interior window caulking – Black	Around window/door panes and frames in the boardroom	None Detected
HQ-IWC-01C	Interior window caulking – Black	Around window/door panes and frames in the boardroom	None Detected
HQ-EWFC-01A	Exterior window frame caulking – White	Between window frames and the building on the exterior	None Detected
HQ-EWFC-01B	Exterior window frame caulking – White	Between window frames and the building on the exterior	None Detected
HQ-EWFC-01C	Exterior window frame caulking – White	Between window frames and the building on the exterior	None Detected
HQ-HVC-01A	HVAC vent caulking – Black	Around exterior of HVAC exhaust vent from the penthouse	<0.25% Chrysotile
HQ-HVC-01B	HVAC vent caulking – Black	Around exterior of HVAC exhaust vent from the penthouse	0.45% Chrysotile
HQ-HVC-01C	HVAC vent caulking – Black	Around exterior of HVAC exhaust vent from the penthouse	1.2% Chrysotile
HQ-PS-01A	Pipe sealant – White	Inside pipe fittings in the penthouse	None Detected
HQ-PS-01B	Pipe sealant – White	Inside pipe fittings in the penthouse	None Detected
HQ-PS-01C	Pipe sealant – White	Inside pipe fittings in the penthouse	None Detected
HQ-FT-01	12"x12" vinyl floor tile – Brown with white streaks	Janitors closet	<0.25% Chrysotile
HQ-FT-01-Mastic	Floor tile mastic – Black	Janitors closet	None Detected
HQ-FT-02	12"x12" vinyl floor tile – Brown with white streaks	Shedder room	<0.25% Chrysotile
HQ-FT-02-Mastic	Floor tile mastic – Black	Shedder room	None Detected
HQ-SF-01	Vinyl sheet flooring – Turquoise with white streaks	Theatre projector room	None Detected
HQ-SF-02	Vinyl sheet flooring – Turquoise with white streaks	Reception area	None Detected
HQ-SF-03	Vinyl sheet flooring – Turquoise with white streaks	Kitchen	None Detected

**Table B-4.1.1 Suspected ACM Sample Collection and Analysis Summary
KNP Headquarters Building, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
HQ-RS-01A	Roof shingle – Tar and gravel	Roof	None Detected
HQ-RS-01B	Roof shingle – Tar and gravel	Roof	None Detected
HQ-RS-01C	Roof shingle – Tar and gravel	Roof	None Detected
HQ-WM-01A	Wall mastic – Tan	Roof above skylight windows	None Detected
HQ-WM-01B	Wall mastic – Tan	Roof above skylight windows	None Detected
HQ-WM-01C	Wall mastic – Tan	Roof above skylight windows	None Detected
HQ-RVM-01A	Roof vent mastic – White	On vent seam on roof of the penthouse	None Detected
HQ-RVM-01B	Roof vent mastic – White	On vent seam on roof of the penthouse	None Detected
HQ-RVM-01C	Roof vent mastic – White	On vent seam on roof of the penthouse	None Detected
HQ-KCC-01A	Kitchen counter caulking – White	Kitchen between counter and wall	None Detected
HQ-KCC-01B	Kitchen counter caulking – White	Kitchen between counter and wall	None Detected
HQ-KCC-01C	Kitchen counter caulking – White	Kitchen between counter and wall	None Detected
HQ-FC-01A	Floor caulking – Clear	Front entrance vestibule	None Detected
HQ-FC-01B	Floor caulking – Clear	Front entrance vestibule	None Detected
HQ-FC-01C	Floor caulking – Clear	Front entrance vestibule	None Detected
HQ-CC-01A	Counter caulking – White	Men's washroom between counter and wall	None Detected
HQ-CC-01B	Counter caulking – White	Men's washroom between counter and wall	None Detected
HQ-CC-01C	Counter caulking – White	Men's washroom between counter and wall	None Detected
HQ-CP-01A	Cement panel	Base of exterior wall	8% Chrysotile
HQ-CP-01B	Cement panel	Base of exterior wall	Stop Positive
HQ-CP-01C	Cement panel	Base of exterior wall	Stop Positive
HQ-EWPC-01A	Exterior window pane caulking – Black	Between window frame and glass pane on the building exterior	1.4% Chrysotile

**Table B-4.1.1 Suspected ACM Sample Collection and Analysis Summary
KNP Headquarters Building, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
HQ-EWPC-01B	Exterior window pane caulking – Black	Between window frame and glass pane on the building exterior	Stop Positive
HQ-EWPC-01C	Exterior window pane caulking – Black	Between window frame and glass pane on the building exterior	Stop Positive
HQ-EWFC-01A	Exterior window frame caulking – Black	Between window frame and building on the building exterior	None Detected
HQ-EWFC-01B	Exterior window frame caulking – Black	Between window frame and building on the building exterior	None Detected
HQ-EWFC-01C	Exterior window frame caulking – Black	Between window frame and building on the building exterior	None Detected
HQ-PS-02A	Pipe sealant – Red	Inside pipe fittings associated with exterior fuel tank	None Detected
HQ-PS-02B	Pipe sealant – Red	Inside pipe fittings associated with exterior fuel tank	None Detected
HQ-PS-02C	Pipe sealant – Red	Inside pipe fittings associated with exterior fuel tank	None Detected
HQ-PS-03A	Pipe sealant – Cream	Inside pipe fittings associated with exterior fuel tank	None Detected
HQ-PS-03B	Pipe sealant – Cream	Inside pipe fittings associated with exterior fuel tank	None Detected
HQ-PS-03C	Pipe sealant – Cream	Inside pipe fittings associated with exterior fuel tank	None Detected
HQ-CW-01A	Cement footing wrap – Yellow	Around base of cement footing of exterior columns	None Detected
HQ-CW-01A	Cement footing wrap – Yellow	Around base of cement footing of exterior columns	None Detected
HQ-CW-01A	Cement footing wrap – Yellow	Around base of cement footing of exterior columns	None Detected

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of suspected ACM sample analytical results, the materials presented in Table B-4.1.2, below were identified as ACMs.

Table B-4.1.2 Summary of Identified ACMs
KNP Headquarters Building, Haines Junction, YT

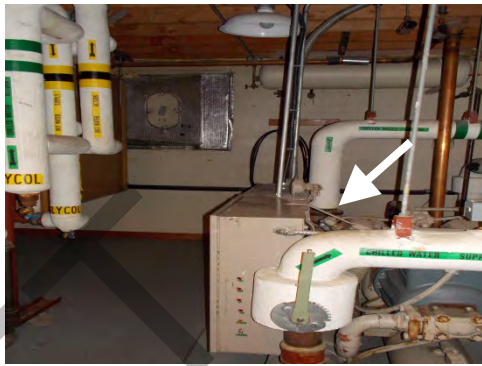
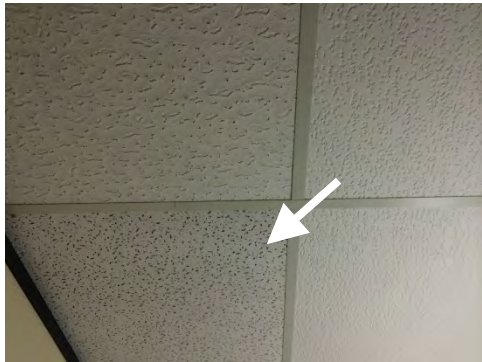



Identified ACM Description and Condition Information		Photo
White mechanical gaskets in flanges of chilled water supply lines in the penthouse		
Friability	Friable	
Condition	Good	
Content	25% Chrysotile	
Black window pane caulking between window frames and glass panes throughout, including inner vestibule windows at the front entrance		No photo.
Friability	Non-friable	
Condition	Good	
Content	< 0.25 – 1.4% Chrysotile	
White 2'x4' ceiling tile – Standard fissure and pinhole (light red backing) throughout		
Friability	Friable	
Condition	Good	
Content	< 1% Chrysotile	

Table B-4.1.2 Summary of Identified ACMs
KNP Headquarters Building, Haines Junction, YT

Identified ACM Description and Condition Information		Photo
Black HVAC vent caulking around the seams of a vent from the penthouse to the roof		
Friability	Non-friable	
Condition	Good	
Content	< 0.25 – 1.2% Chrysotile	
12"x12" vinyl floor tile – Brown with white streaks in locations as indicated on attached drawings		
Friability	Non-friable	
Condition	Good	
Content	< 0.25% Chrysotile	
Cement panel around the base of exterior walls		
Friability	Non-friable	
Condition	Good	
Content	8% Chrysotile	

B-4.2 Lead

Lead is expected to be present in the following materials:

- Solder used on copper domestic pipes
- Caulking on bell fittings for cast iron drainage pipes
- Electrical equipment (i.e. batteries for emergency lighting/signage).



With respect to paint, 7 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table B-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

Table B-4.2.1 Suspected LCP Sample Collection and Analysis Summary
KNP Headquarters Building, Haines Junction, YT

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
HQ-P-01	Interior walls	Cream	<92	No
HQ-P-02	Floor of entrance vestibule	Brown	<90	No
HQ-P-03	Penthouse floor	Grey	5,600	Yes
HQ-P-04	Steel structural components	Red	2,800	Yes
HQ-P-05	Lower level walls	White	<90	No
HQ-P-06	Exterior railings	Beige	13,000	Yes
HQ-P-07	Wooden exterior deck	Grey	<90	No

Based on our observations and on our interpretations of suspected LCP sample analytical results, the materials presented in Table B-4.2.2, below were identified as LCPs.

Table B-4.2.2 Summary of Identified LCPs
KNP Headquarters Building, Haines Junction, YT

Identified LCP Description	Photo
Grey paint on the floor of the penthouse. This paint was observed to be in good condition (not bubbling, flaking or peeling).	
Red paint on structural steel components throughout. This paint was observed to be in good condition (not bubbling, flaking or peeling).	No photo.
Beige paint on exterior railings. This paint was observed to be in good condition (not bubbling, flaking or peeling).	

B-4.3 Polychlorinated Biphenyls

It is estimated that there are approximately 140 ballasts within the fluorescent light fixtures observed throughout. Based on the age of the building, fluorescent light ballasts may contain PCBs.

B-4.4 Mercury


Four (4) suspected mercury-containing thermometers were observed in the penthouse and four (4) were also observed in the lower level boiler room, as indicated on the attached floor plan drawings.

Mercury vapour is expected to be present in fluorescent light bulbs/tubes throughout.

B-4.5 Mould

Moisture damage was observed as summarized in Table B-4.5, below.


Table B-4.5 Summary of Identified Mould and/or Moisture-Impacted Materials
KNP Headquarters Building, Haines Junction, YT

Identified Mould and/or Moisture Impacted Materials Description	Photo
Moisture stained drywall was observed at the top of the South wall in the theater.	

B-4.6 Ozone-Depleting Substances

ODSs were observed as summarized in Table B-4.6, below.

Table B-4.6: Summary of Equipment Containing ODSs
KNP Headquarters Building, Haines Junction, YT

Suspected ODS-Containing Equipment	Photo
The small air conditioning unit located on the roof is suspected to contain ODSs.	

B-4.7 Silica

Silica may be present in concrete, cement, ceramic tiles, and acoustical ceiling tiles observed in various locations throughout.

B-5.0 BUILDING-SPECIFIC RECOMMENDATIONS

In general, identified hazardous building materials should be handled in accordance with the recommendations for renovation and continued operation that are provided in Section 5 of the main body of this report. Additional building-specific recommendations to be considered during the renovation project are provided below.

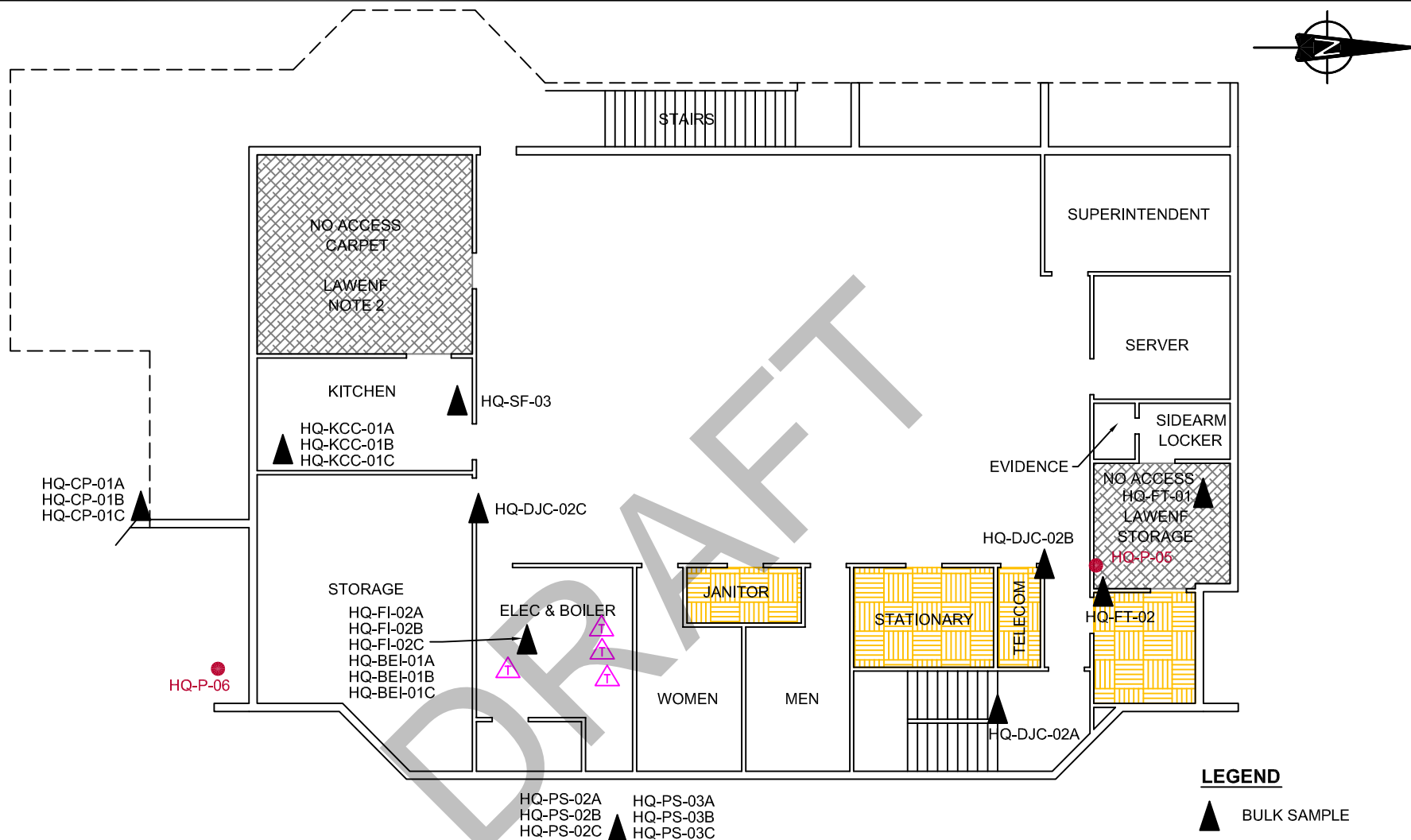
B-5.1 Mould

Documents published by Health Canada, Ontario Ministry of Health, American Industrial Hygiene Association (AIHA), American Conference of Governmental Industrial Hygienists (ACGIH) and others, provide guidance for interpreting the results of mold investigations. The Health Canada Guide states that:

"Identifiable promoters of fungal growth require correction, and any visible fungi require removal."

To this end, Stantec recommends the following course of action during renovation work within the subject building:

- Remove and replace moisture-stained materials (drywall) with new materials.
 - This work can be conducted by renovation workers that are notified of the potential presence of mould contamination and provided with appropriate training and personal protective equipment (e.g. N95 respirators, disposable protective clothing).
 - If significant concealed mould contamination is identified during the work, additional assessment and/or completion of work by an experienced mould abatement contractor may be required.
 - An assessment to determine the likely source(s) of the observed moisture staining should be undertaken once building materials are removed, and the source(s) should be corrected as part of the renovation project.



KNP HEADQUARTERS BUILDING LOWER LEVEL

- NOTES:** 1. BLACK WINDOW PANE CAULKING BETWEEN FRAMES AND GLASS PANES THROUGHOUT IS ACM.
 2. WHITE 2'X4' CEILING TILE (STANDARD FISSURE AND PINHOLE WITH LIGHT RED BACKING) THROUGHOUT IS ACM.
 3. CEMENT PANEL AROUND THE BASE OF EXTERIOR WALLS IS ACM.
 4. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

LEGEND

- BULK SAMPLE
- PAINT CHIP SAMPLE
- ASBESTOS-CONTAINING VINYL FLOOR TILES
- AREA NOT ACCESSED
- MERCURY-CONTAINING THERMOMETER

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

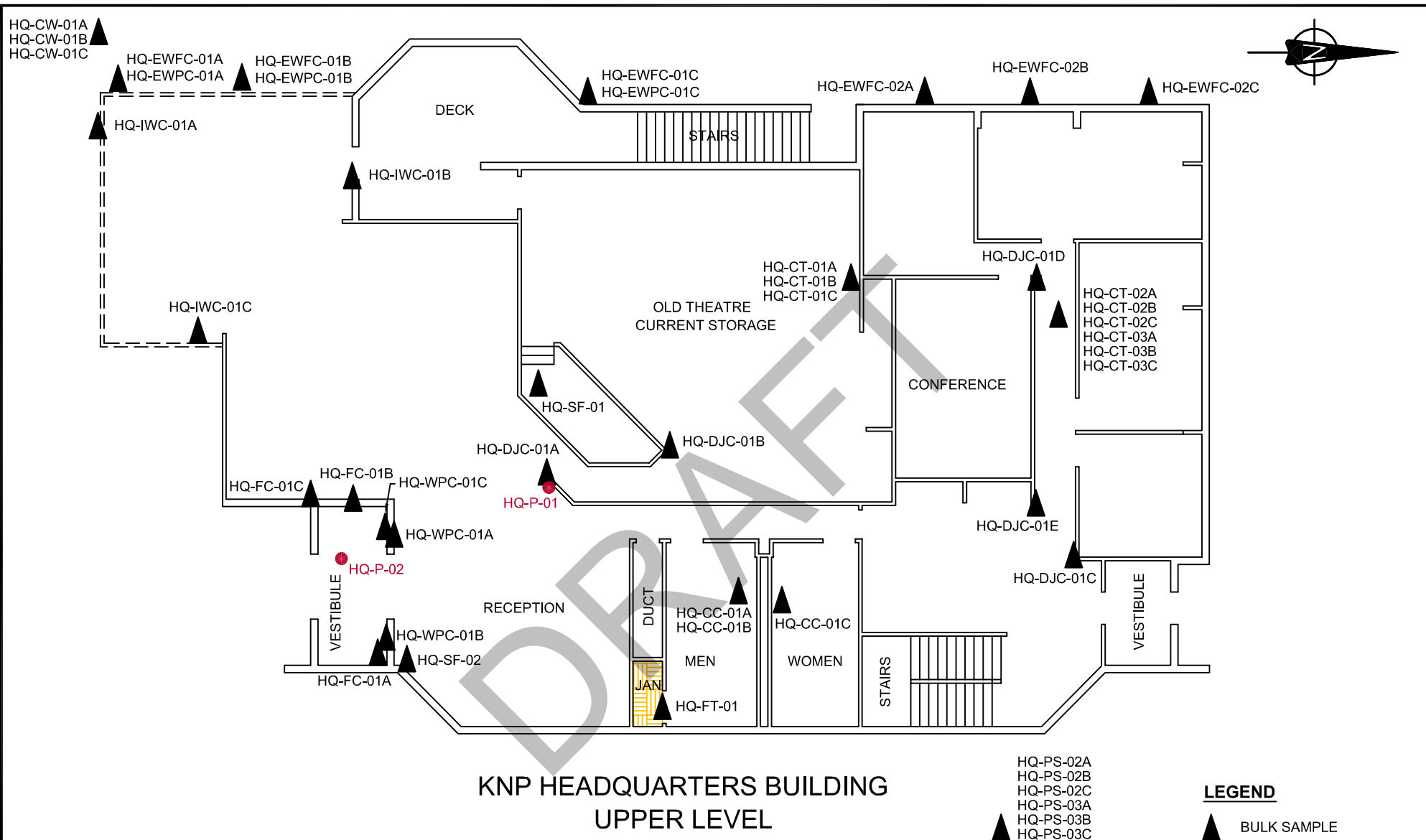
Client: PARKS CANADA

Project No.: 144901924
Scale: NTS
Date: 14/11/18
Dwn. By: CD <small>SL2014110102 PK/DM</small>
App'd By: TW

Dwg. No.:

B1





- NOTES:**
1. BLACK WINDOW PANE CAULKING BETWEEN FRAMES AND GLASS PANES THROUGHOUT IS ACM.
 2. WHITE 2'X4' CEILING TILE (STANDARD FISSURE AND PINHOLE WITH LIGHT RED BACKING) THROUGHOUT IS ACM.
 3. CEMENT PANEL AROUND THE BASE OF EXTERIOR WALLS IS ACM.
 4. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

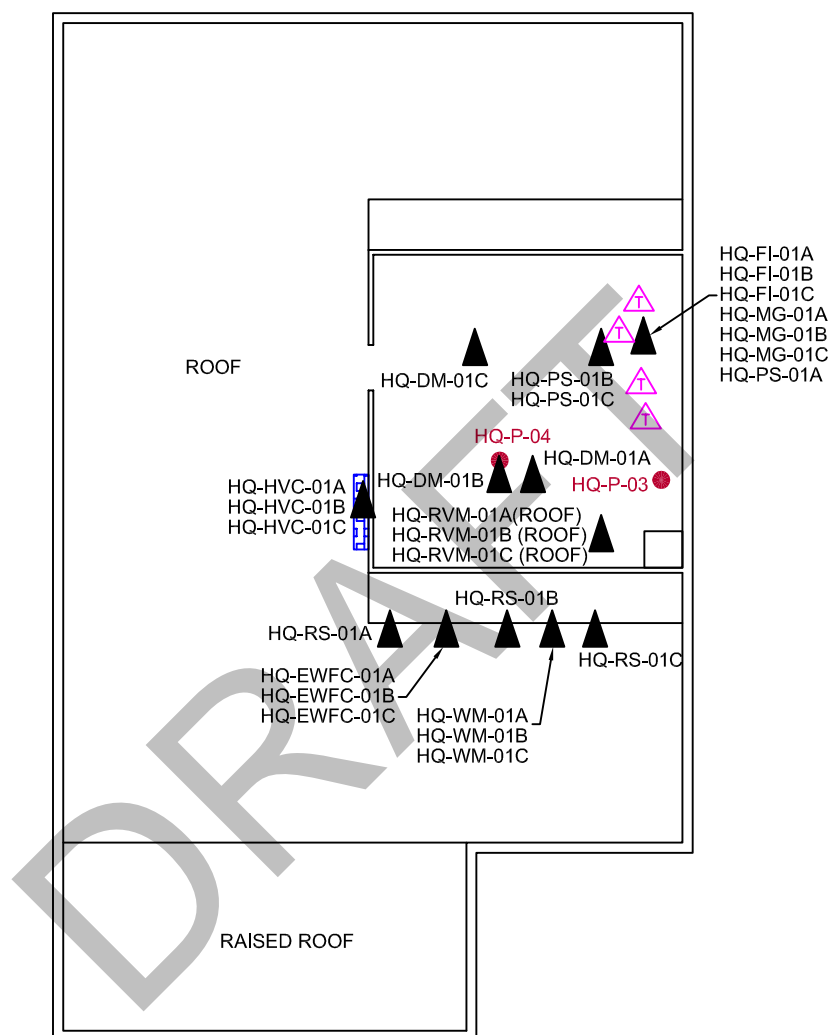
Client: PARKS CANADA

Project No.: 144901924
Scale: NTS
Date: 14/11/18
Dwn. By: CD <small>SL2014110103 PK/DM</small>
App'd By: TW

Dwg. No.:

B2





KNP HEADQUARTERS BUILDING PENTHOUSE

LEGEND

- BULK SAMPLE
- PAINT CHIP SAMPLE
- ASBESTOS-CONTAINING VENT CAULKING
- MERCURY-CONTAINING THERMOMETER

NOTES: 1. WHITE MECHANICAL GASKETS IN FLANGES OF CHILLED WATER SUPPLY LINES ARE ACM THROUGHOUT.
2. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

Client: PARKS CANADA

Project No.: 144901924
Scale: NTS
Date: 14/11/18
Dwn. By: CD <small>SL2014110104 PK/DM</small>
App'd By: TW

Dwg. No.:

B3



DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
HQ-WPC-01A 551407481-0004	WINDOW PANE CAULKING- BLACK - BETWEEN WINDOW FRAME AND GLASS PANE ON INNER VESTIBULE WINDOWS AT THE FRONT ENTRANCE	Gray Fibrous Homogeneous	99.4	None	0.58% Chrysotile
HQ-WPC-01B 551407481-0005	WINDOW PANE CAULKING- BLACK - BETWEEN WINDOW FRAME AND GLASS PANE ON INNER VESTIBULE WINDOWS AT THE FRONT ENTRANCE	Gray/Black Non-Fibrous Homogeneous	100	None	<0.25% Chrysotile
HQ-WPC-01C 551407481-0006	WINDOW PANE CAULKING- BLACK - BETWEEN WINDOW FRAME AND GLASS PANE ON INNER VESTIBULE WINDOWS AT THE FRONT ENTRANCE				
Insufficient Material					
HQ-DM-01A 551407481-0033	DUCT MASTIC-RED - ON SEAMS AND CONNECTORS OF THE AIR HANDLING UNIT IN THE PENTHOUSE	Red/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-DM-01B 551407481-0034	DUCT MASTIC-RED - ON SEAMS AND CONNECTORS OF THE AIR HANDLING UNIT IN THE PENTHOUSE				
Insufficient Material					

Analyst(s)

Jon Delos Santos (14)

Nicole Yeo (36)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:08:34

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
HQ-DM-01C 551407481-0035	DUCT MASTIC-RED - ON SEAMS AND CONNECTORS OF THE AIR HANDLING UNIT IN THE PENTHOUSE				
Insufficient Material					
HQ-IWC-01A 551407481-0036	INTERIOR WINDOW CAULKING-BLACK - AROUND WINDOW/DOOR PANES AND FRAMES IN THE BOARDROOM	Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-IWC-01B 551407481-0037	INTERIOR WINDOW CAULKING-BLACK - AROUND WINDOW/DOOR PANES AND FRAMES IN THE BOARDROOM	Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-IWC-01C 551407481-0038	INTERIOR WINDOW CAULKING-BLACK - AROUND WINDOW/DOOR PANES AND FRAMES IN THE BOARDROOM	Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-EWFC-01A 551407481-0039	EXTERIOR WINDOW FRAME CAULKING-WHITE - BETWEEN WINDOW FRAMES AND THE BUILDING ON THE EXTERIOR	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (14)

Nicole Yeo (36)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:08:34

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
HQ-EWFC-01B 551407481-0040	EXTERIOR WINDOW FRAME CAULKING-WHITE - BETWEEN WINDOW FRAMES AND THE BUILDING ON THE EXTERIOR	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-EWFC-01C 551407481-0041	EXTERIOR WINDOW FRAME CAULKING-WHITE - BETWEEN WINDOW FRAMES AND THE BUILDING ON THE EXTERIOR	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-HVC-01A 551407481-0042	HVAC VENT CAULKING-BLACK - AROUND EXTERIOR OF HVAC EXHAUST VENT FROM THE PENTHOUSE	Brown Non-Fibrous Homogeneous	100	None	<0.25% Chrysotile
HQ-HVC-01B 551407481-0043	HVAC VENT CAULKING-BLACK - AROUND EXTERIOR OF HVAC EXHAUST VENT FROM THE PENTHOUSE	Gray/Black Non-Fibrous Homogeneous	99.5	None	0.45% Chrysotile
HQ-HVC-01C 551407481-0044	HVAC VENT CAULKING-BLACK - AROUND EXTERIOR OF HVAC EXHAUST VENT FROM THE PENTHOUSE	Gray Non-Fibrous Homogeneous	98.8	None	1.2% Chrysotile
HQ-PS-01A 551407481-0045	PIPE SEALANT-WHITE - INSIDE PIPE FITTINGS IN THE PENTHOUSE	Gray/White Non-Fibrous Homogeneous	95.9	4.1 Wollastonite	No Asbestos Detected

Analyst(s)

Jon Delos Santos (14)

Nicole Yeo (36)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:08:34

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
HQ-PS-01B 551407481-0046	PIPE SEALANT-WHITE - INSIDE PIPE FITTINGS IN THE PENTHOUSE	Gray/White Non-Fibrous Homogeneous	94.5	5.5 Wollastonite	No Asbestos Detected
HQ-PS-01C 551407481-0047	PIPE SEALANT-WHITE - INSIDE PIPE FITTINGS IN THE PENTHOUSE	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-FT-01 551407481-0048	12"X12" VINYL FLOOR TILE- BROWN WITH WHITE STREAKS - JANITORS CLOSET	Beige Non-Fibrous Homogeneous	100	None	<0.25% Chrysotile
HQ-FT-01-Mastic 551407481-0048A	12"X12" VINYL FLOOR TILE- BROWN WITH WHITE STREAKS - JANITORS CLOSET	Brown/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-FT-02 551407481-0049	12"X12" VINYL FLOOR TILE- BROWN WITH WHITE STREAKS - SHEDDER ROOM	Beige Non-Fibrous Homogeneous	100	None	<0.25% Chrysotile
HQ-FT-02-Mastic 551407481-0049A	12"X12" VINYL FLOOR TILE- BROWN WITH WHITE STREAKS - SHEDDER ROOM	Gray/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-SF-01 551407481-0050	VINYL SHEET FLOORING- TURQUOISE WITH WHITE STREAKS - THEATRE PROJECTOR ROOM	Blue Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (14)

Nicole Yeo (36)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:08:34

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
HQ-SF-02 551407481-0051	VINYL SHEET FLOORING-TURQUOISE WITH WHITE STREAKS - RECEPTION AREA	Blue/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-SF-03 551407481-0052	VINYL SHEET FLOORING-TURQUOISE WITH WHITE STREAKS - KITCHEN	Black/Blue Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-RS-01A 551407481-0053	ROOF SHINGLE-TAR AND GRAVEL - ROOF	Various/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-RS-01B 551407481-0054	ROOF SHINGLE-TAR AND GRAVEL - ROOF	Various/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-RS-01C 551407481-0055	ROOF SHINGLE-TAR AND GRAVEL - ROOF	Various/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-WM-01A 551407481-0056	WALL MASTIC-TAN - ROOF ABOVE SKYLIGHT WINDOWS	White/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-WM-01B 551407481-0057	WALL MASTIC-TAN - ROOF ABOVE SKYLIGHT WINDOWS	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-WM-01C 551407481-0058	WALL MASTIC-TAN - ROOF ABOVE SKYLIGHT WINDOWS	White/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (14)

Nicole Yeo (36)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:08:34

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
HQ-RVM-01A 551407481-0059	ROOF VENT MASTIC-WHITE - ON VENT SEAM ON ROOF OF THE PENTHOUSE	Brown Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-RVM-01B 551407481-0060	ROOF VENT MASTIC-WHITE - ON VENT SEAM ON ROOF OF THE PENTHOUSE	Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-RVM-01C 551407481-0061	ROOF VENT MASTIC-WHITE - ON VENT SEAM ON ROOF OF THE PENTHOUSE	Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-KCC-01A 551407481-0062	KITCHEN COUNTER CAULKING-WHITE - KITCHEN BETWEEN COUNTER AND WALL	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-KCC-01B 551407481-0063	KITCHEN COUNTER CAULKING-WHITE - KITCHEN BETWEEN COUNTER AND WALL	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-KCC-01C 551407481-0064	KITCHEN COUNTER CAULKING-WHITE - KITCHEN BETWEEN COUNTER AND WALL	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-FC-01A 551407481-0065	FLOOR CAULKING-CLEAR - FRONT ENTRANCE VESTIBULE	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-FC-01B 551407481-0066	FLOOR CAULKING-CLEAR - FRONT ENTRANCE VESTIBULE	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (14)

Nicole Yeo (36)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:08:34

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
HQ-FC-01C 551407481-0067	FLOOR CAULKING-CLEAR - FRONT ENTRANCE VESTIBULE	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-CC-01A 551407481-0068	COUNTER CAULKING-WHITE - MEN'S WASHROOM BETWEEN COUNTER AND WALL	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-CC-01B 551407481-0069	COUNTER CAULKING-WHITE - MEN'S WASHROOM BETWEEN COUNTER AND WALL	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-CC-01C 551407481-0070	COUNTER CAULKING-WHITE - MEN'S WASHROOM BETWEEN COUNTER AND WALL	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-EWPC-01A 551407481-0074	EXTERIOR WINDOW PANE CAULKING-BLACK - BETWEEN WINDOW FRAME AND GLASS PANE ON THE BUILDING EXTERIOR	Brown Non-Fibrous Homogeneous	98.6	None	1.4% Chrysotile
HQ-EWPC-01B 551407481-0075	EXTERIOR WINDOW PANE CAULKING-BLACK - BETWEEN WINDOW FRAME AND GLASS PANE ON THE BUILDING EXTERIOR				

Positive Stop (Not Analyzed)

Analyst(s)

Jon Delos Santos (14)

Nicole Yeo (36)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:08:34

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
HQ-EWPC-01C 551407481-0076	EXTERIOR WINDOW PANE CAULKING-BLACK - BETWEEN WINDOW FRAME AND GLASS PANE ON THE BUILDING EXTERIOR				
Positive Stop (Not Analyzed)					
HQ-EWFC-01A 551407481-0077	EXTERIOR WINDOW FRAME CAULKING-BLACK - BETWEEN WINDOW FRAME AND BUILDING ON THE BUILDING EXTERIOR	Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-EWFC-01B 551407481-0078	EXTERIOR WINDOW FRAME CAULKING-BLACK - BETWEEN WINDOW FRAME AND BUILDING ON THE BUILDING EXTERIOR	Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-EWFC-01C 551407481-0079	EXTERIOR WINDOW FRAME CAULKING-BLACK - BETWEEN WINDOW FRAME AND BUILDING ON THE BUILDING EXTERIOR	Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-PS-02A 551407481-0080	PIPE SEALANT-RED - INSIDE PIPE FITTINGS ASSOCIATED WITH EXTERIOR FULE TANK	Red Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-PS-02B 551407481-0081	PIPE SEALANT-RED - INSIDE PIPE FITTINGS ASSOCIATED WITH EXTERIOR FULE TANK	Red Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (14)

Nicole Yeo (36)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:08:34

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
HQ-PS-02C 551407481-0082	PIPE SEALANT-RED - INSIDE PIPE FITTINGS ASSOCIATED WITH EXTERIOR FULE TANK	Red Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-PS-03A 551407481-0083	PIPE SEALANT-CREAM - INSIDE PIPE FITTINGS ASSOCIATED WITH EXTERIOR FUEL TANK	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-PS-03B 551407481-0084	PIPE SEALANT-CREAM - INSIDE PIPE FITTINGS ASSOCIATED WITH EXTERIOR FUEL TANK	Gray/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
HQ-PS-03C 551407481-0085	PIPE SEALANT-CREAM - INSIDE PIPE FITTINGS ASSOCIATED WITH EXTERIOR FUEL TANK	Brown/Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (14)

Nicole Yeo (36)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:08:34

DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
HQ-MG-01A 551407481-0001	MECHANICAL GASKET - WHITE - PENTHOUSE	Gray Fibrous Homogeneous		75% Non-fibrous (other)	25% Chrysotile
HQ-MG-01B 551407481-0002	MECHANICAL GASKET - WHITE - PENTHOUSE				Stop Positive (Not Analyzed)
HQ-MG-01C 551407481-0003	MECHANICAL GASKET - WHITE - PENTHOUSE				Stop Positive (Not Analyzed)
HQ-FI-01A 551407481-0007	FITTING INSULATION - GRAY - PENTHOUSE	Gray Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (other)	None Detected
HQ-FI-01B 551407481-0008	FITTING INSULATION - GRAY - PENTHOUSE	Gray Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (other)	None Detected
HQ-FI-01C 551407481-0009	FITTING INSULATION - GRAY - PENTHOUSE	Gray Fibrous Homogeneous	10% Cellulose 10% Min. Wool	80% Non-fibrous (other)	None Detected
HQ-FI-02A 551407481-0010	FITTING INSULATION - GRAY - BOILER ROOM	Gray Fibrous Homogeneous	15% Min. Wool	85% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (3)

Matthew Davis (22)

Jon Delos Santos (6)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/18/2014 10:08:34

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
 CustomerID: 55JACQ30N
 CustomerPO: 144901924.801
 ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
 Fax: (604) 436-3752
 Received: 10/10/14 11:01 AM
 Analysis Date: 10/17/2014
 Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
HQ-FI-02B 551407481-0011	FITTING INSULATION-GRAY - BOILER ROOM	Gray Fibrous Homogeneous	15% Min. Wool	85% Non-fibrous (other)	None Detected
HQ-FI-02C 551407481-0012	FITTING INSULATION-GRAY - BOILER ROOM	Gray Fibrous Homogeneous	10% Cellulose 10% Min. Wool	80% Non-fibrous (other)	None Detected
HQ-BEI-01A 551407481-0013	BOILER EXHAUST INSULATION-WHITE - BOILER ROOM	White Fibrous Homogeneous	2% Synthetic	98% Non-fibrous (other)	None Detected
HQ-BEI-01B 551407481-0014	BOILER EXHAUST INSULATION-WHITE - BOILER ROOM	White Fibrous Homogeneous	2% Synthetic	98% Non-fibrous (other)	None Detected
HQ-BEI-01C 551407481-0015	BOILER EXHAUST INSULATION-WHITE - BOILER ROOM	White Fibrous Homogeneous	2% Synthetic	98% Non-fibrous (other)	None Detected
HQ-CT-01A 551407481-0016	WHITE 2'X4' CEILING TILE-STANDARD FISSURE AND - PINHOLE(LIGHT RED BACKING)/THEATRE	Gray/White/Red Fibrous Homogeneous		100% Non-fibrous (other)	<1% Chrysotile

Analyst(s)

Arabee Sathiseelan (3)

Matthew Davis (22)

Jon Delos Santos (6)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/18/2014 10:08:34

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
 CustomerID: 55JACQ30N
 CustomerPO: 144901924.801
 ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
 Fax: (604) 436-3752
 Received: 10/10/14 11:01 AM
 Analysis Date: 10/17/2014
 Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
HQ-CT-01B 551407481-0017	WHITE 2'X4' CEILING TILE-STANDARD FISSURE AND - PINHOLE(LIGHT RED BACKING)/ THEATRE	Gray/White/Red Fibrous Homogeneous		100% Non-fibrous (other)	<1% Chrysotile
HQ-CT-01C 551407481-0018	WHITE 2'X4' CEILING TILE-STANDARD FISSURE AND - PINHOLE(LIGHT RED BACKING)/ THEATRE	Gray/Red Fibrous Homogeneous		100% Non-fibrous (other)	<1% Chrysotile
HQ-CT-02A 551407481-0019	WHITE 2'X4' CEILING TILE-DIRECTIONAL FISSURE AND - PINHOLE/OFFICE HALLWAY	Yellow Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (other)	None Detected
HQ-CT-02B 551407481-0020	WHITE 2'X4' CEILING TILE-DIRECTIONAL FISSURE AND - PINHOLE/OFFICE HALLWAY	Yellow Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (3)

Matthew Davis (22)

Jon Delos Santos (6)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/18/2014 10:08:34

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
 CustomerID: 55JACQ30N
 CustomerPO: 144901924.801
 ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
 Fax: (604) 436-3752
 Received: 10/10/14 11:01 AM
 Analysis Date: 10/17/2014
 Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
HQ-CT-02C 551407481-0021	WHITE 2'X4' CEILING TILE - DIRECTIONAL FISSURE AND - PINHOLE/OFFICE HALLWAY	Tan Non-Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected
HQ-CT-03A 551407481-0022	WHITE 2'X4' CEILING TILE - FISSURE - OFFICE HALLWAY	White/Yellow Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected
HQ-CT-03B 551407481-0023	WHITE 2'X4' CEILING TILE - FISSURE - OFFICE HALLWAY	White/Yellow Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (other)	None Detected
HQ-CT-03C 551407481-0024	WHITE 2'X4' CEILING TILE - FISSURE - OFFICE HALLWAY	Tan Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected
HQ-DJC-01A 551407481-0025	DRYWALL JOINT COMPOUND - UPPER FLOOR - ENTRANCE HALLWAY TO THEATRE	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
HQ-DJC-01B 551407481-0026	DRYWALL JOINT COMPOUND - UPPER FLOOR - THEATRE	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (3)

Matthew Davis (22)

Jon Delos Santos (6)

Kevin Pang
 or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/18/2014 10:08:34

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
 CustomerID: 55JACQ30N
 CustomerPO: 144901924.801
 ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
 Fax: (604) 436-3752
 Received: 10/10/14 11:01 AM
 Analysis Date: 10/17/2014
 Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
HQ-DJC-01C 551407481-0027	DRYWALL JOINT COMPOUND- UPPER FLOOR - INSIDE BACK ENTRANCE	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
HQ-DJC-01D 551407481-0028	DRYWALL JOINT COMPOUND- UPPER FLOOR - OFFICE HALLWAY	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
HQ-DJC-01E 551407481-0029	DRYWALL JOINT COMPOUND- UPPER FLOOR - OFFICE HALLWAY	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
HQ-DJC-02A 551407481-0030	DRYWALL JOINT COMPOUND- LOWER FLOOR - STAIRWELL	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
HQ-DJC-02B 551407481-0031	DRYWALL JOINT COMPOUND- LOWER FLOOR - HALLWAY AT TELECOM ROOM	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
HQ-DJC-02C 551407481-0032	DRYWALL JOINT COMPOUND- LOWER FLOOR - ENTRANCE TO STORAGE ROOM	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (3)

Matthew Davis (22)

Jon Delos Santos (6)

Kevin Pang
 or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/18/2014 10:08:34

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos	
			% Fibrous	% Non-Fibrous	% Type	
HQ-CP-01A 551407481-0071	CEMENT PANEL - BASE OF EXTERIOR WALL	Gray/White Fibrous Homogeneous		92% Non-fibrous (other)	8% Chrysotile	
HQ-CP-01B 551407481-0072	CEMENT PANEL - BASE OF EXTERIOR WALL					Stop Positive (Not Analyzed)
HQ-CP-01C 551407481-0073	CEMENT PANEL - BASE OF EXTERIOR WALL					Stop Positive (Not Analyzed)
HQ-CW-01A 551407481-0086	CEMENT FOOTING WRAP- YELLOW - AROUND BASE OF CEMENT FOOTING OF EXTERIOR COLUMNS	Tan Non-Fibrous Homogeneous	85% Cellulose	15% Non-fibrous (other)	None Detected	
HQ-CW-01B 551407481-0087	CEMENT FOOTING WRAP- YELLOW - AROUND BASE OF CEMENT FOOTING OF EXTERIOR COLUMNS	Tan Non-Fibrous Homogeneous	85% Cellulose	15% Non-fibrous (other)	None Detected	

Analyst(s)

Arabee Sathiseelan (3)

Matthew Davis (22)

Jon Delos Santos (6)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/18/2014 10:08:34

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
HQ-CW-01C 551407481-0088	CEMENT FOOTING WRAP- YELLOW - AROUND BASE OF CEMENT FOOTING OF EXTERIOR COLUMNS	Brown/Tan Fibrous Homogeneous	85% Cellulose	15% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (3)

Matthew Davis (22)

Jon Delos Santos (6)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/18/2014 10:08:34

DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: **144901924.801****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
HQ-P-01	551407512-0001 Site: CREAM COLOUR Desc: INTERIOR WALLS Insufficient sample to reach reporting limit.	10/16/2014		<92 ppm
HQ-P-02	551407512-0002 Site: BROWN COLOUR Desc: FLOOR OF ENTRANCE VESTIBULES	10/16/2014		<90 ppm
HQ-P-03	551407512-0003 Site: GREY COLOUR Desc: PENTHOUSE FLOOR	10/16/2014		5600 ppm
HQ-P-04	551407512-0004 Site: RED COLOUR Desc: STEEL STRUCTURAL COMPONENTS	10/16/2014		2800 ppm
HQ-P-05	551407512-0005 Site: WHITE COLOUR Desc: LOWER LEVEL WALLS	10/16/2014		<90 ppm
HQ-P-06	551407512-0006 Site: BEIGE COLOUR Desc: EXTERIOR RAILINGS	10/16/2014		13000 ppm
HQ-P-07	551407512-0007 Site: GREY COLOUR Desc: WOODEN EXTERIOR DECK	10/16/2014		<90 ppm


Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 10/16/2014 16:39:04

DRAFT

Appendix C
Findings and Recommendations
– Public Washrooms Building

DRAFT

C-4.0 FINDINGS – PUBLIC WASHROOMS BUILDING

The Public Washrooms Building was reportedly constructed in 1996.

Stantec understands that significant renovations are planned for the Public Washrooms Building.

The results of the assessment for each of the considered hazardous materials within the Public Washrooms Building are provided in the following sub-sections.

Floor plan drawings for the Public Washrooms Building, which include locations of the samples collected during this assessment, and locations of identified hazardous building materials (where practical), are attached to this Appendix.

C-4.1 Asbestos

Stantec identified and sampled various suspected ACMs, including the following:

- Exterior penetration caulking
- Duct mastic
- Drywall joint compound
- Cement panel.

10 samples of the above-noted suspected ACMs were collected and submitted to EMSL for analysis of asbestos content and nature.

A summary of the sample types, locations and analytical results is presented in Table C-4.1.1, below. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are attached at the end of this Appendix.

**Table C-4.1.1 Suspected ACM Sample Collection and Analysis Summary
Public Washrooms Building, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
PW-EPS-01A	Exterior penetration caulking – Beige	Exterior – Around electrical panels and penetrations	None Detected
PW-EPS-01B	Exterior penetration caulking – Beige	Exterior – Around electrical panels and penetrations	None Detected
PW-EPS-01C	Exterior penetration caulking – Beige	Exterior – Around electrical panels and penetrations	None Detected
PW-DM-01A	Duct mastic – Grey	On seams of HVAC ducting in the mechanical room	None Detected

**Table C-4.1.1 Suspected ACM Sample Collection and Analysis Summary
Public Washrooms Building, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
PW-DM-01B	Duct mastic – Grey	On seams of HVAC ducting in the mechanical room	None Detected
PW-DM-01C	Duct mastic – Grey	On seams of HVAC ducting in the mechanical room	None Detected
PW-DJC-01A	Drywall joint compound	Men’s washroom	None Detected
PW-DJC-01B	Drywall joint compound	Men’s washroom	None Detected
PW-DJC-01C	Drywall joint compound	Men’s washroom	None Detected
PW-CP-01	Cement Panel	Base of exterior walls	None Detected

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of suspected ACM sample analytical results, no ACMs were identified.

C-4.2 Lead

Lead is expected to be present in the following materials:

- Solder used on copper domestic pipes
- Caulking on bell fittings for cast iron drainage pipes
- Electrical equipment (i.e. batteries for emergency lighting/signage).

With respect to paint, 2 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table C-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

**Table C-4.2.1 Suspected LCP Sample Collection and Analysis Summary
Public Washrooms Building, Haines Junction, YT**

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
PW-P-01	Beige colour	Concrete floors	120	No
PW-P-02	White colour	Walls	<90	No

Based on our observations and on our interpretations of suspected LCP sample analytical results, no LCPs were identified.

C-4.3 Polychlorinated Biphenyls

It is estimated that there are approximately 11 ballasts within the fluorescent light fixtures observed throughout. Based on the reported construction date (1996) these ballasts are not suspected to be PCB-containing.

C-4.4 Mercury

Mercury vapour is expected to be present in fluorescent light bulbs/tubes throughout.

C-4.5 Mould

No suspect mould or moisture-impacted materials were observed during the assessment.

C-4.6 Ozone-Depleting Substances

No suspected ODS-containing equipment was observed during the assessment.

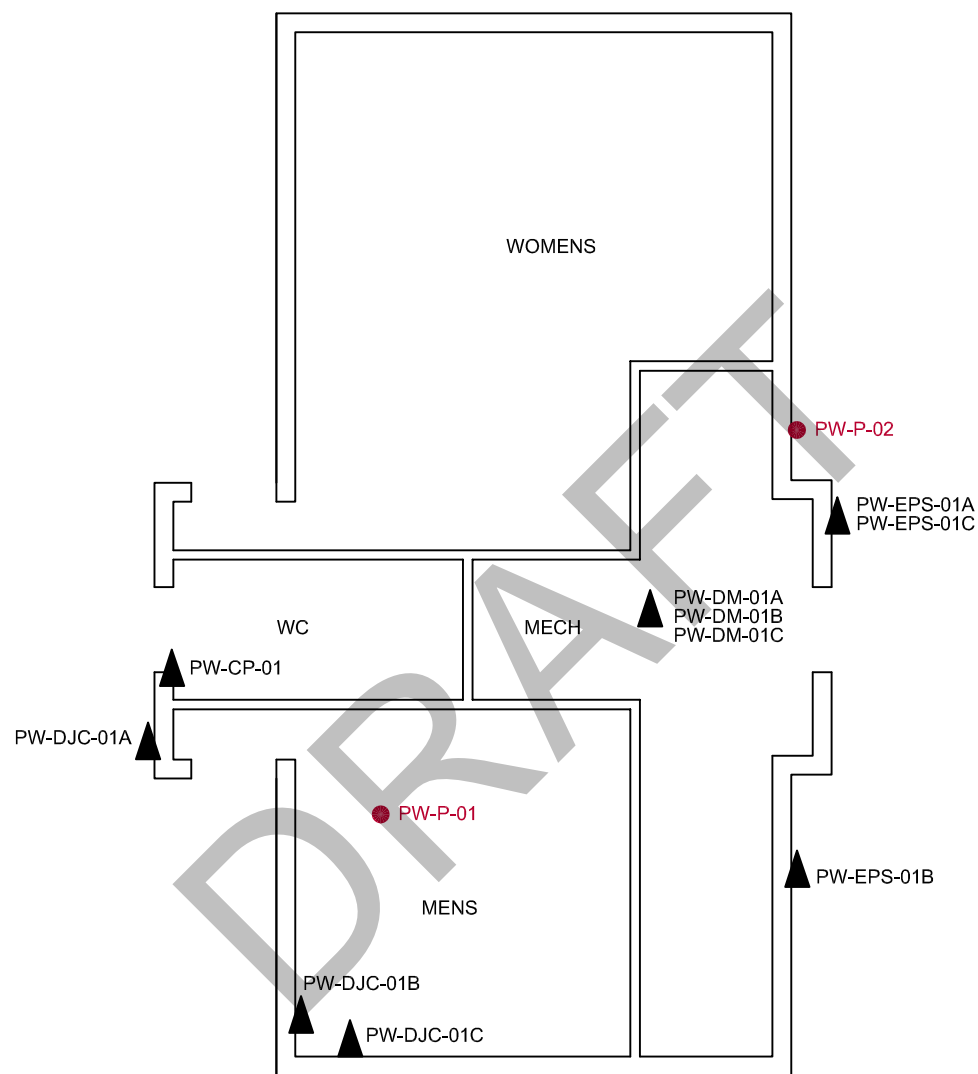
C-4.7 Silica

Silica may be present in concrete and cement observed in various locations throughout.

C-5.0 BUILDING-SPECIFIC RECOMMENDATIONS



In general, identified hazardous building materials should be handled in accordance with the recommendations for renovation and continued operation that are provided in Section 5 of the main body of this report.

DRAFT



PUBLIC WASHROOMS BUILDING

LEGEND

-  BULK SAMPLE
-  PAINT CHIP SAMPLE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

Client: PARKS CANADA

Project No.:	144901924
Scale:	NTS
Date:	14/11/18
Dwn. By:	CD <small>SL2014110105</small> PK/DM
App'd By:	TW

Dwg. No.:

C



DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
PW-EPS-01A 551407481-0089	EXTERIOR PENETRATION CAULKING-BEIGE - EXTERIOR-AROUND ELECTRICAL PANELS AND PENETRATIONS	Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
PW-EPS-01B 551407481-0090	EXTERIOR PENETRATION CAULKING-BEIGE - EXTERIOR-AROUND ELECTRICAL PANELS AND PENETRATIONS	Brown Non-Fibrous Homogeneous	100	None	No Asbestos Detected
PW-EPS-01C 551407481-0091	EXTERIOR PENETRATION CAULKING-BEIGE - EXTERIOR-AROUND ELECTRICAL PANELS AND PENETRATIONS	Brown/White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
PW-DM-01A 551407481-0092	DUCT MASTIC-GREY - ON SEAMS OF HVAC DUCTING IN THE MECHANICAL ROOM	Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected
PW-DM-01B 551407481-0093	DUCT MASTIC-GREY - ON SEAMS OF HVAC DUCTING IN THE MECHANICAL ROOM	Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected
PW-DM-01C 551407481-0094	DUCT MASTIC-GREY - ON SEAMS OF HVAC DUCTING IN THE MECHANICAL ROOM	Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (2)

Nicole Yeo (4)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:20:20

DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
PW-DJC-01A 551407481-0095	DRYWALL JOINT COMPOUND - MEN'S WASHROOM	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
PW-DJC-01B 551407481-0096	DRYWALL JOINT COMPOUND - MEN'S WASHROOM	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
PW-DJC-01C 551407481-0097	DRYWALL JOINT COMPOUND - MEN'S WASHROOM	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
PW-CP-01 551407481-0098	CEMENT PANEL - BASE OF EXTERIOR WALLS	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Matthew Davis (4)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/18/2014 10:20:20

DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: 144901924.801

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

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
PW-P-01	551407512-0008 Site: BEIGE COLOUR Desc: CONCRETE FLOORS	10/16/2014		120 ppm
PW-P-02	551407512-0009 Site: WHITE COLOUR Desc: WALLS	10/16/2014		<90 ppm

DRAFT

Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 10/16/2014 16:40:21

DRAFT

Appendix D
Findings and Recommendations
– Stores Maintenance Building

DRAFT

D-4.0 FINDINGS – STORES MAINTENANCE BUILDING

The Stores Maintenance Building was reportedly constructed in 1988.

Stantec understands that demolition of the Stores Maintenance Building has been proposed.

The results of the assessment for each of the considered hazardous materials within the Stores Maintenance Building are provided in the following sub-sections.

Floor plan drawings for the Stores Maintenance Building, which include locations of the samples collected during this assessment, and locations of identified hazardous building materials (where practical), are attached to this Appendix.

D-4.1 Asbestos

Stantec identified and sampled various suspected ACMs, including the following:

- Pipe fitting insulation
- Fire door insulation
- Window pane caulking
- HVAC duct mastic
- Pipe fitting sealant
- Window frame caulking
- Ceiling tile
- HVAC duct wrap
- Countertop mastic
- Door caulking
- Roof mastic
- Drywall joint compound
- Cove base mastic
- Sheet flooring.

64 samples of the above-noted suspected ACMs were collected and submitted to EMSL for analysis of asbestos content and nature.

A summary of the sample types, locations and analytical results is presented in Table D-4.1.1, below. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are attached at the end of this Appendix.

**Table D-4.1.1 Suspected ACM Sample Collection and Analysis Summary
Stores Maintenance Building, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
SM-FI-01A	Fitting insulation – Grey	At the top of the stairs in the unheated general stores	None Detected
SM-FI-01B	Fitting insulation – Grey	At the top of the stairs in the unheated general stores	None Detected
SM-FI-01C	Fitting insulation – Grey	At the top of the stairs in the unheated general stores	None Detected
SM-FDI-01A	Fire door insulation – Grey	Inside door between woodwork shop and paint room	None Detected
SM-FDI-01B	Fire door insulation – Grey	Inside door between woodwork shop and paint room	None Detected
SM-FDI-01C	Fire door insulation – Grey	Inside door between woodwork shop and paint room	None Detected
SM-WPC-01A	Window pane caulking – Black	Between window frame and glass pane at the rear of the building	1.3% Chrysotile
SM-WPC-01B	Window pane caulking – Black	Between window frame and glass pane at the rear of the building	Stop Positive
SM-WPC-01C	Window pane caulking – Black	Between window frame and glass pane at the rear of the building	Stop Positive
SM-WPC-02A	Window pane caulking – White	Between window frame and glass pane of windows in the door to the general stores	None Detected
SM-WPC-02B	Window pane caulking – White	Between window frame and glass pane of windows in the door to the general stores	None Detected
SM-WPC-02C	Window pane caulking – White	Between window frame and glass pane of windows in the door to the general stores	None Detected
SM-DM-01A	Duct mastic - Red	On duct seams at the top of the stairs in the unheated general stores	None Detected
SM-DM-01B	Duct mastic - Red	On duct seams at the top of the stairs in the unheated general stores	None Detected
SM-DM-01C	Duct mastic - Red	On duct seams at the top of the stairs in the unheated general stores	None Detected
SM-DM-02A	Duct mastic – Clear	On seams of dust exhaust system in the woodwork shop	None Detected
SM-DM-02B	Duct mastic – Clear	On seams of dust exhaust system in the woodwork shop	None Detected

**Table D-4.1.1 Suspected ACM Sample Collection and Analysis Summary
Stores Maintenance Building, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
SM-DM-02C	Duct mastic – Clear	On seams of dust exhaust system in the woodwork shop	None Detected
SM-PS-01A	Pipe sealant – Cream	Inside pipe fittings at the top of the stairs in the unheated general stores	None Detected
SM-PS-01B	Pipe sealant – Cream	Inside pipe fittings at the top of the stairs in the unheated general stores	None Detected
SM-PS-01C	Pipe sealant – Cream	Inside pipe fittings at the top of the stairs in the unheated general stores	None Detected
SM-PS-02A	Pipe sealant – Blue	Inside pipe fittings of the fire suppression system in the pump room	None Detected
SM-PS-02B	Pipe sealant – Blue	Inside pipe fittings of the fire suppression system in the pump room	None Detected
SM-PS-02C	Pipe sealant – Blue	Inside pipe fittings of the fire suppression system in the pump room	None Detected
SM-PS-03A	Pipe sealant – Cream	Inside fittings of decommissioned 2" black pipes next to water tank	0.36% Chrysotile
SM-PS-03B	Pipe sealant – Cream	Inside fittings of decommissioned 2" black pipes next to water tank	0.42% Chrysotile
SM-PS-03C	Pipe sealant – Cream	Inside fittings of decommissioned 2" black pipes next to water tank	0.32% Chrysotile
SM-WFC-01A	Window frame caulking – White	Between window frame and building at exterior of the front entrance	<0.25% Chrysotile
SM-WFC-01B	Window frame caulking – White	Between window frame and building at exterior of the front entrance	0.97% Chrysotile
SM-WFC-01C	Window frame caulking – White	Between window frame and building at exterior of the front entrance	0.62% Chrysotile
SM-CT-01A	White 2'x4' ceiling tile – Standard fissure and pinhole	Lunchroom	None Detected
SM-CT-01B	White 2'x4' ceiling tile – Standard fissure and pinhole	Lunchroom	None Detected

**Table D-4.1.1 Suspected ACM Sample Collection and Analysis Summary
Stores Maintenance Building, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
SM-CT-01C	White 2'x4' ceiling tile – Standard fissure and pinhole	Lunchroom	None Detected
SM-CT-02A	White 2'x4' ceiling tile – Horizontal fissure and pinhole	Lunchroom	None Detected
SM-CT-02B	White 2'x4' ceiling tile – Horizontal fissure and pinhole	Lunchroom	None Detected
SM-CT-02C	White 2'x4' ceiling tile – Horizontal fissure and pinhole	Lunchroom	None Detected
SM-CT-03A	White 2'x4' ceiling tile – Fissure	Corridor	None Detected
SM-CT-03B	White 2'x4' ceiling tile – Fissure	Corridor	None Detected
SM-CT-03C	White 2'x4' ceiling tile – Fissure	Corridor	None Detected
SM-DW-01A	Duct wrap	On duct insulation at the top of the stairs in the unheated stores	None Detected
SM-DW-01B	Duct wrap	On duct insulation at the top of the stairs in the unheated stores	None Detected
SM-DW-01C	Duct wrap	On duct insulation at the top of the stairs in the unheated stores	None Detected
SM-CTM-01A	Countertop mastic – Cream	Around counters in brochure and furniture storage	1.7% Chrysotile
SM-CTM-01B	Countertop mastic – Cream	Around counters in brochure and furniture storage	Stop Positive
SM-CTM-01C	Countertop mastic – Cream	Around counters in brochure and furniture storage	Stop Positive
SM-DC-01A	Door caulking – Grey	Around doors at loading bay	2.8% Chrysotile
SM-DC-01B	Door caulking – Grey	Around doors at loading bay	Stop Positive
SM-DC-01C	Door caulking – Grey	Around doors at loading bay	Stop Positive
SM-RRM-01A	Remnant roof mastic – Clear	Roof	None Detected
SM-RRM-01B	Remnant roof mastic – Clear	Roof	None Detected

**Table D-4.1.1 Suspected ACM Sample Collection and Analysis Summary
Stores Maintenance Building, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
SM-RRM-01C	Remnant roof mastic – Clear	Roof	None Detected
SM-DJC-01A	Drywall joint compound	Lunchroom	None Detected
SM-DJC-01B	Drywall joint compound	Corridor	None Detected
SM-DJC-01C	Drywall joint compound	Heated general stores	None Detected
SM-DJC-01D	Drywall joint compound	Woodwork shop	None Detected
SM-DJC-01E	Drywall joint compound	Men's washroom	None Detected
SM-DJC-01F	Drywall joint compound	Heating, plumbing, and electrical workshop	None Detected
SM-DJC-01G	Drywall joint compound	Heating, plumbing, and electrical workshop	None Detected
SM-CBM-01A	Cove base mastic – Tan	Corridor	None Detected
SM-CBM-01B	Cove base mastic – Tan	Brochure and furniture storage	None Detected
SM-CBM-01C	Cove base mastic – Tan	Heating, plumbing, and electrical workshop	None Detected
SM-SF-01	Vinyl sheet flooring – Blue with white streaks	Foyer	None Detected
SM-SF-02	Vinyl sheet flooring – Grey and white pebble pattern	Heating, plumbing, and electrical workshop storage room	None Detected
SM-SF-03	Vinyl sheet flooring – Beige speckles pattern	Fire resistant storage	None Detected

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of suspected ACM sample analytical results, the materials presented in Table D-4.1.2, below were identified as ACMs.

Table D-4.1.2 Summary of Identified ACMs
Stores Maintenance Building, Haines Junction, YT



Identified ACM Description and Condition Information		Photo
Black window pane caulking between window frames and glass panes throughout		No photo.
Friability	Non-friable	
Condition	Good	
Content	1.3% Chrysotile	
Cream pipe sealant inside fittings of 2" decommissioned black pipes next to water tank in the pump room		
Friability	Non-friable	
Condition	Good	
Content	0.32 – 0.42% Chrysotile	
White window frame caulking between window frames and siding throughout the exterior		
Friability	Non-friable	
Condition	Good	
Content	<0.25 – 0.97% Chrysotile	

Table D-4.1.2 Summary of Identified ACMs
Stores Maintenance Building, Haines Junction, YT

Identified ACM Description and Condition Information		Photo
Cream countertop mastic between counters and the wall in then brochure and furniture storage		
Friability	Non-friable	
Condition	Good	
Content	1.7% Chrysotile	
Grey caulking around loading bay doors both garage and exit doors		
Friability	Non-friable	
Condition	Good	
Content	2.8% Chrysotile	

D-4.2 Lead

Lead is expected to be present in the following materials:

- Solder used on copper domestic pipes
- Caulking on bell fittings for cast iron drainage pipes
- Electrical equipment (i.e. batteries for emergency lighting/signage).



With respect to paint, 10 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table D-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

**Table D-4.2.1 Suspected LCP Sample Collection and Analysis Summary
Stores Maintenance Building, Haines Junction, YT**

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
SM-P-01	Floors throughout	Grey	<90	No
SM-P-02	Structural steel throughout	Cream	320	No
SM-P-03	Stair railing in unheated general stores	Black	<220	No
SM-P-04	Doors throughout	Red	<160	No
SM-P-05	Interior trim	Grey	2,000	Yes
SM-P-06	Janitors room walls	Blue	<90	No
SM-P-07	Door of heating, plumbing, and electrical workshop office	Brown	380	No
SM-P-08	Structural steel throughout	Red	2,500	Yes
SM-P-09	Exterior siding	Grey	<350	No
SM-P-10	Interior walls	White	<90	No

Based on our observations and on our interpretations of suspected LCP sample analytical results, the materials presented in Table D-4.2.2, below were identified as LCPs.

Table D-4.2.2 Summary of Identified LCPs
Stores Maintenance Building, Haines Junction, YT

Identified LCP Description	Photo
<p>Grey paint on interior trim.</p> <p>This paint was observed to be in good condition (not bubbling, flaking or peeling).</p>	
<p>Red paint on structural steel.</p> <p>This paint was observed to be in good condition (not bubbling, flaking or peeling).</p>	

D-4.3 Polychlorinated Biphenyls

Based on the construction date of the building PCB-containing fluorescent light ballasts are not expected to be present.

D-4.4 Mercury


One (1) mercury-containing thermostat was observed. Several suspected mercury containing thermometers were also observed in the boiler room.

Mercury vapour is expected to be present in fluorescent light bulbs/tubes throughout.

D-4.5 Mould

Moisture damage was observed as summarized in Table D-4.5, below.

**Table D-4.5 Summary of Identified Mould and/or Moisture-Impacted Materials
Stores Maintenance Building, Haines Junction, YT**

Identified Mould and/or Moisture Impacted Materials Description	Photo
Moisture stained ceiling tiles were observed in various locations throughout.	

D-4.6 Ozone-Depleting Substances

No suspected ODS-containing equipment was observed during the assessment.

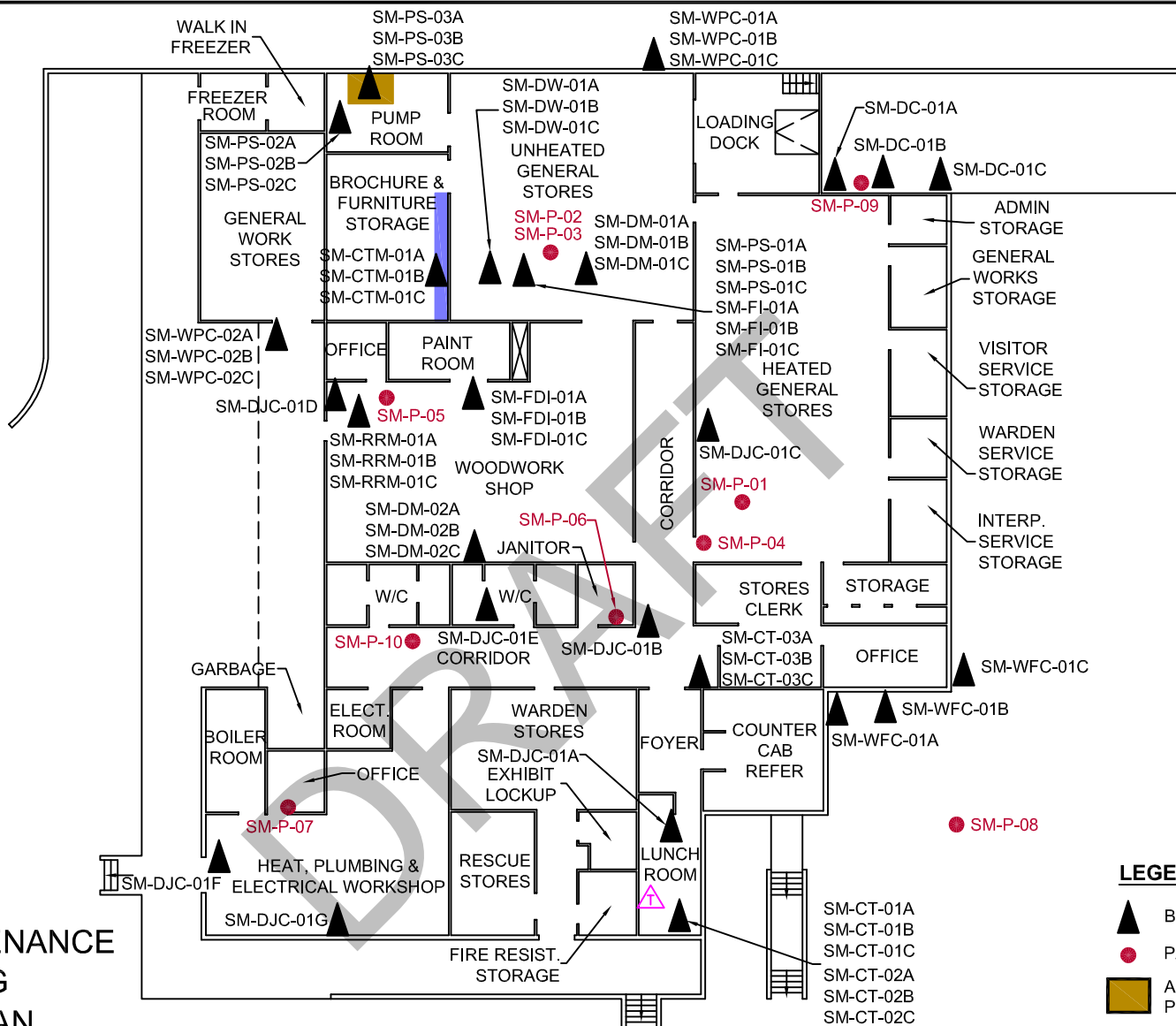
D-4.7 Silica

Silica may be present in concrete, cement, ceramic tiles, and acoustical ceiling tiles observed in various locations throughout.

D-5.0 BUILDING-SPECIFIC RECOMMENDATIONS

In general, identified hazardous building materials should be handled in accordance with the recommendations for demolition that are provided in Section 5 of the main body of this report.

STORES MAINTENANCE BUILDING FLOOR PLAN



LEGEND

- BULK SAMPLE
- PAINT CHIP SAMPLE
- ASBESTOS-CONTAINING PIPE SEALANT
- ASBESTOS-CONTAINING CREAM COUNTER TOP MASTIC
- MERCURY-CONTAINING THERMOSTAT

- NOTES:** 1. BLACK WINDOW PANE CAULKING BETWEEN WINDOW FRAMES AND GLASS PANES THROUGHOUT IS ACM.
2. WHITE WINDOW FRAME CAULKING BETWEEN WINDOW FRAMES AND SIDING THROUGHOUT THE EXTERIOR IS ACM.
3. GREY CULKING AROUND LOADING BAY DOORS IS ACM.
4. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

Client: PARKS CANADA

Project No.: 144901924
Scale: NTS
Date: 14/11/18
Dwn. By: CD PK/DM
App'd By: TW

Dwg. No.:

D



DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torentolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
SM-WPC-01A 551407481-0105	WINDOW PANE CAULKING- BLACK - BETWEEN WINDOW FRAME AND GLASS PANE AT THE REAR OF THE BUILDING	Black Non-Fibrous Homogeneous	98.7	None	1.3% Chrysotile
SM-WPC-01B 551407481-0106	WINDOW PANE CAULKING- BLACK - BETWEEN WINDOW FRAME AND GLASS PANE AT THE REAR OF THE BUILDING				
Positive Stop (Not Analyzed)					
SM-WPC-01C 551407481-0107	WINDOW PANE CAULKING- BLACK - BETWEEN WINDOW FRAME AND GLASS PANE AT THE REAR OF THE BUILDING				
Positive Stop (Not Analyzed)					
SM-WPC-02A 551407481-0108	WINDOW PANE CAULKING- WHITE - BETWEEN WINDOW FRAME AND GLASS PANE OF WINDOWS IN THE DOOR TO THE GENERAL STORES	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
SM-WPC-02B 551407481-0109	WINDOW PANE CAULKING- WHITE - BETWEEN WINDOW FRAME AND GLASS PANE OF WINDOWS IN THE DOOR TO THE GENERAL STORES	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (9)

Nicole Yeo (24)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:32:43

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
SM-WPC-02C 551407481-0110	WINDOW PANE CAULKING-WHITE - BETWEEN WINDOW FRAME AND GLASS PANE OF WINDOWS IN THE DOOR TO THE GENERAL STORES	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
SM-DM-01A 551407481-0111	DUCT MASTIC-RED - ON DUCT SEAMS AT THE TOP OF THE STAIRS IN THE UNHEATED GENERAL STORES	Brown/Blue Non-Fibrous Homogeneous	96.9	3.1 Wollastonite	No Asbestos Detected
SM-DM-01B 551407481-0112	DUCT MASTIC-RED - ON DUCT SEAMS AT THE TOP OF THE STAIRS IN THE UNHEATED GENERAL STORES	Brown Non-Fibrous Homogeneous	98.7	1.3 Wollastonite	No Asbestos Detected
SM-DM-01C 551407481-0113	DUCT MASTIC-RED - ON DUCT SEAMS AT THE TOP OF THE STAIRS IN THE UNHEATED GENERAL STORES	Brown Non-Fibrous Homogeneous	100	None	No Asbestos Detected
SM-DM-02A 551407481-0114	DUCT MASTIC-CLEAR - ON SEAMS OF DUST EXHAUST SYSTEM IN THE WOODWORK SHOP	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
SM-DM-02B 551407481-0115	DUCT MASTIC-CLEAR - ON SEAMS OF DUST EXHAUST SYSTEM IN THE WOODWORK SHOP	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (9)

Nicole Yeo (24)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:32:43

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
SM-DM-02C 551407481-0116	DUCT MASTIC-CLEAR - ON SEAMS OF DUST EXHAUST SYSTEM IN THE WOODWORK SHOP	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
SM-PS-01A 551407481-0117	PIPE SEALANT-CREAM - INSIDE PIPE FITTINGS AT THE TOP OF THE STAIRS IN THE UNHEATED GENERAL STORES	Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
SM-PS-01B 551407481-0118	PIPE SEALANT-CREAM - INSIDE PIPE FITTINGS AT THE TOP OF THE STAIRS IN THE UNHEATED GENERAL STORES	Blue/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
SM-PS-01C 551407481-0119	PIPE SEALANT-CREAM - INSIDE PIPE FITTINGS AT THE TOP OF THE STAIRS IN THE UNHEATED GENERAL STORES	Blue/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
SM-PS 02A 551407481-0120	PIPE SEALANT-BLUE - INSIDE PIPE FITTINGS OF THE FIRE SUPPRESSION SYSTEM IN THE PUMP ROOM	Blue Non-Fibrous Homogeneous	98.0	2.0 Fibrous (other)	No Asbestos Detected
SM-PS 02B 551407481-0121	PIPE SEALANT-BLUE - INSIDE PIPE FITTINGS OF THE FIRE SUPPRESSION SYSTEM IN THE PUMP ROOM	Blue Non-Fibrous Homogeneous	98.6	1.4 Fibrous (other)	No Asbestos Detected

Analyst(s)

Jon Delos Santos (9)

Nicole Yeo (24)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:32:43

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
SM-PS 02C 551407481-0122	PIPE SEALANT-BLUE - INSIDE PIPE FITTINGS OF THE FIRE SUPPRESSION SYSTEM IN THE PUMP ROOM	Blue Non-Fibrous Homogeneous	100	None	No Asbestos Detected
SM-PS-03A 551407481-0123	PIPE SEALANT-CREAM - INSIDE FITTINGS OF DECOMMISSIONED 2" BLACK PIPES NEXT TO WATER TANK	White Non-Fibrous Homogeneous	99.6	None	0.36% Chrysotile
SM-PS-03B 551407481-0124	PIPE SEALANT-CREAM - INSIDE FITTINGS OF DECOMMISSIONED 2" BLACK PIPES NEXT TO WATER TANK	White Non-Fibrous Homogeneous	99.6	None	0.42% Chrysotile
SM-PS-03C 551407481-0125	PIPE SEALANT-CREAM - INSIDE FITTINGS OF DECOMMISSIONED 2" BLACK PIPES NEXT TO WATER TANK	White Non-Fibrous Homogeneous	99.7	None	0.32% Chrysotile
SM-WFC-01A 551407481-0126	WINDOW FRMAE CAULKING-WHITE - BETWEEN WINDOW FRAME AND BUILDING AT EXTERIOR OF THE FRONT ENTRANCE	Gray Non-Fibrous Homogeneous	100	None	<0.25% Chrysotile

Analyst(s)

Jon Delos Santos (9)

Nicole Yeo (24)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:32:43

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
SM-WFC-01B 551407481-0127	WINDOW FRMAE CAULKING-WHITE - BETWEEN WINDOW FRAME AND BUILDING AT EXTERIOR OF THE FRONT ENTRANCE	Gray Non-Fibrous Homogeneous	99.0	None	0.97% Chrysotile
SM-WFC-01C 551407481-0128	WINDOW FRMAE CAULKING-WHITE - BETWEEN WINDOW FRAME AND BUILDING AT EXTERIOR OF THE FRONT ENTRANCE	Gray Non-Fibrous Homogeneous	99.4	None	0.62% Chrysotile
SM-CTM-01A 551407481-0141	COUNTERTOP MASTIC- CREAM - AROUND COUNTERS IN BROCHURE AND FURNITURE STORAGE	Yellow Non-Fibrous Homogeneous	98.3	None	1.7% Chrysotile
SM-CTM-01B 551407481-0142	COUNTERTOP MASTIC- CREAM - AROUND COUNTERS IN BROCHURE AND FURNITURE STORAGE				
Positive Stop (Not Analyzed)					
SM-CTM-01C 551407481-0143	COUNTERTOP MASTIC- CREAM - AROUND COUNTERS IN BROCHURE AND FURNITURE STORAGE				
Positive Stop (Not Analyzed)					
SM-DC-01A 551407481-0144	DOOR CAULKING-GREY - AROUND DOORS AA LOADING BAY	Gray Non-Fibrous Homogeneous	97.2	None	2.8% Chrysotile

Analyst(s)

Jon Delos Santos (9)

Nicole Yeo (24)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:32:43

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
SM-DC-01B 551407481-0145	DOOR CAULKING-GREY - AROUND DOORS AA LOADING BAY				
Positive Stop (Not Analyzed)					
SM-DC-01C 551407481-0146	DOOR CAULKING-GREY - AROUND DOORS AA LOADING BAY				
Positive Stop (Not Analyzed)					
SM-RRM-01A 551407481-0147	REMNANT ROOF MASTIC- CLEAR - ROOF	Blue/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
SM-RRM-01B 551407481-0148	REMNANT ROOF MASTIC- CLEAR - ROOF	Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
SM-RRM-01C 551407481-0149	REMNANT ROOF MASTIC- CLEAR - ROOF	Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
SM-CBM-01A 551407481-0157	COVE BASE MASTIC-TAN - CORRIDOR	Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
SM-CBM-01B 551407481-0158	COVE BASE MASTIC-TAN - BROCHURE AND FURNITURE STORAGE	Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
SM-CBM-01C 551407481-0159	COVE BASE MASTIC-TAN - HEATING, PLUMBING AND ELECTRICAL WORKSHOP	White/Beige Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (9)

Nicole Yeo (24)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:32:43

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM
via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
SM-SF-01 551407481-0160	VINYL SHEET FLOORING-BLUE WITH WHITE STREAKS - FOYER	Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected
SM-SF-02 551407481-0161	VINYL SHEET FLOORING-GREY AND WHITE PEBBLE PATTERN - HEATING, PLUMBING AND ELECTRICAL WORKSHOP STORAGE ROOM	Gray/White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
SM-SF-03 551407481-0162	VINYL SHEET FLOORING-BEIGE SPECKELS PATTERN - FIRE RESISTANT STORAGE	Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (9)

Nicole Yeo (24)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/18/2014 10:32:43

DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
SM-FI-01A 551407481-0099	FITTING INSULATION-GREY - AT THE TOP OF THE STAIRS IN THE UNHEATED GENERAL STORES	Gray Fibrous Homogeneous	10% Min. Wool	90% Non-fibrous (other)	None Detected
SM-FI-01B 551407481-0100	FITTING INSULATION-GREY - AT THE TOP OF THE STAIRS IN THE UNHEATED GENERAL STORES	Gray Fibrous Homogeneous	10% Min. Wool	90% Non-fibrous (other)	None Detected
SM-FI-01C 551407481-0101	FITTING INSULATION-GREY - AT THE TOP OF THE STAIRS IN THE UNHEATED GENERAL STORES	Gray Fibrous Homogeneous	10% Min. Wool	90% Non-fibrous (other)	None Detected
SM-FDI-01A 551407481-0102	FIRE DOOR INSULATION-GREY - INSIDE DOOR BETWEEN WOODWORK SHOP AND PAINT ROOM	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Jon Delos Santos (6)

Matthew Davis (19)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/18/2014 10:32:43

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
 CustomerID: 55JACQ30N
 CustomerPO: 144901924.801
 ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
 Fax: (604) 436-3752
 Received: 10/10/14 11:01 AM
 Analysis Date: 10/17/2014
 Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
SM-FDI-01B 551407481-0103	FIRE DOOR INSULATION-GREY - INSIDE DOOR BETWEEN WOODWORK SHOP AND PAINT ROOM	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
SM-FDI-01C 551407481-0104	FIRE DOOR INSULATION-GREY - INSIDE DOOR BETWEEN WOODWORK SHOP AND PAINT ROOM	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
SM-CT-01A 551407481-0129	WHITE 2'X4' CEILING TILE-STANDARD FISSURES AND - PINHOLE/ LUNCHROOM	Gray/White Fibrous Homogeneous	35% Cellulose 45% Min. Wool	20% Non-fibrous (other)	None Detected
SM-CT-01B 551407481-0130	WHITE 2'X4' CEILING TILE-STANDARD FISSURES AND - PINHOLE/ LUNCHROOM	Gray/White Fibrous Homogeneous	35% Cellulose 45% Min. Wool	20% Non-fibrous (other)	None Detected

Analyst(s)

Jon Delos Santos (6)

Matthew Davis (19)

Kevin Pang
 or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/18/2014 10:32:43

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
 CustomerID: 55JACQ30N
 CustomerPO: 144901924.801
 ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
 Fax: (604) 436-3752
 Received: 10/10/14 11:01 AM
 Analysis Date: 10/17/2014
 Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	<u>Non-Asbestos</u>		<u>Asbestos</u>
			% Fibrous	% Non-Fibrous	% Type
SM-CT-01C 551407481-0131	WHITE 2'X4' CEILING TILE-STANDARD FISSURES AND - PINHOLE/ LUNCHROOM	Gray/White Fibrous Homogeneous	35% Cellulose 45% Min. Wool	20% Non-fibrous (other)	None Detected
SM-CT-02A 551407481-0132	WHITE 2'X4' CEILING TILE-HORIZONTAL FISSURE - AND PINHOLE/ LUNCHROOM	Gray/White Fibrous Homogeneous	35% Cellulose 45% Min. Wool	20% Non-fibrous (other)	None Detected
SM-CT-02B 551407481-0133	WHITE 2'X4' CEILING TILE-HORIZONTAL FISSURE - AND PINHOLE/ LUNCHROOM	Gray/White Fibrous Homogeneous	35% Cellulose 45% Min. Wool	20% Non-fibrous (other)	None Detected
SM-CT-02C 551407481-0134	WHITE 2'X4' CEILING TILE-HORIZONTAL FISSURE - AND PINHOLE/ LUNCHROOM	Gray/White Fibrous Homogeneous	35% Cellulose 45% Min. Wool	20% Non-fibrous (other)	None Detected
SM-CT-03A 551407481-0135	WHITE 2'X4' CEILING TILE-FISSURE - CORRIDOR	Gray/White Fibrous Homogeneous	35% Cellulose 45% Min. Wool	20% Non-fibrous (other)	None Detected

Analyst(s)

Jon Delos Santos (6)

Matthew Davis (19)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/18/2014 10:32:43

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
SM-CT-03B 551407481-0136	WHITE 2'X4' CEILING TILE - FISURE - CORRIDOR	Gray/White Fibrous Homogeneous	35% Cellulose 45% Min. Wool	20% Non-fibrous (other)	None Detected
SM-CT-03C 551407481-0137	WHITE 2'X4' CEILING TILE - FISURE - CORRIDOR	Gray/White Fibrous Homogeneous	35% Cellulose 45% Min. Wool	20% Non-fibrous (other)	None Detected
SM-DW-01A 551407481-0138	DUCT WRAP - ON DUCT INSULATIN AT THE TOP OF THE STAIRS IN THE UNHEATED STORES	Tan Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
SM-DW-01B 551407481-0139	DUCT WRAP - ON DUCT INSULATIN AT THE TOP OF THE STAIRS IN THE UNHEATED STORES	Tan Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
SM-DW-01C 551407481-0140	DUCT WRAP - ON DUCT INSULATIN AT THE TOP OF THE STAIRS IN THE UNHEATED STORES	Brown Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected

Analyst(s)

Jon Delos Santos (6)

Matthew Davis (19)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/18/2014 10:32:43

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
SM-DJC-01A 551407481-0150	DRYWALL JOINT COMPOUND - LUNCHROOM	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
SM-DJC-01B 551407481-0151	DRYWALL JOINT COMPOUND - CORRIDOR	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
SM-DJC-01C 551407481-0152	DRYWALL JOINT COMPOUND - HEATED GENERAL STORES	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
SM-DJC-01D 551407481-0153	DRYWALL JOINT COMPOUND - WOODWORK SHOP	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
SM-DJC-01E 551407481-0154	DRYWALL JOINT COMPOUND - MEN'S WASHROOM	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
SM-DJC-01F 551407481-0155	DRYWALL JOINT COMPOUND - HEATING, PLUMBING, AND ELECTRICAL WORKSHOP	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Jon Delos Santos (6)

Matthew Davis (19)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/18/2014 10:32:43

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
SM-DJC-01G 551407481-0156	DRYWALL JOINT COMPOUND - HEATING, PLUMBING, AND ELECTRICAL WORKSHOP	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Jon Delos Santos (6)

Matthew Davis (19)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/18/2014 10:32:43

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: 144901924.801

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

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
SM-P-01 Site: GREY COLOUR Desc: FLOORS THROUGHOUT	551407512-0010	10/16/2014		<90 ppm
SM-P-02 Site: CREAM COLOUR Desc: STRUCTURAL STEEL THROUGHOUT	551407512-0011	10/16/2014		320 ppm
SM-P-03 Site: BLACK COLOUR Desc: STAIR RAILING IN UNHEATED GENERAL STORES	551407512-0012	10/16/2014		<220 ppm
SM-P-04 Site: RED COLOUR Desc: DOORS THROUGHOUT	551407512-0013	10/16/2014		<160 ppm
SM-P-05 Site: GREY COLOUR Desc: INTERIOR TRIM	551407512-0014	10/16/2014		2000 ppm
SM-P-06 Site: BLUE COLOUR Desc: JANITORS ROOM WALLS	551407512-0015	10/16/2014		<90 ppm
SM-P-07 Site: BROWN COLOUR Desc: DOOR OF HEATING, PLUMBING, AND ELECTRICAL WORKSHOP OFFICE	551407512-0016	10/16/2014		380 ppm
SM-P-08 Site: RED COLOUR Desc: STRUCTURAL STEEL THROUGHOUT	551407512-0017	10/16/2014		2500 ppm
SM-P-09 Site: GREY COLOUR Desc: EXTERIOR SIDING	551407512-0018	10/16/2014		<350 ppm
SM-P-10 Site: WHITE COLOUR Desc: INTERIOR WALLS	551407512-0019	10/16/2014		<90 ppm

Insufficient sample to reach reporting limit for sample#551407512-0012/-0013/-0018.


Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 10/16/2014 16:40:31

DRAFT

Appendix E
Findings and Recommendations
– Wardens Office Building

DRAFT

E-4.0 FINDINGS – WARDEN'S OFFICE BUILDING

The Warden's Office Building was reportedly constructed in 1956.

Stantec understands that demolition of the Warden's Office Building has been proposed.

The results of the assessment for each of the considered hazardous materials within the Warden's Office Building are provided in the following sub-sections.

Floor plan drawings for the Warden's Office Building, which include locations of the samples collected during this assessment, and locations of identified hazardous building materials (where practical), are attached to this Appendix.

E-4.1 Asbestos

Stantec identified and sampled various suspected ACMs, including the following:

- Wall panel
- Pipe fitting insulation
- Straight pipe insulation
- Roof flashing mastic
- Electrical penetration putty
- Vinyl floor tile
- Building paper
- Window frame and pane caulking
- Chimney flashing sealant
- Ceiling tile
- Drywall joint compound
- Roofing shingle
- Brick mortar
- Donnacona board
- Sheet flooring
- Carpet mastic (remnant).

49 samples of the above-noted suspected ACMs were collected and submitted to EMSL for analysis of asbestos content and nature.

A summary of the sample types, locations and analytical results is presented in Table E-4.1.1, below. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are attached at the end of this Appendix.

It should be noted that several bulk samples of vinyl floor tile were further separated into layers during laboratory analysis.

**Table E-4.1.1 Suspected ACM Sample Collection and Analysis Summary
Warden’s Office Building, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
WO-WP-01	Wall panel	Boiler room	8% Chrysotile
WO-PI-01A	Pipe fitting insulation - Grey	Basement room 8	45% Chrysotile
WO-PI-01B	Pipe fitting insulation - Grey	Boiler room	Stop Positive
WO-PI-01C	Pipe fitting insulation - Grey	Basement room 10	Stop Positive
WO-API-01A	“Air-O-Cel” pipe insulation	Basement room 12	20% Chrysotile
WO-API-01B	“Air-O-Cel” pipe insulation	Basement corridor	Stop Positive
WO-API-01C	“Air-O-Cel” pipe insulation	Basement room 8	Stop Positive
WO-RFM-01A	Roof flashing mastic – Grey/black	Seams of stairwell roof	6.3% Chrysotile
WO-RFM-01B	Roof flashing mastic – Grey/black	Seams of stairwell roof	Stop Positive
WO-RFM-01C	Roof flashing mastic – Grey/black	Seams of stairwell roof	Stop Positive
WO-EPP-01A	Electrical penetration putty – Beige	Front entrance exterior around electrical penetrations	None Detected
WO-EPP-01B	Electrical penetration putty – Beige	Front entrance exterior around electrical penetrations	None Detected
WO-EPP-01C	Electrical penetration putty – Beige	Front entrance exterior around electrical penetrations	None Detected
WO-FT-01	9”x9” vinyl floor tile – Light green with white streaks	Basement room 12	None Detected
WO-FT-01-Mastic	Floor tile mastic – Black	Basement room 12	<0.25% Chrysotile
WO-FT-02	9”x9” vinyl floor tile – Grey with black streaks	Basement room 12	8% Chrysotile
WO-FT-02-Mastic	Floor tile mastic – Black	Basement room 12	0.52% Chrysotile
WO-FT-03	9”x9” vinyl floor tile – Beige with black streaks	Basement room 12	4.7% Chrysotile
WO-FT-03-Mastic	Floor tile mastic – Black	Basement room 12	0.54% Chrysotile
WO-FT-04	9”x9” vinyl floor tile – Dark green with white streaks	Basement room 12	3.5% Chrysotile

**Table E-4.1.1 Suspected ACM Sample Collection and Analysis Summary
Warden’s Office Building, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
WO-FT-04-Mastic	Floor tile mastic – Black	Basement room 12	1.7% Chrysotile
WO-BP-01A	Building paper – Black	Roof (concealed under wood shingles)	None Detected
WO-BP-01B	Building paper – Black	Roof (concealed under wood shingles)	None Detected
WO-BP-01C	Building paper – Black	Roof (concealed under wood shingles)	None Detected
WO-WFC-01A	Window frame caulking – Grey	Between window frame and the building on the front exterior	2.5% Chrysotile
WO-WFC-01B	Window frame caulking – Grey	Between window frame and the building on the front exterior	Stop Positive
WO-WFC-01C	Window frame caulking – Grey	Between window frame and the building on the front exterior	Stop Positive
WO-CFS-01A	Chimney flashing sealant – Black (painted brown)	Around seams of chimney flashing on the roof	2.8% Chrysotile
WO-CFS-01B	Chimney flashing sealant – Black (painted brown)	Around seams of chimney flashing on the roof	Stop Positive
WO-CFS-01C	Chimney flashing sealant – Black (painted brown)	Around seams of chimney flashing on the roof	Stop Positive
WO-WPC-01A	Window pane caulking – Black	Between window frame and glass pane interior of NE window	1.5% Chrysotile
WO-WPC-01B	Window pane caulking – Black	Between window frame and glass pane interior of W window	Stop Positive
WO-WPC-01C	Window pane caulking – Black	Between window frame and glass pane interior of NW window	Stop Positive
WO-CT-01A	Ceiling tile – White 1’x1’	Main floor room 1	None Detected
WO-CT-01B	Ceiling tile – White 1’x1’	Main floor room 1	None Detected
WO-CT-01C	Ceiling tile – White 1’x1’	Main floor room 1	None Detected
WO-DJC-01A	Drywall joint compound	Top of the basement stairwell	None Detected
WO-DJC-01B	Drywall joint compound	Main floor corridor	3% Chrysotile
WO-DJC-01C	Drywall joint compound	Main floor room 1	None Detected
WO-DJC-01D	Drywall joint compound	Bottom of basement stairwell	None Detected
WO-DJC-01E	Drywall joint compound	Basement room 11 ceiling	None Detected
WO-RS-01A	Roofing shingle – Tar and gravel	Roof (concealed under wood shingles and building paper)	None Detected

**Table E-4.1.1 Suspected ACM Sample Collection and Analysis Summary
Warden’s Office Building, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
WO-RS-01B	Roofing shingle – Tar and gravel	Roof (concealed under wood shingles and building paper)	None Detected
WO-RS-01C	Roofing shingle – Tar and gravel	Roof (concealed under wood shingles and building paper)	None Detected
WO-BM-01A	Brick mortar	Exterior of the chimney	None Detected
WO-BM-01B	Brick mortar	Exterior of the chimney	None Detected
WO-BM-01C	Brick mortar	Exterior of the chimney	None Detected
WO-DCB-01A	“Donnacona board”	West wall of basement room 9	None Detected
WO-DCB-01B	“Donnacona board”	West wall of basement room 9	None Detected
WO-DCB-01C	“Donnacona board”	West wall of basement room 9	None Detected
WO-SF-01	Vinyl sheet flooring – Grey and cream gravel pattern	Main floor bathroom 1	None Detected
WO-CM-01A	Carpet mastic (remnant) – Tan	Basement corridor	None Detected
WO-CM-01B	Carpet mastic (remnant) – Tan	Basement corridor	None Detected
WO-CM-01C	Carpet mastic (remnant) – Tan	Basement corridor	None Detected

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of suspected ACM sample analytical results, the materials presented in Table E-4.1.2, below were identified as ACMs.

Table E-4.1.2 Summary of Identified ACMs
Warden’s Office Building, Haines Junction, YT






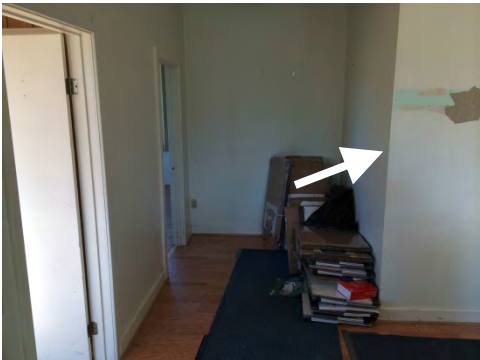
Identified ACM Description and Condition Information		Photo
Cement panel around the top of the walls in the boiler room.		
Friability	Non-friable	
Condition	Good	
Content	8% Chrysotile	
Pipe fitting insulation throughout (cementitious insulation applied to elbows, t's, and valves)		
Friability	Friable	
Condition	Good	
Content	45% Chrysotile	
Pipe straight insulation throughout ("Air-O-Cel" corrugated paper insulation on straight sections of pipe)		
Friability	Friable	
Condition	Good	
Content	20% Chrysotile	

Table E-4.1.2 Summary of Identified ACMs
Warden’s Office Building, Haines Junction, YT

Identified ACM Description and Condition Information		Photo
Grey/black roof flashing mastic on the seams of the aluminum roof of the basement exit stairwell		
Friability	Non-friable	
Condition	Good	
Content	6.3% Chrysotile	
9"x9" vinyl floor tile in basement room 12 (various colours, only the light green tiles are non-ACM) and the associated mastic (including that for the non-ACM light green tiles)		
Friability	Non-friable	
Condition	Good	
Content	Floor tile – 3.5 – 8% Chrysotile Mastic - <0.25 – 1.7% Chrysotile	
Grey window frame caulking (between window frame and the building) on the exterior of windows throughout		
Friability	Non-friable	
Condition	Good	
Content	2.5% Chrysotile	

Table E-4.1.2 Summary of Identified ACMs
Warden’s Office Building, Haines Junction, YT

Identified ACM Description and Condition Information		Photo
Black (painted brown) flashing sealant between the chimney and the roof		
Friability	Non-friable	
Condition	Good	
Content	2.8% Chrysotile	
Black window pane caulking (between window frame and glass pane) on windows throughout		
Friability	Non-friable	
Condition	Good	
Content	1.5% Chrysotile	
Drywall joint compound applied to walls throughout		
Friability	Non-friable in-situ but may become friable when it is disturbed	
Condition	Good	
Content	3% Chrysotile	

E-4.1.1 Drywall Joint Compound

Chrysotile asbestos was detected in 1 of 5 samples of drywall joint compound, which were collected from various application types (interior partition, perimeter, ceilings, etc.) within the building. As visual distinction between asbestos-containing drywall joint compound and non-asbestos-containing drywall joint compound is not practical (it is likely that over the years there were several renovations where drywall joint compound may have been layered; finished drywall walls and ceilings are covered with multiple layers of paint, and finishing is conducted to blend different types of wall materials such that the surface is continuous) and as the asbestos content of this material may be inconsistent (the application of drywall joint compound was often conducted by hand-mixing the components), the extent of asbestos-containing drywall joint compound is difficult to determine. As such, drywall joint compound throughout the building should be considered asbestos-containing.

E-4.2 Lead

Lead is expected to be present in the following materials:

- Solder used on copper domestic pipes
- Caulking on bell fittings for cast iron drainage pipes
- Electrical equipment (i.e. batteries for emergency lighting/signage).

With respect to paint, 11 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table E-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

**Table E-4.2.1 Suspected LCP Sample Collection and Analysis Summary
Warden’s Office Building, Haines Junction, YT**

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
WO-P-01	Basement corridor floor	Red/grey	1,400	Yes
WO-P-02	Basement stairwell floor	Yellow	2,000	Yes
WO-P-03	Basement trim	Yellow	3,400	Yes
WO-P-04	Basement floors	Red	3,500	Yes
WO-P-05	Basement room 8 walls	Cream	<90	No
WO-P-06	Basement floors	Grey	<90	No
WO-P-07	Main floor walls	Cream/green	920	Yes
WO-P-08	Main floor ceilings	White	370	No
WO-P-09	Exterior concrete at front entrance	Grey	2,200	Yes
WO-P-10	Exterior wood at front entrance	Orange	26,000	Yes
WO-P-11	Exterior trim	White	20,000	Yes

Based on our observations and on our interpretations of suspected LCP sample analytical results, the materials presented in Table E-4.2.2, below were identified as LCPs.

Table E-4.2.2 Summary of Identified LCPs
Warden’s Office Building, Haines Junction, YT




Identified LCP Description	Photo
Red/grey paint on the basement corridor floor. This paint was observed to be in fair condition (minimal bubbling, flaking or peeling).	
Yellow paint on the basement stairwell. This paint was observed to be in good condition (not bubbling, flaking or peeling).	
Yellow paint on trim throughout the basement. This paint was observed to be in good condition (not bubbling, flaking or peeling).	

Table E-4.2.2 Summary of Identified LCPs
Warden’s Office Building, Haines Junction, YT

Identified LCP Description	Photo
Red paint on the basement floors. This paint was observed to be in good condition (not bubbling, flaking or peeling).	
Grey paint on the exterior concrete at the front entrance. This paint was observed to be in fair condition (minimal bubbling, flaking or peeling).	
Orange paint on exterior wood at the front entrance. This paint was observed to be in fair condition (minimal bubbling, flaking or peeling).	

Table E-4.2.2 Summary of Identified LCPs
Warden’s Office Building, Haines Junction, YT

Identified LCP Description	Photo
<p>White paint on exterior trim.</p> <p>This paint was observed to be in good condition (not bubbling, flaking or peeling).</p>	

E-4.3 Polychlorinated Biphenyls

It is estimated that there are approximately 50 ballasts within the fluorescent light fixtures observed throughout. Based on the age of the building, fluorescent light ballasts may contain PCBs.

E-4.4 Mercury

Mercury vapour is expected to be present in fluorescent light bulbs/tubes throughout.

E-4.5 Mould

No suspect mould or moisture impacted materials were observed during the assessment.

E-4.6 Ozone-Depleting Substances

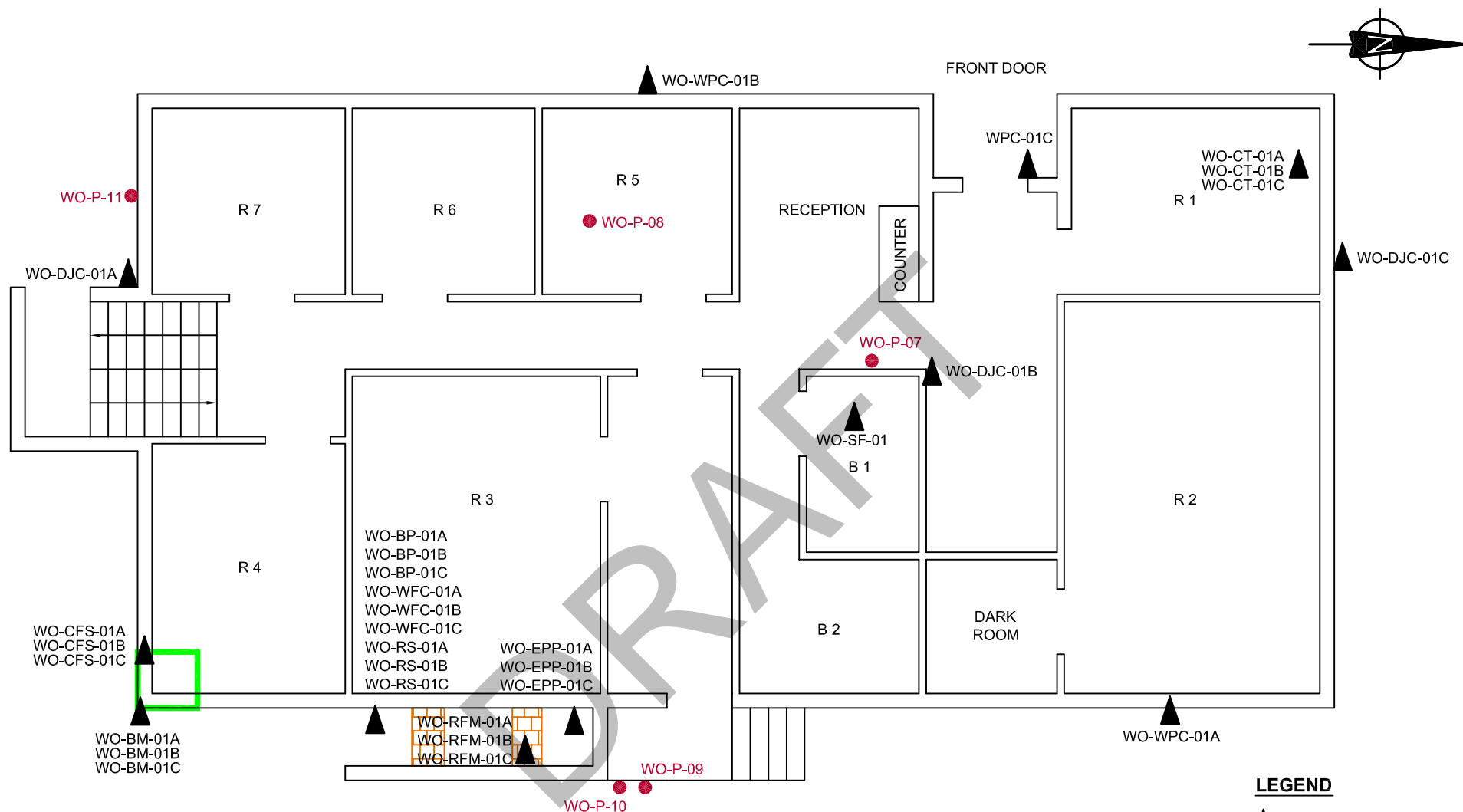
No suspected ODS-containing equipment was observed during the assessment.

E-4.7 Silica

Silica may be present in concrete, cement, mortar, ceramic tiles, and acoustic ceiling tiles observed in various locations throughout.

E-5.0 BUILDING-SPECIFIC RECOMMENDATIONS




In general, identified hazardous building materials should be handled in accordance with the recommendations for demolition that are provided in Section 5 of the main body of this report.



WARDENS OFFICE UPPER LEVEL

- NOTES:**
1. PIPE FITTING INSULATION ON ELBOWS +S AND VALVES THROUGHOUT IS ACM.
 2. CORRUGATED PAPER INSULATION ON STRAIGHT SECTIONS OF PIPE THROUGHOUT IS ACM.
 3. GREY WINDOW FRAME CAULKING BETWEEN FRAME AND THE BUILDING EXTERIOR THROUGHOUT IS ACM.
 4. BLACK WINDOW PANE CAULKING BETWEEN WINDOW FRAME AND GLASS PANE ON WINDOWS THROUGHOUT IS ACM.
 5. DRYWALL JOINT COMPOUND THROUGHOUT IS ACM.
 6. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

LEGEND

-  BULK SAMPLE
-  PAINT CHIP SAMPLE
-  ASBESTOS-CONTAINING ROOF FLASHING MASTIC
-  ASBESTOS-CONTAINING FLASHING SEALANT

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

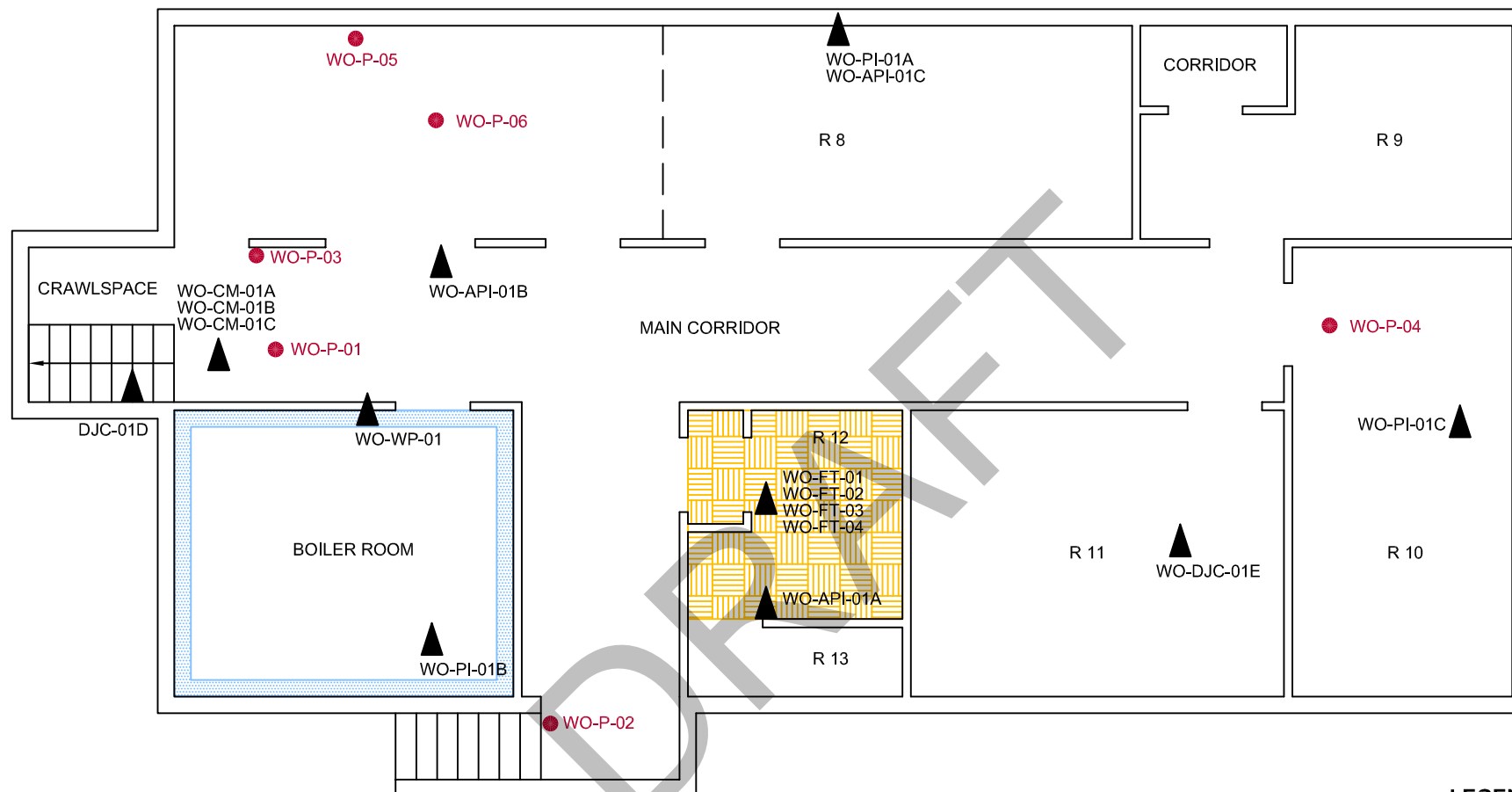
Client: PARKS CANADA

Project No.:	144901924
Scale:	NTS
Date:	14/11/18
Dwn. By:	CD <small>SL2014110107</small> <small>PK/DM</small>
App'd By:	TW

Dwg. No.:

E1





WARDENS OFFICE LOWER LEVEL

- NOTES:**
1. PIPE FITTING INSULATION ON ELBOWS †'S AND VALVES THROUGHOUT IS ACM.
 2. CORRUGATED PAPER INSULATION ON STRAIGHT SECTIONS OF PIPE THROUGHOUT IS ACM.
 3. GREY WINDOW FRAME CAULKING BETWEEN FRAME AND THE BUILDING EXTERIOR THROUGHOUT IS ACM.
 4. BLACK WINDOW PANE CAULKING BETWEEN WINDOW FRAME AND GLASS PANE ON WINDOWS THROUGHOUT IS ACM.
 5. DRYWALL JOINT COMPOUND THROUGHOUT IS ACM.
 6. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

LEGEND

- BULK SAMPLE
- PAINT CHIP SAMPLE
- ASBESTOS-CONTAINING VINYL FLOOR TILES
- ASBESTOS-CONTAINING CEMENT PANEL

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

Client: PARKS CANADA

Project No.: 144901924
Scale: NTS
Date: 14/11/18
Dwn. By: CD <small>SL2014110108 PK/DM</small>
App'd By: TW

Dwg. No.:

E2



**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
WO-RFM-01A 551407481-0170	ROOF FLASHING MASTIC-GREY/BLACK - SEAMS OF STAIRWELL ROOF	Black Non-Fibrous Homogeneous	93.7	None	6.3% Chrysotile
WO-RFM-01B 551407481-0171	ROOF FLASHING MASTIC-GREY/BLACK - SEAMS OF STAIRWELL ROOF				
Positive Stop (Not Analyzed)					
WO-RFM-01C 551407481-0172	ROOF FLASHING MASTIC-GREY/BLACK - SEAMS OF STAIRWELL ROOF				
Positive Stop (Not Analyzed)					
WO-EPP-01A 551407481-0173	ELECTRICAL PENETRATION PUTTY-BEIGE - FRONT ENTRANCE EXTERIOR AROUND ELECTRICAL PENETRATIONS	Gray/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
WO-EPP-01B 551407481-0174	ELECTRICAL PENETRATION PUTTY-BEIGE - FRONT ENTRANCE EXTERIOR AROUND ELECTRICAL PENETRATIONS	Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected
WO-EPP-01C 551407481-0175	ELECTRICAL PENETRATION PUTTY-BEIGE - FRONT ENTRANCE EXTERIOR AROUND ELECTRICAL PENETRATIONS	Gray/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (4)

Nicole Yeo (21)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
WO-FT-01 551407481-0176	9"X9" VINYL FLOOR TILE- LIGHT GREEN WITH WHITE STRE - BASEMENT ROOM 12	Green Non-Fibrous Homogeneous	100	None	No Asbestos Detected
WO-FT-01-Mastic 551407481-0176A	9"X9" VINYL FLOOR TILE- LIGHT GREEN WITH WHITE STRE - BASEMENT ROOM 12	Brown/Black Non-Fibrous Homogeneous	100	None	<0.25% Chrysotile
WO-FT-02 551407481-0177	9"X9" VINYL FLOOR TILE- GREY WITH BLACK STREAKS - BASEMENT ROOM 12	Gray Non-Fibrous Homogeneous	92.0	None	8.0% Chrysotile
WO-FT-02-Mastic 551407481-0177A	9"X9" VINYL FLOOR TILE- GREY WITH BLACK STREAKS - BASEMENT ROOM 12	Brown Non-Fibrous Homogeneous	99.5	None	0.52% Chrysotile
WO-FT-03 551407481-0178	9"X9" VINYL FLOOR TILE- BEIGE WITH BLACK STREAKS - BASEMENT ROOM 12	Beige Non-Fibrous Homogeneous	95.3	None	4.7% Chrysotile
WO-FT-03-Mastic 551407481-0178A	9"X9" VINYL FLOOR TILE- BEIGE WITH BLACK STREAKS - BASEMENT ROOM 12	Black Non-Fibrous Homogeneous	99.5	None	0.54% Chrysotile
WO-FT-04 551407481-0179	9"X9" VINYL FLOOR TILE- DARK GREEN W WHITE STREAKS - BASEMENT ROOM 12	Green Non-Fibrous Homogeneous	96.5	None	3.5% Chrysotile

Analyst(s)

Jon Delos Santos (4)

Nicole Yeo (21)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
WO-FT-04-Mastic 551407481-0179A	9"X9" VINYL FLOOR TILE- DARK GREEN W WHITE STREAKS - BASEMENT ROOM 12	Black Non-Fibrous Homogeneous	98.3	None	1.7% Chrysotile
WO-BP-01A 551407481-0180	BUILDING PAPER-BLACK - ROOF(CONCELAED UNDER WOOD SHINGLES)	Brown Non-Fibrous Homogeneous	100	None	No Asbestos Detected
WO-BP-01B 551407481-0181	BUILDING PAPER-BLACK - ROOF(CONCELAED UNDER WOOD SHINGLES)	Brown Non-Fibrous Homogeneous	100	None	No Asbestos Detected
WO-BP-01C 551407481-0182	BUILDING PAPER-BLACK - ROOF(CONCELAED UNDER WOOD SHINGLES)	Brown Non-Fibrous Homogeneous	100	None	No Asbestos Detected
WO-WFC-01A 551407481-0183	WINDOW FRAME CAULKING-GREY - BETWEEN WINDOW FRAME AND THE BUILDING ON THE FRONT EXTERIOR	Gray Non-Fibrous Homogeneous	97.5	None	2.5% Chrysotile
WO-WFC-01B 551407481-0184	WINDOW FRAME CAULKING-GREY - BETWEEN WINDOW FRAME AND THE BUILDING ON THE FRONT EXTERIOR				
Positive Stop (Not Analyzed)					

Analyst(s)

Jon Delos Santos (4)

Nicole Yeo (21)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
WO-WFC-01C 551407481-0185	WINDOW FRAME CAULKING-GREY - BETWEEN WINDOW FRAME AND THE BUILDING ON THE FRONT EXTERIOR				
Positive Stop (Not Analyzed)					
WO-CFS-01A 551407481-0186	CHIMNEY FLASHING SEALANT-BLACK(PAINTED BROWN) - AROUND SEAMS OF CHIMNEY FLASHING ON THE ROOF	Brown/Yellow Non-Fibrous Homogeneous	97.2	None	2.8% Chrysotile
WO-CFS-01B 551407481-0187	CHIMNEY FLASHING SEALANT-BLACK(PAINTED BROWN) - AROUND SEAMS OF CHIMNEY FLASHING ON THE ROOF				
Positive Stop (Not Analyzed)					
WO-CFS-01C 551407481-0188	CHIMNEY FLASHING SEALANT-BLACK(PAINTED BROWN) - AROUND SEAMS OF CHIMNEY FLASHING ON THE ROOF				
Positive Stop (Not Analyzed)					
WO-WPC-01A 551407481-0189	WINDOW PANE CAULKING- BLACK - BETWEEN WINDOW FRAME AND GLASS PANE INTERIOR OF NE WINDOW	White/Black Non-Fibrous Homogeneous	98.5	None	1.5% Chrysotile

Analyst(s)

Jon Delos Santos (4)

Nicole Yeo (21)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
WO-WPC-01B 551407481-0190	WINDOW PANE CAULKING- BLACK - BETWEEN WINDOW FRAME AND GLASS PANE INTERIOR OF W WINDOW				
Positive Stop (Not Analyzed)					
WO-WPC-01C 551407481-0191	WINDOW PANE CAULKING- BLACK - BETWEEN WINDOW FRAME AND GLASS PANE INTERIOR OF NW WINDOW				
Positive Stop (Not Analyzed)					
WO-RS-01A 551407481-0200	ROOFING SHINGLE-TAR AND GRAVEL - ROOF(CONCEALED UNDER WOOD SHINGLES AND BUILDING PAPER)	Black/Green Non-Fibrous Homogeneous	100	None	No Asbestos Detected
WO-RS-01B 551407481-0201	ROOFING SHINGLE-TAR AND GRAVEL - ROOF(CONCEALED UNDER WOOD SHINGLES AND BUILDING PAPER)	Black/Green Non-Fibrous Homogeneous	100	None	No Asbestos Detected
WO-RS-01C 551407481-0202	ROOFING SHINGLE-TAR AND GRAVEL - ROOF(CONCEALED UNDER WOOD SHINGLES AND BUILDING PAPER)	Black/Green Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (4)

Nicole Yeo (21)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
WO-SF-01 551407481-0209	VINYL SHEET FLOORING- GREY AND CREAM GRAVEL PATTERN - MAIN FLOOR BATHROOM 1	Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected
WO-CM-01A 551407481-0210	CARPET MASTIC(REMNANT)-TAN - BASEMENT CORRIDOR	Gray/White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
WO-CM-01B 551407481-0211	CARPET MASTIC(REMNANT)-TAN - BASEMENT CORRIDOR	Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected
WO-CM-01C 551407481-0212	CARPET MASTIC(REMNANT)-TAN - BASEMENT CORRIDOR	Gray/Red Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (4)

Nicole Yeo (21)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
WO-WP-01 551407481-0163	WALL PANEL - BOILER ROOM	Gray/Yellow Fibrous Homogeneous		92% Non-fibrous (other)	8% Chrysotile
WO-PI-01A 551407481-0164	PIPE FITTING INSULATION- GREY - BASEMENT ROOM 8	Gray Fibrous Homogeneous		55% Non-fibrous (other)	45% Chrysotile
WO-PI-01B 551407481-0165	PIPE FITTING INSULATION- GREY - BOILER ROOM				Stop Positive (Not Analyzed)
WO-PI-01C 551407481-0166	PIPE FITTING INSULATION- GREY - BASEMENT ROOM 10				Stop Positive (Not Analyzed)
WO-API-01A 551407481-0167	"AIR-O-CELL" PIPE INSULATION - BASEMENT ROOM 12	Gray Fibrous Homogeneous		80% Non-fibrous (other)	20% Chrysotile
WO-API-01B 551407481-0168	"AIR-O-CELL" PIPE INSULATION - BASEMENT CORRIDOR				Stop Positive (Not Analyzed)

Analyst(s)

Jon Delos Santos (2)

Matthew Davis (15)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
WO-API-01C 551407481-0169	"AIR-O-CELL" PIPE INSULATION - BASEMENT ROOM 8				Stop Positive (Not Analyzed)
WO-CT-01A 551407481-0192	CEILING TILE- WHITE 1'X1' - MAIN FLOOR ROOM 1	Tan/White Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected
WO-CT-01B 551407481-0193	CEILING TILE- WHITE 1'X1' - MAIN FLOOR ROOM 1	Tan/White Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected
WO-CT-01C 551407481-0194	CEILING TILE- WHITE 1'X1' - MAIN FLOOR ROOM 1	Tan/White Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected
WO-DJC-01A 551407481-0195	DRYWALL JOINT COMPOUND - TOP OF THE BASEMENT STAIRWELL	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
WO-DJC-01B 551407481-0196	DRYWALL JOINT COMPOUND - MAIN FLOOR CORRIDOR	Tan Non-Fibrous Homogeneous		97% Non-fibrous (other)	3% Chrysotile
WO-DJC-01C 551407481-0197	DRYWALL JOINT COMPOUND - MAIN FLOOR ROOM 1	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Jon Delos Santos (2)

Matthew Davis (15)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
WO-DJC-01D 551407481-0198	DRYWALL JOINT COMPOUND - BOTTOM OF BASEMENT STAIRWELL	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
WO-DJC-01E 551407481-0199	DRYWALL JOINT COMPOUND - BASEMENT ROOM 11 CEILING	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
WO-BM-01A 551407481-0203	BRICK MORTAR - EXTERIOR OF THE CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
WO-BM-01B 551407481-0204	BRICK MORTAR - EXTERIOR OF THE CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
WO-BM-01C 551407481-0205	BRICK MORTAR - EXTERIOR OF THE CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
WO-DCB-01A 551407481-0206	"DONNACONA BOARD" - WEST WALL OF BASEMENT ROOM 9	Tan Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected

Analyst(s)

Jon Delos Santos (2)

Matthew Davis (15)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
WO-DCB-01B 551407481-0207	"DONNACONA BOARD" - WEST WALL OF BASEMENT ROOM 9	Tan Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected
WO-DCB-01C 551407481-0208	"DONNACONA BOARD" - WEST WALL OF BASEMENT ROOM 9	Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected

Analyst(s)

Jon Delos Santos (2)

Matthew Davis (15)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: **144901924.801****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
WO-P-01 Site: RED/GREY COLOUR Desc: BASEMENT CORRIDOR FLOOR	551407512-0020	10/16/2014		1400 ppm
WO-P-02 Site: YELLOW COLOUR Desc: BASEMENT STAIRWELL FLOOR	551407512-0021	10/16/2014		2000 ppm
WO-P-03 Site: YELLOW COLOUR Desc: BASEMENT TRIM	551407512-0022	10/16/2014		3400 ppm
WO-P-04 Site: RED COLOUR Desc: BASEMENT FLOORS	551407512-0023	10/16/2014		3500 ppm
WO-P-05 Site: CREAM COLOUR Desc: BASEMENT ROOM 8 WALLS	551407512-0024	10/16/2014		<90 ppm
WO-P-06 Site: GREY COLOUR Desc: BASEMENT FLOORS	551407512-0025	10/16/2014		<90 ppm
WO-P-07 Site: CREAM/GREEN COLOUR Desc: MAIN FLOOR WALLS	551407512-0026	10/16/2014		920 ppm
WO-P-08 Site: WHITE COLOR Desc: MAIN FLOOR CEILINGS	551407512-0027	10/16/2014		370 ppm
WO-P-09 Site: GREY COLOUR Desc: EXTERIOR CONCRETE AT FRONT ENTRANCE	551407512-0028	10/16/2014		2200 ppm
WO-P-10 Site: ORANGE COLOUR Desc: EXTERIOR WOOD AT FRONT ENTRANCE	551407512-0029	10/16/2014		26000 ppm
WO-P-11 Site: WHITE COLOUR Desc: EXTERIOR TRIM	551407512-0030	10/16/2014		20000 ppm


Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 10/16/2014 16:43:47

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: 144901924.801

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)**Client Sample Description**Lab ID**Collected**Analyzed**Lead
Concentration*

DRAFT

Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 10/16/2014 16:43:47

Appendix F
Findings and Recommendations
– Vehicle Garage Building

DRAFT

F-4.0 FINDINGS – VEHICLE GARAGE BUILDING

The Vehicle Garage Building was reportedly constructed in 1957.

Stantec understands that demolition of the Vehicle Garage Building has been proposed.

The results of the assessment for each of the considered hazardous materials within the Vehicle Garage Building are provided in the following sub-sections.

Floor plan drawings for the Vehicle Garage Building, which include locations of the samples collected during this assessment, and locations of identified hazardous building materials (where practical), are attached to this Appendix.

F-4.1 Asbestos

Stantec identified and sampled various suspected ACMs, including the following:

- Cement panel
- Pipe fitting insulation
- Pipe sealant
- Window frame and pane caulking
- Door caulking
- Drywall joint compound
- Roofing paper
- Roofing shingle
- Corrugated panel mastic.

30 samples of the above-noted suspected ACMs were collected and submitted to EMSL for analysis of asbestos content and nature.

A summary of the sample types, locations and analytical results is presented in Table F-4.1.1, below. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are attached at the end of this Appendix.

**Table F-4.1.1 Suspected ACM Sample Collection and Analysis Summary
Vehicle Garage Building, Haines Junction, YT**




Sample Number	Material Description	Sample Location	Result (%/type asbestos)
VG-CP-01	Cement panel	Interior wall of boiler room	10% Chrysotile
VG-PI-01A	Pipe fitting insulation – Grey	Boiler room	None Detected
VG-PI-01B	Pipe fitting insulation – Grey	Boiler room	None Detected
VG-PI-01C	Pipe fitting insulation – Grey	Storage shed	None Detected
VG-PS-01A	Pipe sealant - Cream/black	Inside pipe fittings in boiler room	0.39% Chrysotile
VG-PS-01B	Pipe sealant - Cream/black	Inside pipe fittings in water tank room	None Detected
VG-PS-01C	Pipe sealant - Cream/black	Inside pipe fittings in boiler room	None Detected
VG-WFC-01A	Window frame caulking – Yellow (painted black)	Exterior of windows between frame and building	1.1% Chrysotile
VG-WFC-01B	Window frame caulking – Yellow (painted black)	Exterior of windows between frame and building	Stop Positive
VG-WFC-01C	Window frame caulking – Yellow (painted black)	Exterior of windows between frame and building	Stop Positive
VG-WFC-02A	Window frame caulking – Yellow (painted white)	Exterior of windows between frame and building	None Detected
VG-WFC-02B	Window frame caulking – Yellow (painted white)	Exterior of windows between frame and building	None Detected
VG-WFC-02C	Window frame caulking – Yellow (painted white)	Exterior of windows between frame and building	None Detected
VG-DC-01A	Door caulking – Cream	Around exterior of doors	0.47% Chrysotile
VG-DC-01B	Door caulking – Cream	Around exterior of doors	0.29% Chrysotile
VG-DC-01C	Door caulking – Cream	Around exterior of doors	None Detected
VG-DC-02A	Door caulking – Clear (painted white)	Around garage doors on the west of the building	None Detected
VG-DC-02B	Door caulking – Clear (painted white)	Around garage doors on the west of the building	None Detected
VG-DC-02C	Door caulking – Clear (painted white)	Around garage doors on the west of the building	None Detected
VG-DJC-01A	Drywall joint compound	Room 1	None Detected
VG-DJC-01B	Drywall joint compound	Room 1	None Detected

**Table F-4.1.1 Suspected ACM Sample Collection and Analysis Summary
Vehicle Garage Building, Haines Junction, YT**



Sample Number	Material Description	Sample Location	Result (%/type asbestos)
VG-DJC-01C	Drywall joint compound	Room 1	None Detected
VG-RP-01A	Roofing paper – Black	Storage roof (concealed under wood shingles)	None Detected
VG-RP-01B	Roofing paper – Black	Storage roof (concealed under wood shingles)	None Detected
VG-RP-01C	Roofing paper – Black	Storage roof (concealed under wood shingles)	None Detected
VG-RS-01A	Roof shingle – Tar and gravel	Storage roof (concealed under wood shingles and roof paper)	None Detected
VG-RS-01B	Roof shingle – Tar and gravel	Storage roof (concealed under wood shingles and roof paper)	None Detected
VG-RS-01C	Roof shingle – Tar and gravel	Storage roof (concealed under wood shingles and roof paper)	None Detected
VG-CPM-01A	Corrugated panel mastic – Beige	On panels in the ATV garage	0.48% Chrysotile
VG-CPM-01B	Corrugated panel mastic – Beige	On panels in the ATV garage	0.73% Chrysotile
VG-CPM-01C	Corrugated panel mastic – Beige	On panels in the ATV garage	1.3% Chrysotile

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of suspected ACM sample analytical results, the materials presented in Table F-4.1.2, below were identified as ACMs.

Table F-4.1.2 Summary of Identified ACMs
Vehicle Garage Building, Haines Junction, YT

Identified ACM Description and Condition Information		Photo
Cement panel on interior walls and ceiling throughout.		
Friability	Non-friable	
Condition	Good	
Content	10% Chrysotile	
Pipe sealant cream/black inside cast iron pipe fittings throughout		
Friability	Non-friable	
Condition	Good	
Content	0.39% Chrysotile	
Yellow window frame caulking (painted black) on the exterior of windows at the rear of the building (between window frame and the building)		
Friability	Non-friable	
Condition	Good	
Content	1.1% Chrysotile	

**Table F-4.1.2 Summary of Identified ACMs
Vehicle Garage Building, Haines Junction, YT**

Identified ACM Description and Condition Information		Photo
Cream caulking around doors on the exterior of the building		
Friability	Non-friable	
Condition	Good	
Content	0.29 - 0.47% Chrysotile	
Beige mastic on the backside of corrugated wall panels throughout		
Friability	Non-friable	
Condition	Good	
Content	0.48 – 1.3% Chrysotile	

F-4.2 Lead

Lead is expected to be present in the following materials:

- Solder used on copper domestic pipes
- Caulking on bell fittings for cast iron drainage pipes
- Electrical equipment (i.e. batteries for emergency lighting/signage).


With respect to paint, 6 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table F-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

**Table F-4.2.1 Suspected LCP Sample Collection and Analysis Summary
Vehicle Garage Building, Haines Junction, YT**

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
VG-P-01	Floors	Grey	2,200	Yes
VG-P-02	Interior cinder block walls	White	550	No
VG-P-03	Drywall walls in room 1	Cream	<90	No
VG-P-04	Washroom walls	Pink	950	Yes
VG-P-05	On steel lift	Blue	260	No
VG-P-06	Exterior walls	White	230	No

Based on our observations and on our interpretations of suspected LCP sample analytical results, the materials presented in Table F-4.2.2, below were identified as LCPs.

**Table F-4.2.2 Summary of Identified LCPs
Vehicle Garage Building, Haines Junction, YT**

Identified LCP Description	Photo
<p>Grey paint on floors.</p> <p>This paint was observed to be in good condition (not bubbling, flaking or peeling).</p>	

F-4.3 Polychlorinated Biphenyls

Approximately 33 fluorescent light fixtures were observed throughout. Based on the age of the building the ballasts within these fixtures may contain PCBs.

F-4.4 Mercury

Two (2) suspected mercury-containing thermostats were observed, as indicated on the attached floor plan drawings.

Mercury vapour is expected to be present in fluorescent light tubes/bulbs throughout.

F-4.5 Mould

No suspect mould or moisture impacted materials were observed during the assessment.

F-4.6 Ozone-Depleting Substances

No suspected ODS-containing equipment was observed during the assessment.

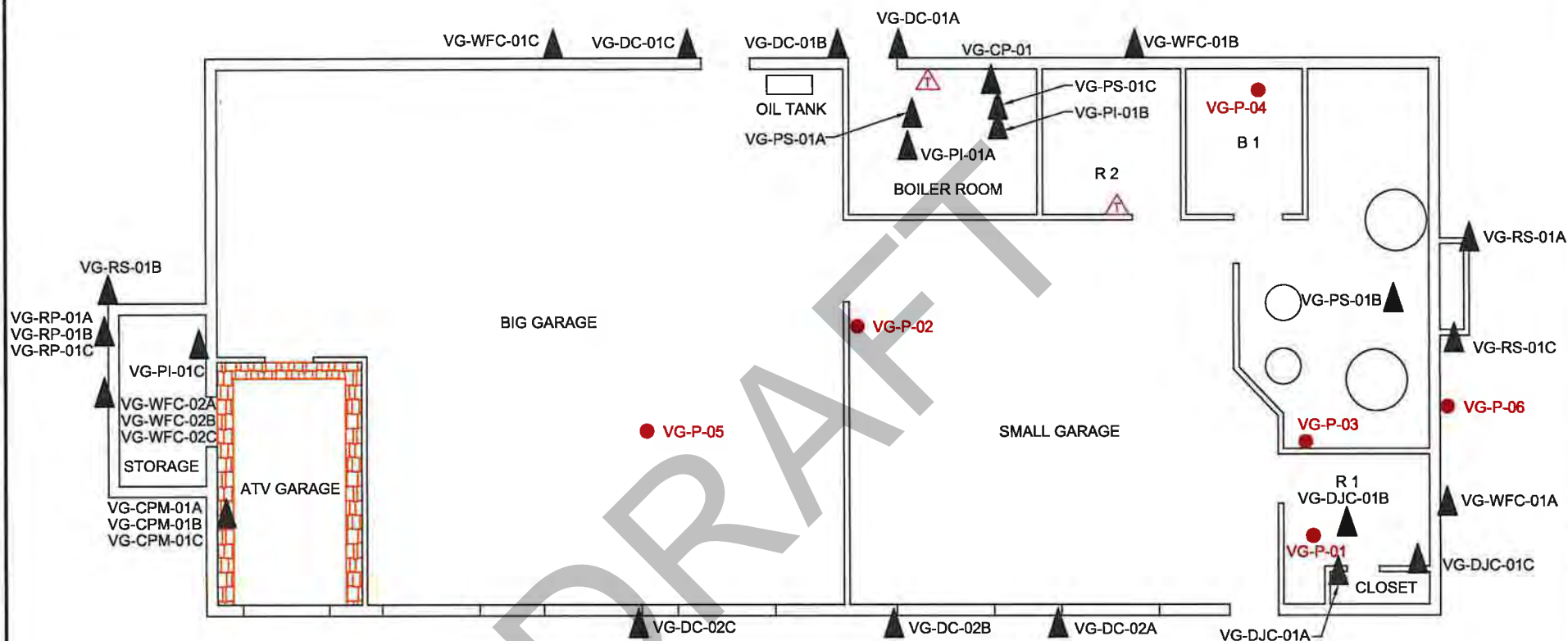
F-4.7 Silica

Silica may be present in concrete, cement, and mortar observed in various locations throughout.





F-5.0 BUILDING-SPECIFIC RECOMMENDATIONS

In general, identified hazardous building materials should be handled in accordance with the recommendations for demolition that are provided in Section 5 of the main body of this report.

DRAFT



LEGEND

-  BULK SAMPLE
-  PAINT CHIP SAMPLE
-  ASBESTOS-CONTAINING CORRUGATED PANEL MASTIC
-  MERCURY-CONTAINING THERMOSTAT

NOTES: 1. CEMENT PANEL ON WALLS AND CEILING THROUGHOUT IS ACM.
2. PIPE SEALANT in CAST IRON PIPE FITTINGS THROUGHOUT IS ACM.
3. YELLOW WINDOW FRAME CAULKING (PAINTED BLACK) ON EXTERIOR OF WINDOWS THROUGHOUT IS ACM.
4. CREAM CAULKING AROUND DOORS ON THE EXTERIOR IS ACM.
5. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

HAINES JUNCTION, YT

PARKS CANADA

App'd By: TW

F



DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
VG-PS-01A 551407481-0217	PIPE SEALANT- CREAM/BLACK - INSIDE PIPE FITTINGS IN BOILER ROOM	Gray/Black Non-Fibrous Homogeneous	99.6	None	0.39% Chrysotile
VG-PS-01B 551407481-0218	PIPE SEALANT- CREAM/BLACK - INSIDE PIPE FITTINGS IN WATER TANK ROOM	Gray/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
VG-PS-01C 551407481-0219	PIPE SEALANT- CREAM/BLACK - INSIDE PIPE FITTINGS IN BOILER ROOM	Gray/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
VG-WFC-01A 551407481-0220	WINDOW FRAME CAULKING- YELLOW (PAINTED BLACK) - EXTERIOR OF WINDOWS BETWEEN FRAME AND BUILDING	Black/Yellow Non-Fibrous Homogeneous	98.9	None	1.1% Chrysotile
VG-WFC-01B 551407481-0221	WINDOW FRAME CAULKING- YELLOW (PAINTED BLACK) - EXTERIOR OF WINDOWS BETWEEN FRAME AND BUILDING				

Positive Stop (Not Analyzed)

Analyst(s)

Jon Delos Santos (7)

Nicole Yeo (15)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM
via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
VG-WFC-01C 551407481-0222	WINDOW FRAME CAULKING- YELLOW(PAINTED BLACK) - EXTERIOR OF WINDOWS BETWEEN FRAME AND BUILDING				
Positive Stop (Not Analyzed)					
VG-WFC-02A 551407481-0223	WINDOW FRAME CAULKING- YELLOW(PAINTED WHITE) - EXTERIOR OF WINDOWS BETWEEN FRAME AND BUILDING	White/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
VG-WFC-02B 551407481-0224	WINDOW FRAME CAULKING- YELLOW(PAINTED WHITE) - EXTERIOR OF WINDOWS BETWEEN FRAME AND BUILDING	White/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
VG-WFC-02C 551407481-0225	WINDOW FRAME CAULKING- YELLOW(PAINTED WHITE) - EXTERIOR OF WINDOWS BETWEEN FRAME AND BUILDING	White/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
VG-DC-01A 551407481-0226	DOOR CAULKING-CREAM - AROUND EXTERIOR OF DOORS	Gray/White Non-Fibrous Homogeneous	99.5	None	0.47% Chrysotile

Analyst(s)

Jon Delos Santos (7)

Nicole Yeo (15)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
VG-DC-01B 551407481-0227	DOOR CAULKING-CREAM - AROUND EXTERIOR OF DOORS	Gray/White Non-Fibrous Homogeneous	99.7	None	0.29% Chrysotile
VG-DC-01C 551407481-0228	DOOR CAULKING-CREAM - AROUND EXTERIOR OF DOORS	Brown Non-Fibrous Homogeneous	100	None	No Asbestos Detected
VG-DC-02A 551407481-0229	DOOR CAULKING- CLEAR(PAINTED WHITE) - AROUND GARAGE DOORS ON THE WEST OF THE BUILDING	White/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
VG-DC-02B 551407481-0230	DOOR CAULKING- CLEAR(PAINTED WHITE) - AROUND GARAGE DOORS ON THE WEST OF THE BUILDING	White/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
VG-DC-02C 551407481-0231	DOOR CAULKING- CLEAR(PAINTED WHITE) - AROUND GARAGE DOORS ON THE WEST OF THE BUILDING	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
VG-RP-01A 551407481-0235	ROOFING PAPER-BLACK - STORAGE ROOF(CONCELAED UNDER WOOD SHINGLES)	Brown/White Fibrous Homogeneous	100	None	No Asbestos Detected
VG-RP-01B 551407481-0236	ROOFING PAPER-BLACK - STORAGE ROOF(CONCELAED UNDER WOOD SHINGLES)	Brown/White Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (7)

Nicole Yeo (15)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
VG-RP-01C 551407481-0237	ROOFING PAPER-BLACK - STORAGE ROOF(CONCELAED UNDER WOOD SHINGLES)	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
VG-RS-01A 551407481-0238	ROOF SHINGLE-TAR AND GRAVEL - STORAGE ROOF(CONCELAED UNDER WOOD SHINGLES AND ROOF PAPER)	Brown/Various Non-Fibrous Homogeneous	100	None	No Asbestos Detected
VG-RS-01B 551407481-0239	ROOF SHINGLE-TAR AND GRAVEL - STORAGE ROOF(CONCELAED UNDER WOOD SHINGLES AND ROOF PAPER)	Various/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
VG-RS-01C 551407481-0240	ROOF SHINGLE-TAR AND GRAVEL - STORAGE ROOF(CONCELAED UNDER WOOD SHINGLES AND ROOF PAPER)	Various/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
VG-CPM-01A 551407481-0241	CORRUGATED PANEL MASTIC-BEIGE - ON PANELS IN THE ATV GARAGE	Yellow Non-Fibrous Homogeneous	99.5	None	0.48% Chrysotile
VG-CPM-01B 551407481-0242	CORRUGATED PANEL MASTIC-BEIGE - ON PANELS IN THE ATV GARAGE	Yellow Non-Fibrous Homogeneous	99.3	None	0.73% Chrysotile

Analyst(s)

Jon Delos Santos (7)

Nicole Yeo (15)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

**Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM
via EPA 600/R-93/116 section 2.3**

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
VG-CPM-01C 551407481-0243	CORRUGATED PANEL MASTIC-BEIGE - ON PANELS IN THE ATV GARAGE	Yellow Non-Fibrous Homogeneous	98.7	None	1.3% Chrysotile

Analyst(s)

Jon Delos Santos (7)

Nicole Yeo (15)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos	
			% Fibrous	% Non-Fibrous	% Type	
VG-CP-01 551407481-0213	CEMENT PANEL - INTERIOR WALL OF BOILER ROOM	Gray/White Non-Fibrous Homogeneous		90% Non-fibrous (other)	10% Chrysotile	
VG-PI-01A 551407481-0214	PIPE FITTING INSULATION-GREY - BOILER ROOM	Gray Fibrous Homogeneous	20% Cellulose 10% Min. Wool	70% Non-fibrous (other)	None Detected	
VG-PI-01B 551407481-0215	PIPE FITTING INSULATION-GREY - BOILER ROOM	Gray Fibrous Homogeneous	20% Cellulose 10% Min. Wool	70% Non-fibrous (other)	None Detected	
VG-PI-01C 551407481-0216	PIPE FITTING INSULATION-GREY - STORAGE SHED	Gray Non-Fibrous Homogeneous	20% Cellulose 10% Min. Wool	70% Non-fibrous (other)	None Detected	
VG-DJC-01A 551407481-0232	DRYWALL JOINT COMPOUND - ROOM 1	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected	
VG-DJC-01B 551407481-0233	DRYWALL JOINT COMPOUND - ROOM 1	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected	
VG-DJC-01C 551407481-0234	DRYWALL JOINT COMPOUND - ROOM 1	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected	

Analyst(s)

Arabee Sathiseelan (5)

Jon Delos Santos (2)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: **144901924.801****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
VG-P-01	551407512-0031 Site: GREY COLOUR Desc: FLOORS	10/16/2014		2200 ppm
VG-P-02	551407512-0032 Site: WHITE COLOUR Desc: INTERIOR CINDER BLOCK WALLS	10/16/2014		550 ppm
VG-P-03	551407512-0033 Site: CREAM COLOUR Desc: DRYWALL WALLS IN ROOM 1	10/16/2014		<90 ppm
VG-P-04	551407512-0034 Site: PINK COLOUR Desc: WASHROOM WALLS	10/16/2014		950 ppm
VG-P-05	551407512-0035 Site: BLUE COLOUR Desc: ON STEEL LIFT	10/16/2014		260 ppm
VG-P-06	551407512-0036 Site: WHITE COLOUR Desc: EXTERIOR WALLS	10/16/2014		230 ppm


Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 10/16/2014 16:47:54

DRAFT

Appendix G
Findings and Recommendations
– Butler Storage Shed

DRAFT

G-4.0 FINDINGS – BUTLER STORAGE SHED

The Butler Storage Shed was reportedly constructed in 1957.

Stantec understands that demolition of the Butler Storage Shed has been proposed.

The results of the assessment for each of the considered hazardous materials within the Butler Storage Shed are provided in the following sub-sections.

Floor plan drawings for the Butler Storage Shed, which include locations of the samples collected during this assessment and locations of identified hazardous building materials (where practical), are attached to this Appendix.

G-4.1 Asbestos

Stantec identified and sampled various suspected ACMs, including the following:

- Window pane caulking
- Door caulking
- Light panels
- Concrete foundation sealant.

12 samples of the above-noted suspected ACMs were collected and submitted to EMSL for analysis of asbestos content and nature.

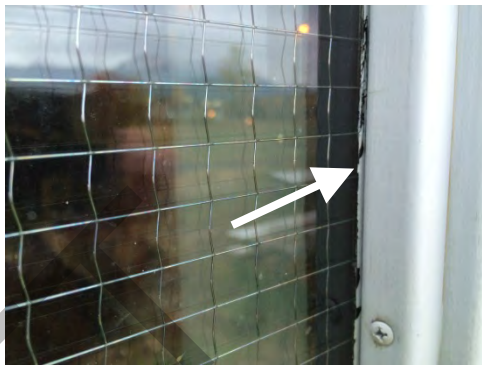

A summary of the sample types, locations and analytical results is presented in Table G-4.1.1, below. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are attached at the end of this Appendix.

**Table G-4.1.1 Suspected ACM Sample Collection and Analysis Summary
Butler Storage Shed, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
BS-WPC-01A	Window pane caulking – Black	Between window frame and glass pane on exterior of windows beside doors	1.7% Chrysotile
BS-WPC-01B	Window pane caulking – Black	Between window frame and glass pane on exterior of windows beside doors	Stop Positive
BS-WPC-01C	Window pane caulking – Black	Between window frame and glass pane on exterior of windows beside doors	Stop Positive
BS-DC-01A	Door caulking – Grey	Around exterior of doors	<0.25% Chrysotile
BS-DC-01B	Door caulking – Grey	Around exterior of doors	<0.25% Chrysotile
BS-DC-01C	Door caulking – Grey	Around exterior of doors	<0.25% Chrysotile
BS-LP-01A	Light panel – Green	West exterior	None Detected
BS-LP-01B	Light panel – Green	West exterior	None Detected
BS-LP-01C	Light panel – Green	West exterior	None Detected
BS-CFS-01A	Concrete foundation sealant - Grey	Exterior wall base	None Detected
BS-CFS-01B	Concrete foundation sealant - Grey	Exterior wall base	None Detected
BS-CFS-01C	Concrete foundation sealant - Grey	Exterior wall base	None Detected

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of suspected ACM sample analytical results, the materials presented in Table G-4.1.2, below were identified as ACMs.

**Table G-4.1.2 Summary of Identified ACMs
Butler Storage Shed, Haines Junction, YT**

Identified ACM Description and Condition Information		Photo
Black/grey window pane caulking between window frame and glass pane on exterior of windows beside doors		
Friability	Non-friable	
Condition	Good	
Content	1.7% Chrysotile	
Grey/white door caulking around the exterior door frames		
Friability	Non-friable	
Condition	Good	
Content	<0.25% Chrysotile	

G-4.2 Lead

Typical potential lead-containing items (solder on wiring, in domestic water pipes and/or in the bell fittings of cast iron drain pipes; lead acid batteries associated with emergency exit signage, etc.) were not observed.

With respect to paint, 2 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table G-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

**Table G-4.2.1 Suspected LCP Sample Collection and Analysis Summary
Butler Storage Shed, Haines Junction, YT**

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
BS-P-01	Floors	Grey	<100	No
BS-P-02	Structural steel	Red	1,200	Yes

Based on our observations and on our interpretations of suspected LCP sample analytical results, the material presented in Table G-4.2.2, below was identified as an LCP.

**Table G-4.2.2 Summary of Identified LCPs
Butler Storage Shed, Haines Junction, YT**

Identified LCP Description	Photo
Red paint on the structural steel throughout. This paint was observed to be in good condition (not bubbling, flaking or peeling).	

G-4.3 Polychlorinated Biphenyls

No suspected PCB-containing equipment was observed during the assessment.

G-4.4 Mercury

No suspected mercury-containing equipment was observed during the assessment.

G-4.5 Mould

No suspect mould or moisture impacted materials were observed during the assessment.

G-4.6 Ozone-Depleting Substances

No suspected ODS-containing equipment was observed during the assessment.

G-4.7 Silica

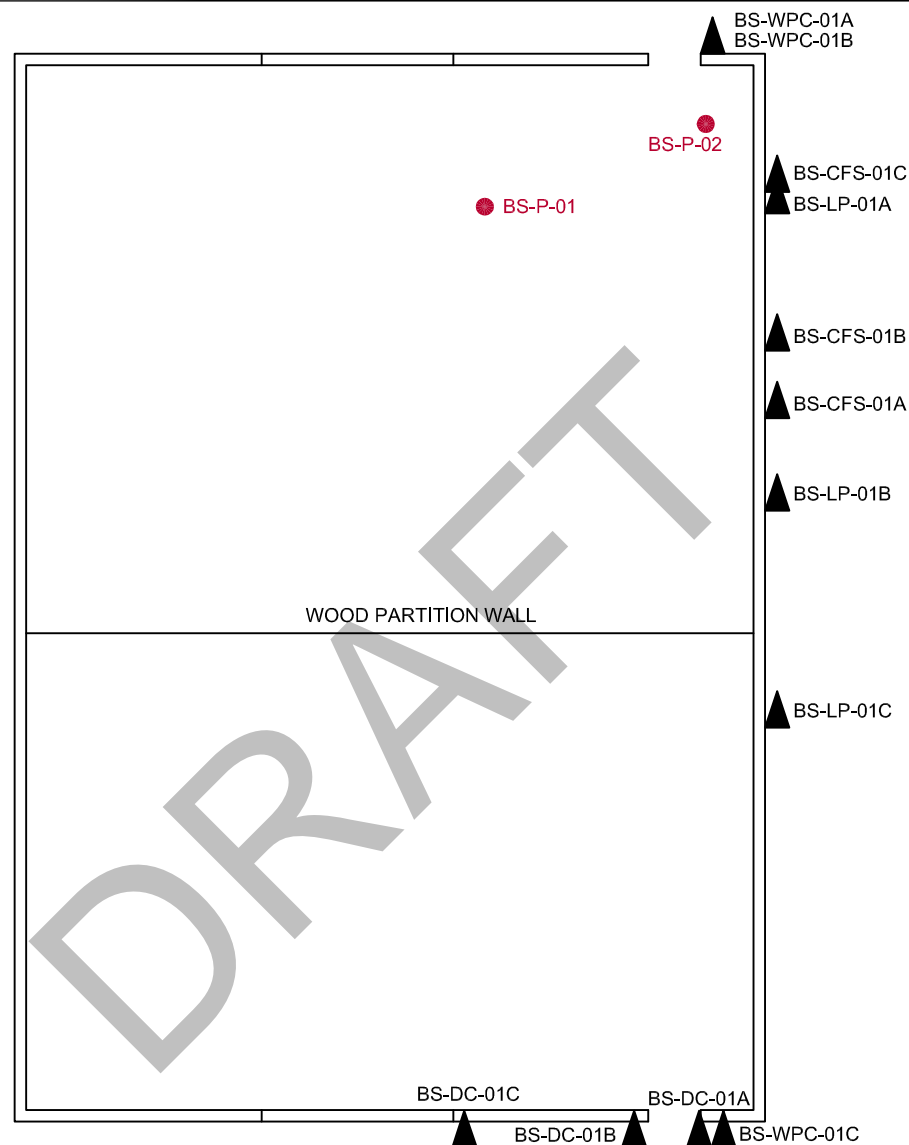
Silica may be present in concrete and cement observed in various locations throughout.

G-5.0 BUILDING-SPECIFIC RECOMMENDATIONS

In general, identified hazardous building materials should be handled in accordance with the recommendations for demolition that are provided in Section 5 of the main body of this report.

DRAFT

DRAFT



BUTLER STORAGE SHED

NOTES: 1. BLACK/GREY WINDOW PANE CAULKING BETWEEN WINDOW FRAME AND GLASS PANES THROUGHOUT IS ACM.

2. GREY/WHITE DOOR CAULKING AROUND EXTERIOR OF DOORS IS ACM.

3. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

LEGEND

- ▲ BULK SAMPLE
- PAINT CHIP SAMPLE

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

Client: PARKS CANADA

Project No.:	144901924
Scale:	NTS
Date:	14/11/18
Dwn. By:	CD ^{SL2014110110} _{PK/DM}
App'd By:	TW

Dwg. No.:

G



DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
BS-WPC-01A 551407481-0244	WINDOW PANE CAULKING-BLACK - BETWEEN WINDOW FRAME AND GLASS PANE ON EXTERIOR OF WINDOWS BESIDE DOORS	Gray/Black Non-Fibrous Homogeneous	98.3	None	1.7% Chrysotile
BS-WPC-01B 551407481-0245	WINDOW PANE CAULKING-BLACK - BETWEEN WINDOW FRAME AND GLASS PANE ON EXTERIOR OF WINDOWS BESIDE DOORS				
Positive Stop (Not Analyzed)					
BS-WPC-01C 551407481-0246	WINDOW PANE CAULKING-BLACK - BETWEEN WINDOW FRAME AND GLASS PANE ON EXTERIOR OF WINDOWS BESIDE DOORS				
Positive Stop (Not Analyzed)					
BS-DC-01A 551407481-0247	DOOR CAULKING-GREY - AROUND EXTERIOR OF DOORS	Gray/White Non-Fibrous Homogeneous	100	None	<0.25% Chrysotile
BS-DC-01B 551407481-0248	DOOR CAULKING-GREY - AROUND EXTERIOR OF DOORS	Gray/White Non-Fibrous Homogeneous	100	None	<0.25% Chrysotile
BS-DC-01C 551407481-0249	DOOR CAULKING-GREY - AROUND EXTERIOR OF DOORS	Gray/White Non-Fibrous Homogeneous	100	None	<0.25% Chrysotile

Analyst(s)

Jon Delos Santos (2)

Nicole Yeo (5)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481

CustomerID: 55JACQ30N

CustomerPO: 144901924.801

ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
BS-CFS-01A 551407481-0253	CONCRETE FOUNDATION SEALANT-GREY - EXTERIOR WALL BASE	Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected
BS-CFS-01B 551407481-0254	CONCRETE FOUNDATION SEALANT-GREY - EXTERIOR WALL BASE	Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected
BS-CFS-01C 551407481-0255	CONCRETE FOUNDATION SEALANT-GREY - EXTERIOR WALL BASE	Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (2)

Nicole Yeo (5)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
BS-LP-01A 551407481-0250	LIGHT PANEL-GREEN - WEST EXTERIOR	White Fibrous Homogeneous	35% Glass	65% Non-fibrous (other)	None Detected
BS-LP-01B 551407481-0251	LIGHT PANEL-GREEN - WEST EXTERIOR	White Fibrous Homogeneous	35% Glass	65% Non-fibrous (other)	None Detected
BS-LP-01C 551407481-0252	LIGHT PANEL-GREEN - WEST EXTERIOR	Gray Fibrous Homogeneous	20% Glass	80% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (2)

Jon Delos Santos (1)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: 144901924.801

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

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
BS-P-01	551407512-0037	10/16/2014		<100 ppm
Site: GREY COLOUR Desc: FLOORS Insufficient sample to reach reporting limit.				
BS-P-02	551407512-0038	10/16/2014		1200 ppm
Site: RED COLOUR Desc: STRUCTURAL STEEL				

DRAFT

Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 10/16/2014 16:49:55

DRAFT

Appendix H
Findings and Recommendations
– Fire Cache

DRAFT

H-4.0 FINDINGS – FIRE CACHE

The original construction date of the Fire Cache was not provided.

Stantec understands that demolition of the Fire Cache has been proposed.

The results of the assessment for each of the considered hazardous materials within the Fire Cache are provided in the following sub-sections.

Floor plan drawings for the Fire Cache, which include locations of the samples collected during this assessment and locations of identified hazardous building materials (where practical), are attached to this Appendix.

H-4.1 Asbestos

Stantec identified and sampled various suspected ACMs, including the following:

- Window frame caulking.

3 samples of the above-noted suspected ACMs were collected and submitted to EMSL for analysis of asbestos content and nature.


A summary of the sample types, locations and analytical results is presented in Table H-4.1.1, below. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are attached at the end of this Appendix.

**Table H-4.1.1 Suspected ACM Sample Collection and Analysis Summary
Fire Cache, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
FC-WFC-01A	Window frame caulking – Grey	Between window frame and building on the exterior	3.1% Chrysotile
FC-WFC-01B	Window frame caulking – Grey	Between window frame and building on the exterior	Stop Positive
FC-WFC-01C	Window frame caulking – Grey	Between window frame and building on the exterior	Stop Positive

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of suspected ACM sample analytical results, the material presented in Table H-4.1.2, below was identified as an ACM.

**Table H-4.1.2 Summary of Identified ACMs
Fire Cache, Haines Junction, YT**

Identified ACM Description and Condition Information		Photo
Grey window frame caulking between window frame and building on the exterior		
Friability	Non-friable	
Condition	Good	
Content	3.1% Chrysotile	

H-4.2 Lead

Typical potential lead-containing items (solder on wiring, in domestic water pipes and/or in the bell fittings of cast iron drain pipes; lead acid batteries associated with emergency exit signage, etc.) were not observed.

With respect to paint, 2 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table H-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

**Table H-4.2.1 Suspected LCP Sample Collection and Analysis Summary
Fire Cache, Haines Junction, YT**

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
FC-P-01	Exterior trim	Grey	20,000	Yes
FC-P-02	Exterior siding	Beige	6,100	Yes

Based on our observations and on our interpretations of suspected LCP sample analytical results, the materials presented in Table H-4.2.2, below were identified as LCPs.

**Table H-4.2.2 Summary of Identified LCPs
Fire Cache, Haines Junction, YT**

Identified LCP Description	Photo
<p>Grey paint on the exterior trim.</p> <p>This paint was observed to be in good condition (not bubbling, flaking or peeling).</p>	
<p>Beige paint on the exterior siding.</p> <p>This paint was observed to be in good condition (not bubbling, flaking or peeling).</p>	

H-4.3 Polychlorinated Biphenyls

No suspected PCB-containing equipment was observed during the assessment.

H-4.4 Mercury

No suspected mercury-containing equipment was observed during the assessment.

H-4.5 Mould

No suspect mould or moisture impacted materials were observed during the assessment.

H-4.6 Ozone-Depleting Substances

No suspected ODS-containing equipment was observed during the assessment.

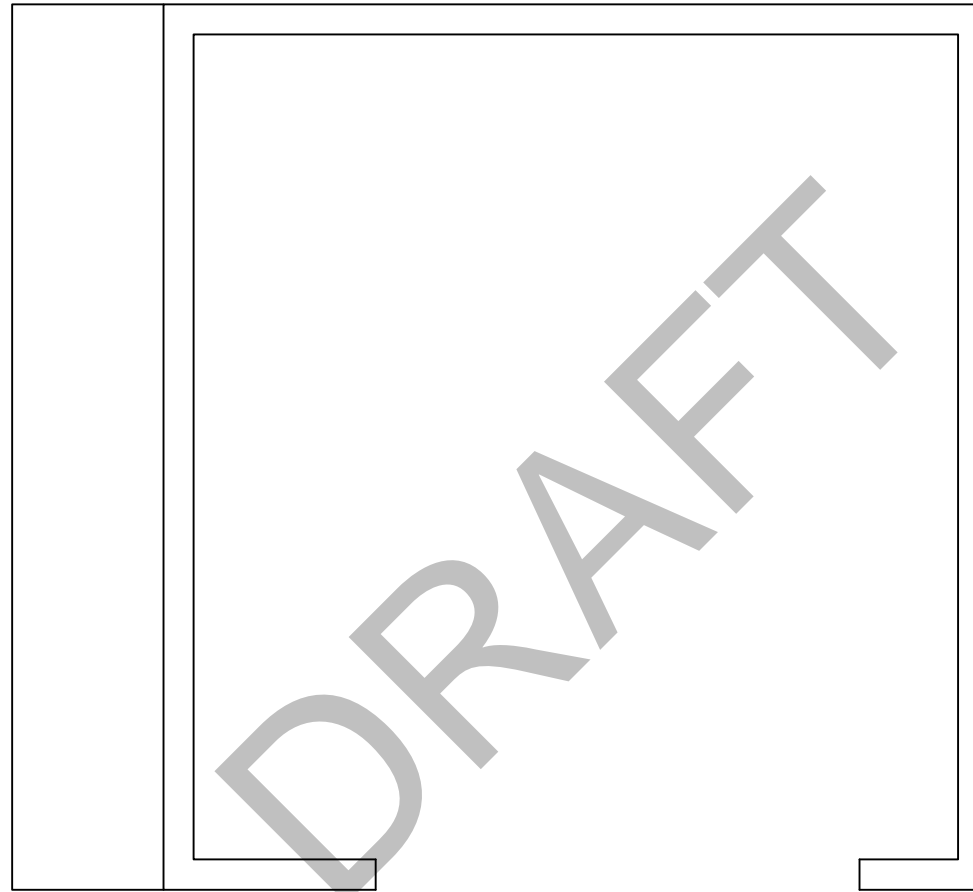
H-4.7 Silica

Silica may be present in concrete and cement observed in various locations throughout.

H-5.0 BUILDING-SPECIFIC RECOMMENDATIONS

In general, identified hazardous building materials should be handled in accordance with the recommendations for demolition that are provided in Section 5 of the main body of this report.

DRAFT



FC-WFC-01A
FC-WFC-01B
FC-WFC-01C

FC-P-02

FC-P-01

FIRE CACHE

LEGEND

-  BULK SAMPLE
-  PAINT CHIP SAMPLE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

Client: PARKS CANADA

Project No.:	144901924
Scale:	NTS
Date:	14/11/18
Dwn. By:	CD <small>SL2014110111</small> PK/DM
App'd By:	TW

Dwg. No.:

H



DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

**Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM
via EPA 600/R-93/116 section 2.3**

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
FC-WFC-01A 551407481-0256	WINDOW FRAME CAULKING-GREY - BETWEEN WINDOW FRAME AND BUILDING ON THE EXTERIOR	Brown Non-Fibrous Homogeneous	96.9	None	3.1% Chrysotile
FC-WFC-01B 551407481-0257	WINDOW FRAME CAULKING-GREY - BETWEEN WINDOW FRAME AND BUILDING ON THE EXTERIOR				
Positive Stop (Not Analyzed)					
FC-WFC-01C 551407481-0258	WINDOW FRAME CAULKING-GREY - BETWEEN WINDOW FRAME AND BUILDING ON THE EXTERIOR				
Positive Stop (Not Analyzed)					

Analyst(s)

Nicole Yeo (1)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: **144901924.801****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
FC-P-01	551407512-0039 Site: GREY COLOUR Desc: EXTERIOR TRIM	10/16/2014		20000 ppm
FC-P-02	551407512-0040 Site: BEIGE COLOUR Desc: EXTERIOR SIDING	10/16/2014		6100 ppm

DRAFT

Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 10/16/2014 16:49:59

DRAFT

Appendix I
Findings and Recommendations
– Pump House

DRAFT

I-4.0 FINDINGS – PUMP HOUSE

The Pump House was reportedly constructed in 1956.

Stantec understands that demolition of the Pump House has been proposed.

The results of the assessment for each of the considered hazardous materials within the Pump House are provided in the following sub-sections.

Floor plan drawings for the Pump House, which include locations of the samples collected during this assessment and locations of identified hazardous building materials (where practical), are attached to this Appendix.

I-4.1 Asbestos

Stantec identified and sampled various suspected ACMs, including the following:

- Roofing paper
- Exterior seam caulking
- Fiberglass insulation sealant.

9 samples of the above-noted suspected ACMs were collected and submitted to EMSL for analysis of asbestos content and nature.

A summary of the sample types, locations and analytical results is presented in Table I-4.1.1, below. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are attached at the end of this Appendix.

**Table I-4.1.1 Suspected ACM Sample Collection and Analysis Summary
Pump House, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
PH-RP-01A	Roof paper – Black	Roof (concealed under wood shingle)	None Detected
PH-RP-01B	Roof paper – Black	Roof (concealed under wood shingle)	None Detected
PH-RP-01C	Roof paper – Black	Roof (concealed under wood shingle)	None Detected
PH-ESC-01A	Exterior seam caulking – White	Seams of exterior siding	None Detected
PH-ESC-01B	Exterior seam caulking – White	Seams of exterior siding	None Detected

**Table I-4.1.1 Suspected ACM Sample Collection and Analysis Summary
Pump House, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
PH-ESC-01C	Exterior seam caulking – White	Seams of exterior siding	None Detected
PH-FIS-01A	Fiberglass insulation sealant – White	Interior seams of fiberglass insulation	None Detected
PH-FIS-01B	Fiberglass insulation sealant – White	Interior seams of fiberglass insulation	None Detected
PH-FIS-01C	Fiberglass insulation sealant – White	Interior seams of fiberglass insulation	None Detected

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of suspected ACM sample analytical results, no ACMs were identified.

I-4.2 Lead

Typical potential lead-containing items (solder on wiring, in domestic water pipes and/or in the bell fittings of cast iron drain pipes; lead acid batteries associated with emergency exit signage, etc.) were not observed.

With respect to paint, 2 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table I-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

**Table I-4.2.1 Suspected LCP Sample Collection and Analysis Summary
Pump House, Haines Junction, YT**

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
PH-P-01	Exterior trim	White colour	<200	No
PH-P-02	Exterior siding	Beige colour	<340	No

Based on our observations and on our interpretations of suspected LCP sample analytical results, no LCPs were identified.

I-4.3 Polychlorinated Biphenyls

No suspected PCB-containing equipment was observed during the assessment.

I-4.4 Mercury

No suspected mercury-containing equipment was observed during the assessment.

I-4.5 Mould

No suspect mould or moisture impacted materials were observed during the assessment.

I-4.6 Ozone-Depleting Substances

No suspected ODS-containing equipment was observed during the assessment.

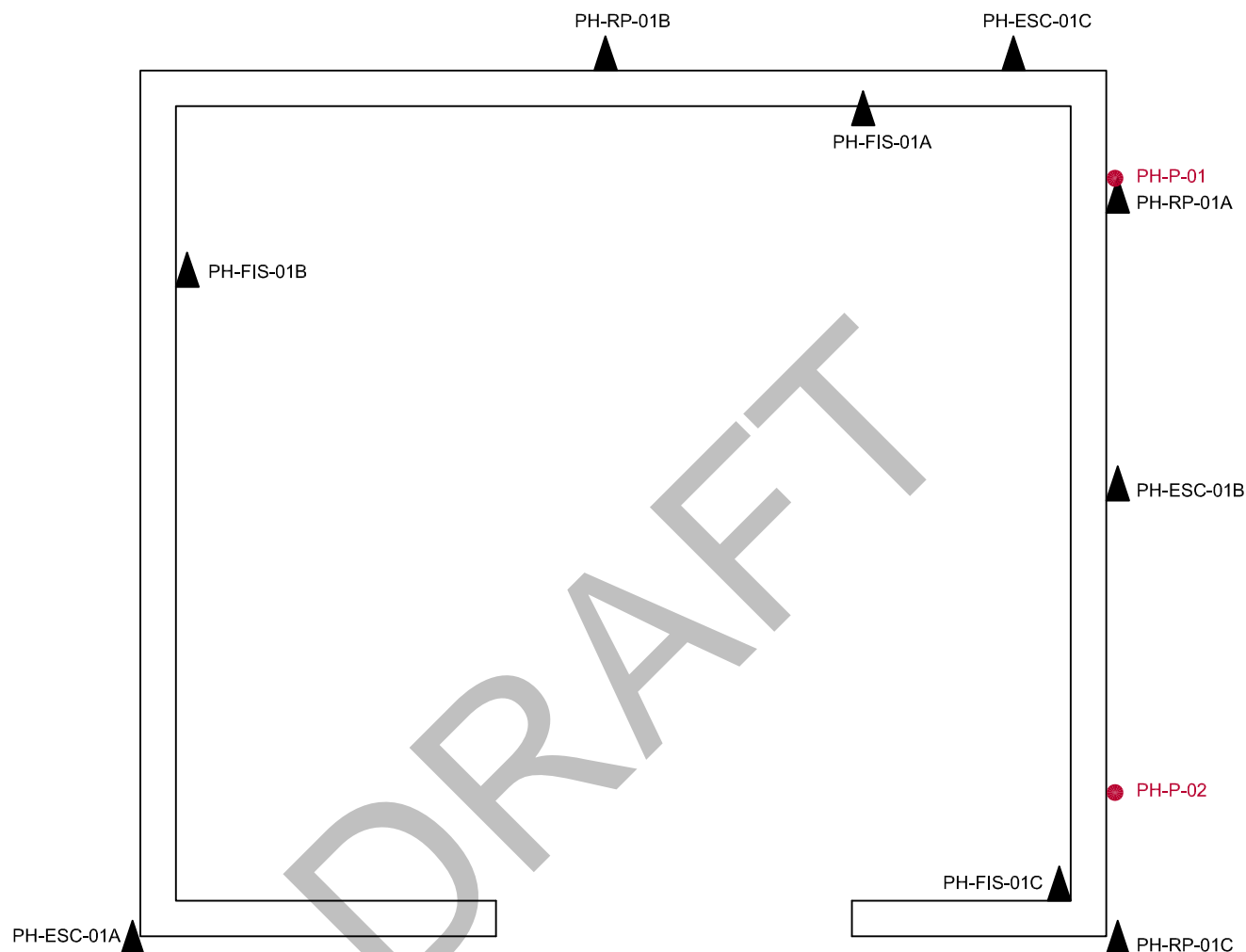
I-4.7 Silica

Silica may be present in concrete and cement observed in various locations throughout.

I-5.0 BUILDING-SPECIFIC RECOMMENDATIONS

In general, identified hazardous building materials should be handled in accordance with the recommendations for demolition that are provided in Section 5 of the main body of this report.

DRAFT



PUMP HOUSE 1

LEGEND

- ▲ BULK SAMPLE
- PAINT CHIP SAMPLE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

Client: PARKS CANADA

Project No.:	144901924
Scale:	NTS
Date:	14/11/18
Dwn. By:	CD <small>SL2014110112</small> PK/DM
App'd By:	TW

Dwg. No.:

I



DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
PH-RP-01A 551407481-0259	ROOF PAPER-BLACK - ROOF(CONCEALED UNDER WOOD SHINGLE)	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
PH-RP-01B 551407481-0260	ROOF PAPER-BLACK - ROOF(CONCEALED UNDER WOOD SHINGLE)	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
PH-RP-01C 551407481-0261	ROOF PAPER-BLACK - ROOF(CONCEALED UNDER WOOD SHINGLE)	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
PH-ESC-01A 551407481-0262	EXTERIOR SEAM CAULKING-WHITE - SEAMS OF EXTERIOR SIDING	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
PH-ESC-01B 551407481-0263	EXTERIOR SEAM CAULKING-WHITE - SEAMS OF EXTERIOR SIDING	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
PH-ESC-01C 551407481-0264	EXTERIOR SEAM CAULKING-WHITE - SEAMS OF EXTERIOR SIDING	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (2)

Nicole Yeo (4)

Matthew Davis
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
PH-FIS-01A 551407481-0265	FIBERGLASS INSULATION SEALANT- WHITE - INTERIOR SEAMS OF FIBERGLASS INSULATION	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
PH-FIS-01B 551407481-0266	FIBERGLASS INSULATION SEALANT- WHITE - INTERIOR SEAMS OF FIBERGLASS INSULATION	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
PH-FIS-01C 551407481-0267	FIBERGLASS INSULATION SEALANT- WHITE - INTERIOR SEAMS OF FIBERGLASS INSULATION	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (2)

Jon Delos Santos (1)

Matthew Davis
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: **144901924.801****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
PH-P-01	551407512-0045 Site: WHITE COLOUR Desc: EXTERIOR TRIM Insufficient sample to reach reporting limit.	10/16/2014		<200 ppm
PH-P-02	551407512-0046 Site: BEIGE COLOUR Desc: EXTERIOR SIDING Insufficient sample to reach reporting limit.	10/16/2014		<340 ppm

DRAFT

Lisa Podzyhun
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Report Amended: 11/19/2014 10:53:18 Replaces the Initial Report 10/16/2014 16:53:12. Reason Code: Client-Change to Sample ID

DRAFT

Appendix J
Findings and Recommendations
– Well Shed

DRAFT

J-4.0 FINDINGS – WELL SHED

The Well Shed was reportedly constructed in 1980.

Stantec understands that demolition of the Well Shed has been proposed.

The results of the assessment for each of the considered hazardous materials within the Well Shed are provided in the following sub-sections.

Floor plan drawings for the Well Shed, which include locations of the samples collected during this assessment and locations of identified hazardous building materials (where practical), are attached to this Appendix.

J-4.1 Asbestos

No suspected ACMs were observed during the site assessment therefore no samples were collected.

J-4.2 Lead

Typical potential lead-containing items (solder on wiring, in domestic water pipes and/or in the bell fittings of cast iron drain pipes; lead acid batteries associated with emergency exit signage, etc.) were not observed.

With respect to paint, 4 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table J-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

Table J-4.2.1 Suspected LCP Sample Collection and Analysis Summary
Well Shed, Haines Junction, YT

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
WS-P-01	Exterior trim	White	<90	No
WS-P-02	Exterior trim	Blue	<210	No
WS-P-03	Interior walls	White	<90	No
WS-P-04	Exterior siding	Blue	<170	No

Based on our observations and on our interpretations of suspected LCP sample analytical results, no LCPs were identified.

J-4.3 Polychlorinated Biphenyls

No suspected PCB-containing equipment was observed during the assessment.

J-4.4 Mercury

No suspected mercury-containing equipment was observed during the assessment.

J-4.5 Mould

No suspect mould or moisture impacted materials were observed during the assessment.

J-4.6 Ozone-Depleting Substances

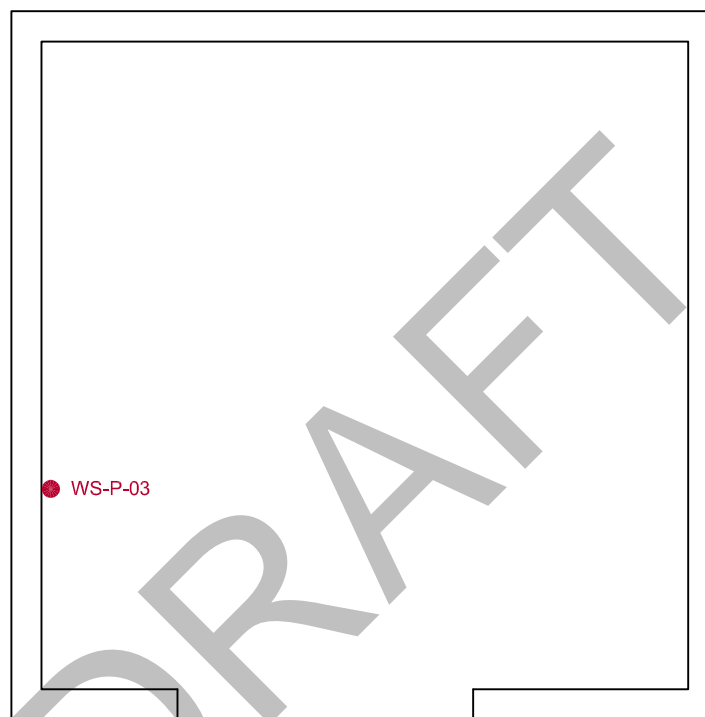
No suspected ODS-containing equipment was observed during the assessment.

J-4.7 Silica

Silica may be present in concrete and cement observed in various locations throughout.

J-5.0 BUILDING-SPECIFIC RECOMMENDATIONS

In general, identified hazardous building materials should be handled in accordance with the recommendations for demolition that are provided in Section 5 of the main body of this report.



WELL SHED

LEGEND

● PAINT CHIP SAMPLE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

**FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS
AND BULK SAMPLE LOCATIONS**

HAINES JUNCTION, YT

Client: PARKS CANADA

Project No.:	144901924
Scale:	NTS
Date:	14/11/18
Dwn. By:	CD <small>SL2014110113</small> PK/DM
App'd By:	TW

Dwg. No.:

J



DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: **144901924.801****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
WS-P-01	551407512-0041 Site: WHITE COLOR Desc: EXTERIOR TRIM	10/16/2014		<90 ppm
WS-P-02	551407512-0042 Site: BLUE COLOUR Desc: EXTERIOR TRIM Insufficient sample to reach reporting limit.	10/16/2014		<210 ppm
WS-P-03	551407512-0043 Site: WHITE COLOUR Desc: INTERIOR WALLS	10/16/2014		<90 ppm
WS-P-04	551407512-0044 Site: BLUE COLOUR Desc: EXTERIOR SIDING Insufficient sample to reach reporting limit.	10/16/2014		<170 ppm

DRAFT

Lisa Podzyhun
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Report Amended: 11/19/2014 10:53:18 Replaces the Initial Report 10/16/2014 16:53:12. Reason Code: Client-Change to Sample ID

DRAFT

Appendix K
Findings and Recommendations
– Sewage Treatment Building

DRAFT

K-4.0 FINDINGS – SEWAGE TREATMENT BUILDING

The original construction date of the Sewage Treatment Building is reportedly 1996.

Stantec understands that demolition of the Sewage Treatment Building has been proposed.

The results of the assessment for each of the considered hazardous materials within the Sewage Treatment Building are provided in the following sub-sections.

Floor plan drawings for the Sewage Treatment Building, which include locations of the samples collected during this assessment and locations of identified hazardous building materials (where practical), are attached to this Appendix.

K-4.1 Asbestos

No suspected ACMs were observed during the site assessment therefore no samples were collected.

K-4.2 Lead

Typical potential lead-containing items (solder on wiring, in domestic water pipes and/or in the bell fittings of cast iron drain pipes; lead acid batteries associated with emergency exit signage, etc.) were not observed.

With respect to paint, 3 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table K-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

**Table K-4.2.1 Suspected LCP Sample Collection and Analysis Summary
Sewage Treatment Building, Haines Junction, YT**

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
ST-P-01	Floor	Grey	<220	No
ST-P-02	Interior walls and ceiling	White	<90	No
ST-P-03	Exterior trim	Blue	<90	No

Based on our observations and on our interpretations of suspected LCP sample analytical results, no LCPs were identified.

K-4.3 Polychlorinated Biphenyls

Based on the construction date of the building, fluorescent light ballasts are not suspected to contain PCBs.

No other suspected PCB-containing equipment was observed during the assessment.

K-4.4 Mercury

No suspected mercury-containing equipment was observed during the assessment.

K-4.5 Mould

No suspect mould or moisture impacted materials were observed during the assessment.

K-4.6 Ozone-Depleting Substances

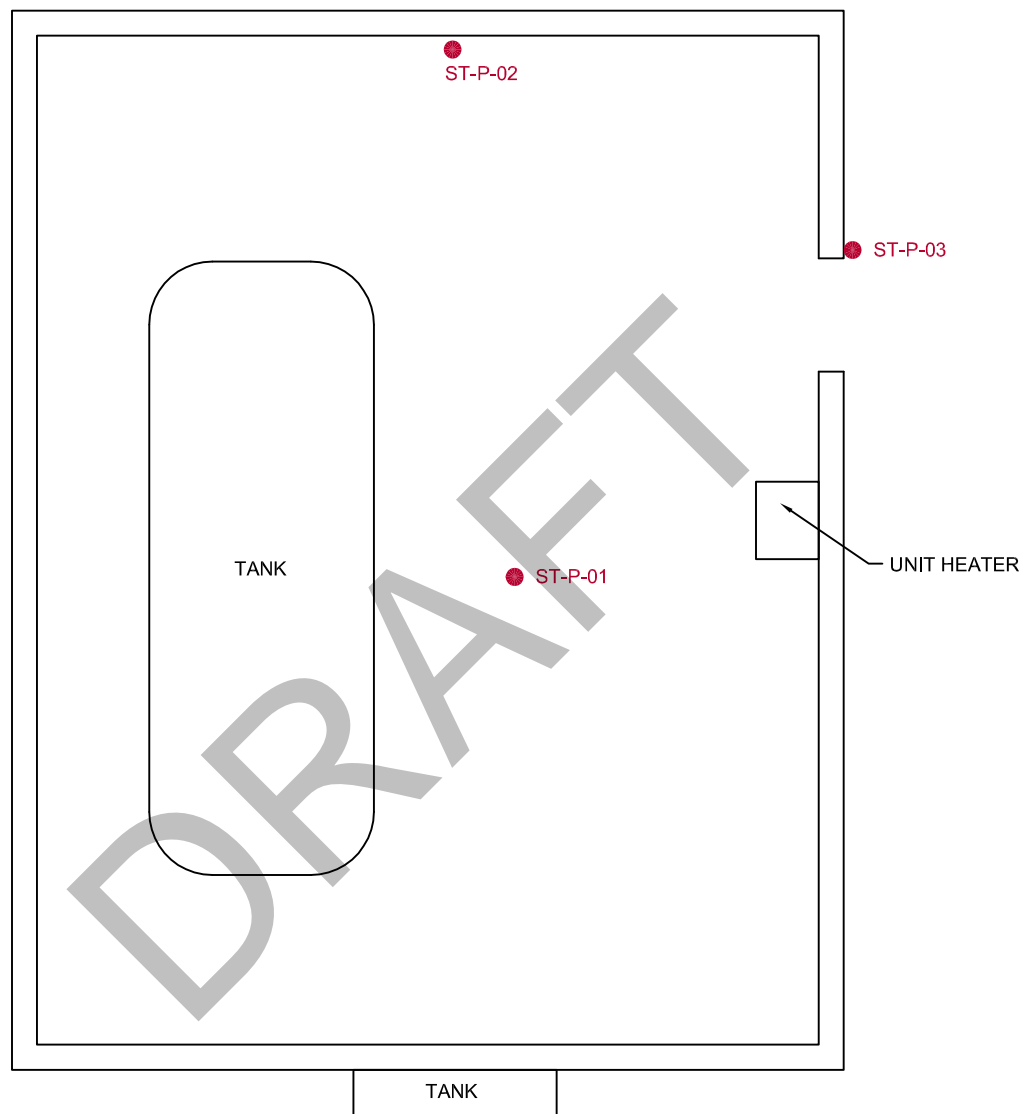
No suspected ODS-containing equipment was observed during the assessment.

K-4.7 Silica

Silica may be present in concrete and cement observed in various locations throughout.

K-5.0 RECOMMENDATIONS TO ADDRESS IDENTIFIED ISSUES – SEWAGE TREATMENT BUILDING

In general, identified hazardous building materials should be handled in accordance with the recommendations for demolition that are provided in Section 5 of the main body of this report.



SEWAGE TREATMENT BUILDING

LEGEND

● PAINT CHIP SAMPLE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

Client: PARKS CANADA

Project No.:	144901924
Scale:	NTS
Date:	14/11/18
Dwn. By:	CD <small>SL2014110114</small> PK/DM
App'd By:	TW

Dwg. No.:

K



DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: 144901924.801

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

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
ST-P-01	551407512-0047 Site: GREY COLOUR Desc: FLOOR Insufficient sample to reach reporting limit.	10/16/2014		<220 ppm
ST-P-02	551407512-0048 Site: WHITE COLOUR Desc: INTERIOR WALLS AND CEILING	10/16/2014		<90 ppm
ST-P-03	551407512-0049 Site: BLUE COLOUR Desc: EXTERIOR TRIM	10/16/2014		<90 ppm


Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 10/16/2014 16:54:24

DRAFT

Appendix L
Findings and Recommendations – House 1

DRAFT

L-4.0 FINDINGS – HOUSE 1

House 1 was reportedly constructed in 1960.

Stantec understands that demolition of House 1 has been proposed.

The results of the assessment for each of the considered hazardous materials within House 1 are provided in the following sub-sections.

Floor plan drawings for House 1, which include locations of the samples collected during this assessment and locations of identified hazardous building materials (where practical), are attached to this Appendix.

L-4.1 Asbestos

Stantec identified and sampled various suspected ACMs, including the following:

- Heat shields in incandescent lights
- Sheet flooring
- Vinyl floor tile
- Window pane caulking
- Fire stop
- Ceiling texture coat
- Drywall joint compound
- Roofing paper
- Ceiling tiles
- Brick mortar.

46 samples of the above-noted suspected ACMs were collected and submitted to EMSL for analysis of asbestos content and nature.

A summary of the sample types, locations and analytical results is presented in Table L-4.1.1, below. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are attached at the end of this Appendix.

It should be noted that several bulk samples of vinyl floor tile were further separated into layers during laboratory analysis.

**Table L-4.1.1: Suspected ACM Sample Collection and Analysis Summary
House 1, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
H1-HS-01A	Heat shield – Silver	Inside round incandescent light fixture on the main level	45% Chrysotile
H1-HS-01B	Heat shield – Silver	Inside round incandescent light fixture on the main level	Stop Positive
H1-HS-01C	Heat shield – Silver	Inside round incandescent light fixture on the main level	Stop Positive
H1-HS-02A	Heat shield – Silver	Inside round incandescent light fixture in basement room 4	45% Chrysotile
H1-HS-02B	Heat shield – Silver	Inside round incandescent light fixture in basement room 4	Stop Positive
H1-HS-02C	Heat shield – Silver	Inside round incandescent light fixture in basement room 4	Stop Positive
H1-SF-01	Vinyl sheet flooring – Red ceramic tile pattern	Kitchen	None Detected
H1-SF-02	Vinyl sheet flooring – Beige ceramic tile pattern	Bathroom 1	None Detected
H1-SF-03	Vinyl sheet flooring – Yellow stone pattern	Bathroom 2	None Detected
H1-SF-04	Vinyl sheet flooring – Beige pebble pattern	Stairwell	None Detected
H1-FT-01	9"x9" vinyl floor tile – Red	Basement room 4	1.0% Chrysotile
H1-FT-01-Mastic	Floor tile mastic – Black	Basement room 4	None Detected
H1-FT-02	9"x9" vinyl floor tile – Beige	Basement room 5	1.0% Chrysotile
H1-FT-02-Mastic	Floor tile mastic – Black	Basement room 5	None Detected
H1-WPC-01A	Window pane caulking – Grey	Between window frame and glass pane in the thruway addition	None Detected
H1-WPC-01B	Window pane caulking – Grey	Between window frame and glass pane in the thruway addition	None Detected
H1-WPC-01C	Window pane caulking – Grey	Between window frame and glass pane in the thruway addition	None Detected
H1-WPC-02A	Window pane caulking – Grey	Between window frame and glass pane in main house windows	2.6% Chrysotile

**Table L-4.1.1: Suspected ACM Sample Collection and Analysis Summary
House 1, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
H1-WPC-02B	Window pane caulking – Grey	Between window frame and glass pane in main house windows	Stop Positive
H1-WPC-02C	Window pane caulking – Grey	Between window frame and glass pane in main house windows	Stop Positive
H1-EWPC-01A	Exterior window pane caulking – Grey	Between window frame and glass pane on exterior of main house windows	1.6% Chrysotile
H1-EWPC-01B	Exterior window pane caulking – Grey	Between window frame and glass pane on exterior of main house windows	Stop Positive
H1-EWPC-01C	Exterior window pane caulking – Grey	Between window frame and glass pane on exterior of main house windows	Stop Positive
H1-FS-01A	Fire stop – Grey	Around furnace exhaust penetration in the chimney	None Detected
H1-FS-01B	Fire stop – Grey	Around furnace exhaust penetration in the chimney	None Detected
H1-FS-01C	Fire stop – Grey	Around furnace exhaust penetration in the chimney	None Detected
H1-CTC-01A	Ceiling texture coat – White	Living room	3% Chrysotile
H1-CTC-01B	Ceiling texture coat – White	Kitchen	None Detected
H1-CTC-01C	Ceiling texture coat – White	Hallway	1% Chrysotile
H1-CTC-01D	Ceiling texture coat – White	Room 2	None Detected
H1-CTC-01E	Ceiling texture coat – White	Room 3	None Detected
H1-DJC-01A	Drywall joint compound	Dining room	None Detected
H1-DJC-01B	Drywall joint compound	Hallway	2% Chrysotile
H1-DJC-01C	Drywall joint compound	Living room	2% Chrysotile
H1-DJC-01D	Drywall joint compound	Hallway	<1% Chrysotile
H1-DJC-01E	Drywall joint compound	Room 3	None Detected
H1-RP-01A	Roofing paper – Black	Roof (concealed under wood shingles)	None Detected

**Table L-4.1.1: Suspected ACM Sample Collection and Analysis Summary
House 1, Haines Junction, YT**



Sample Number	Material Description	Sample Location	Result (%/type asbestos)
H1-RP-01B	Roofing paper – Black	Roof (concealed under wood shingles)	None Detected
H1-RP-01C	Roofing paper – Black	Roof (concealed under wood shingles)	None Detected
H1-CT-01A	White 1'x1' ceiling tile – Brush strokes pattern	Basement room 6	None Detected
H1-CT-01B	White 1'x1' ceiling tile – Brush strokes pattern	Basement room 6	None Detected
H1-CT-01C	White 1'x1' ceiling tile – Brush strokes pattern	Basement room 6	None Detected
H1-CT-02A	White 2'x6' ceiling tile	Basement room 4	None Detected
H1-CT-02B	White 2'x6' ceiling tile	Basement room 4	None Detected
H1-CT-02C	White 2'x6' ceiling tile	Basement room 4	None Detected
H1-BM-01A	Brick mortar	Basement on chimney	None Detected
H1-BM-01B	Brick mortar	Basement on chimney	None Detected
H1-BM-01C	Brick mortar	Basement on chimney	None Detected

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of suspected ACM sample analytical results, the materials presented in Table L-4.1.2, below were identified as ACMs.

**Table L-4.1.2: Summary of Identified ACMs
House 1, Haines Junction, YT**

Identified ACM Description and Condition Information		Photo
Heat shields (foil covered) inside round incandescent light fixtures on the main floor and in the basement		
Friability	Friable	
Condition	Good	
Content	45% Chrysotile	
9"x9" vinyl floor tile in basement rooms 4 and 5 (both beige and red)		
Friability	Non-friable	
Condition	Good	
Content	1.0% Chrysotile	
Grey window pane caulking between window frame and glass pane in main house windows		
Friability	Non-friable	
Condition	Good	
Content	1.6 - 2.6% Chrysotile	

**Table L-4.1.2: Summary of Identified ACMs
House 1, Haines Junction, YT**

Identified ACM Description and Condition Information		Photo
White ceiling texture coat throughout the main house		
Friability	Non-friable in situ can be made friable during removal	
Condition	Good	
Content	1 - 3% Chrysotile	
Drywall joint compound throughout		
Friability	Non-friable in situ can be made friable during removal	
Condition	Good	
Content	<1 - 2% Chrysotile	

L-4.1.1 Ceiling Texture and Drywall Joint Compound

Chrysotile asbestos was detected in 2 of 5 samples of ceiling texture and 3 of 5 samples of drywall joint compound, which were collected from various application types (interior partition, perimeter, ceilings, etc.) within the building. As visual distinction between asbestos-containing and non-asbestos-containing forms of these materials is not practical (it is likely that over the years there were several renovations where these materials may have been layered; finished walls and ceilings are covered with multiple layers of paint, and finishing is conducted to blend different types of wall/ceiling materials such that the surface is continuous) and as the asbestos content of these materials may be inconsistent (the application of ceiling texture and drywall joint compound was often conducted by hand-mixing the components), the extent of asbestos-containing ceiling texture and drywall joint compound is difficult to determine. As such, ceiling texture and drywall joint compound throughout the building should be considered asbestos-containing.

L-4.2 Lead

Lead is expected to be present in the following materials:

- Solder used on copper domestic pipes
- Caulking on bell fittings for cast iron drainage pipes
- Electrical equipment (i.e. batteries for emergency lighting/signage).

With respect to paint, 6 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table L-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

**Table L-4.2.1: Suspected LCP Sample Collection and Analysis Summary
House 1 Haines Junction, YT**

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
H1-P-01	Interior walls	White	<90	No
H1-P-02	Basement floors	Grey	880	Yes
H1-P-03	Exterior walls	White	22,000	Yes
H1-P-04	Exterior trim	Brown	13,000	Yes
H1-P-05	Garage walls	Peach	<90	No
H1-P-06	Thruway door	Green	51,000	Yes

Based on our observations and on our interpretations of suspected LCP sample analytical results, the materials presented in Table L-4.2.2, below were identified as LCPs.

**Table L-4.2.2 Summary of Identified LCPs
House 1, Haines Junction, YT**

Identified LCP Description	Photo
<p>White paint on exterior walls.</p> <p>This paint was observed to be in good condition (not bubbling, flaking or peeling).</p>	
<p>Brown paint on exterior trim.</p> <p>This paint was observed to be in good condition (not bubbling, flaking or peeling).</p>	
<p>Green paint on the thruway door.</p> <p>This paint was observed to be in good condition (not bubbling, flaking or peeling).</p>	

L-4.3 Polychlorinated Biphenyls

Approximately 7 fluorescent light fixtures were observed throughout. Based on the age of the building, the ballasts within these fixtures may contain PCBs.

L-4.4 Mercury

Mercury vapour is expected to be present in fluorescent light bulbs/tubes throughout.

L-4.5 Mould

No suspect mould or moisture impacted materials were observed during the assessment.

L-4.6 Ozone-Depleting Substances

No suspected ODS-containing equipment was observed during the assessment.

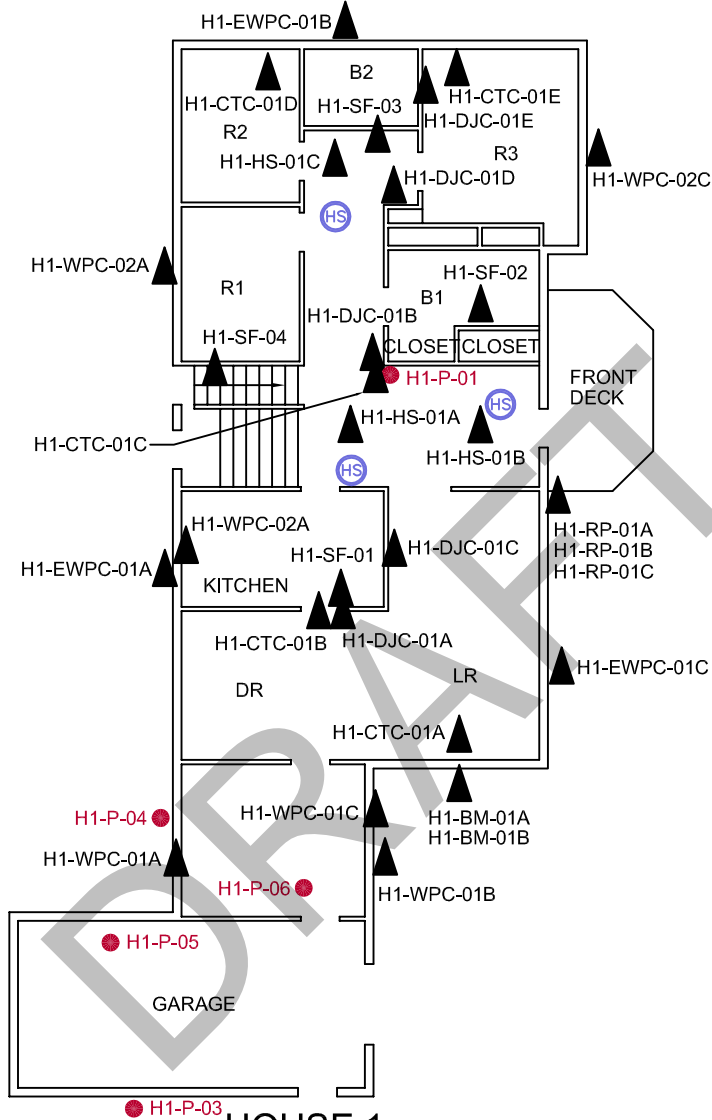
L-4.7 Silica

Silica may be present in concrete, cement, and ceramic tiles observed in various locations throughout.

L-5.0 BUILDING-SPECIFIC RECOMMENDATIONS

In general, identified hazardous building materials should be handled in accordance with the recommendations for demolition that are provided in Section 5 of the main body of this report.




DRAFT



**HOUSE 1
MAIN FLOOR**

- NOTES:**
1. GREY WINDOW PANE CAULKING BETWEEN WINDOW FRAMES AND GLASS PANES THROUGHOUT THE MAIN HOUSE IS ACM.
 2. CEILING TEXTURE COAT THROUGHOUT IS ACM.
 3. DRYWALL JOINT COMPOUND THROUGHOUT IS ACM.
 4. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

LEGEND

-  BULK SAMPLE
-  PAINT CHIP SAMPLE
-  ASBESTOS-CONTAINING INCANDESCENT LIGHT HEAT SHIELD

**FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS
AND BULK SAMPLE LOCATIONS**

HAINES JUNCTION, YT

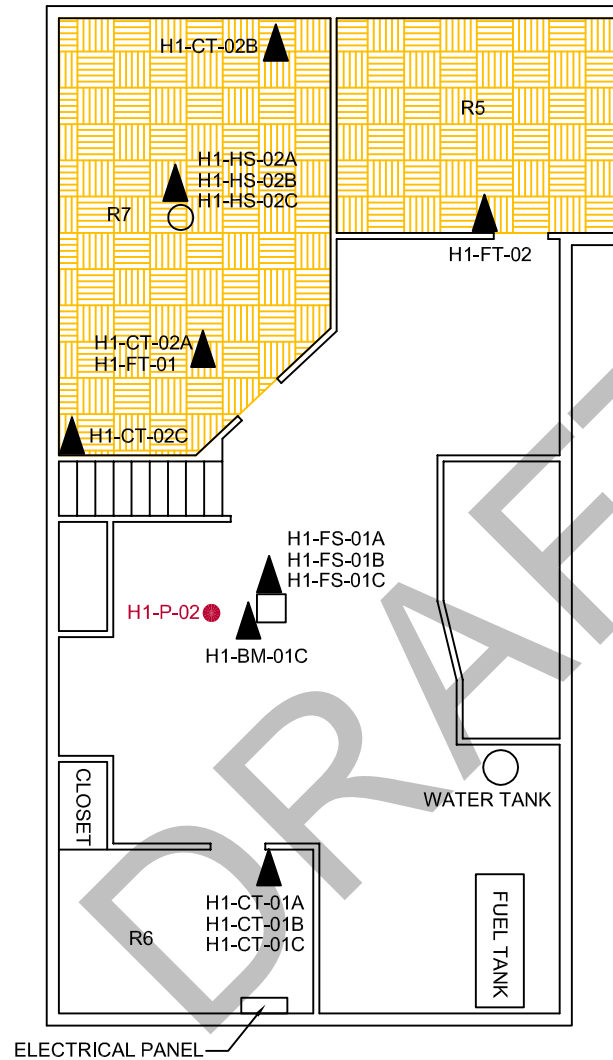
Client: PARKS CANADA

Project No.:	144901924
Scale:	NTS
Date:	14/11/18
Dwn. By:	CD _{VM} SL2014110115
App'd By:	TW

Dwg. No.:

L1








HOUSE 1 BASEMENT

- NOTES:**
1. GREY WINDOW PANE CAULKING BETWEEN WINDOW FRAMES AND GLASS PANES THROUGHOUT THE MAIN HOUSE IS ACM.
 2. CEILING TEXTURE COAT THROUGHOUT IS ACM.
 3. DRYWALL JOINT COMPOUND THROUGHOUT IS ACM.
 4. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

LEGEND

-  BULK SAMPLE
-  PAINT CHIP SAMPLE
-  ASBESTOS-CONTAINING FLOOR TILE

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

Client: PARKS CANADA

Project No.:	144901924
Scale:	NTS
Date:	14/11/18
Dwn. By:	CD _{VM} SL2014110116
App'd By:	TW

Dwg. No.:

L2



**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: **144901924.801**

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H1-SF-01 551407481-0274	VINYL SHEET FLOORING- RED CERAMIC TILE PATTERN - KITCHEN	White/Various Non-Fibrous Homogeneous	98.5	1.5 Wollastonite	No Asbestos Detected
H1-SF-02 551407481-0275	VINYL SHEET FLOORING- BEIGE CERAMIC TILE PATTERN - BATHROOM 1	White/Various Non-Fibrous Homogeneous	99.4	0.58 Wollastonite	No Asbestos Detected
H1-SF-03 551407481-0276	VINYL SHEET FLOORING- YELLOW STONE PATTERN - BATHROOM 2	White/Various Non-Fibrous Homogeneous	99.2	0.77 Wollastonite	No Asbestos Detected
H1-SF-04 551407481-0277	VINYL SHEET FLOORING- BEIGE PEBBLE PATTERN - STAIRWELL	Gray/Various Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H1-FT-01 551407481-0278	9"X9" VINYL FLOOR TILE- RED - BASEMENT ROOM 4	Pink Non-Fibrous Homogeneous	99.0	None	1.0% Chrysotile
H1-FT-01-Mastic 551407481-0278A	9"X9" VINYL FLOOR TILE- RED - BASEMENT ROOM 4	Brown/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H1-FT-02 551407481-0279	9"X9" VINYL FLOOR TILE- BEIGE - BASEMENT ROOM 5	White Non-Fibrous Homogeneous	99.0	None	1.0% Chrysotile
H1-FT-02-Mastic 551407481-0279A	9"X9" VINYL FLOOR TILE- BEIGE - BASEMENT ROOM 5	Brown Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (2)

Nicole Yeo (14)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H1-WPC-01A 551407481-0280	WINDOW PANE CAULKING-GREY - BETWEEN WINDOW FRAME AND GLASS PANE IN THE THRUWAY ADDITION	Gray/White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H1-WPC-01B 551407481-0281	WINDOW PANE CAULKING-GREY - BETWEEN WINDOW FRAME AND GLASS PANE IN THE THRUWAY ADDITION	Gray/White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H1-WPC-01C 551407481-0282	WINDOW PANE CAULKING-GREY - BETWEEN WINDOW FRAME AND GLASS PANE IN THE THRUWAY ADDITION	Gray/White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H1-WPC-02A 551407481-0283	WINDOW PANE CAULKING-GREY - BETWEEN WINDOW FRAME AND GLASS PANE IN MAIN HOUSE WINDOWS	Gray/White Non-Fibrous Homogeneous	97.4	None	2.6% Chrysotile
H1-WPC-02B 551407481-0284	WINDOW PANE CAULKING-GREY - BETWEEN WINDOW FRAME AND GLASS PANE IN MAIN HOUSE WINDOWS				
Positive Stop (Not Analyzed)					

Analyst(s)

Jon Delos Santos (2)

Nicole Yeo (14)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H1-WPC-02C 551407481-0285	WINDOW PANE CAULKING-GREY - BETWEEN WINDOW FRAME AND GLASS PANE IN MAIN HOUSE WINDOWS				
Positive Stop (Not Analyzed)					
H1-EWPC-01A 551407481-0286	EXTERIOR WINDOW PANE CAULKING-GREY - BETWEEN WINDOW FRAME AND GLASS PANE ON EXTERIOR OF MAIN HOUSE WINDOWS	Gray Non-Fibrous Homogeneous	98.4	None	1.6% Chrysotile
H1-EWPC-01B 551407481-0287	EXTERIOR WINDOW PANE CAULKING-GREY - BETWEEN WINDOW FRAME AND GLASS PANE ON EXTERIOR OF MAIN HOUSE WINDOWS				
Positive Stop (Not Analyzed)					
H1-EWPC-01C 551407481-0288	EXTERIOR WINDOW PANE CAULKING-GREY - BETWEEN WINDOW FRAME AND GLASS PANE ON EXTERIOR OF MAIN HOUSE WINDOWS				
Positive Stop (Not Analyzed)					
H1-RP-01A 551407481-0302	ROOFING PAPER-BLACK - ROOF(CONCEALED UNDER WOOD SHINGLES)	Brown Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (2)

Nicole Yeo (14)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

**Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM
via EPA 600/R-93/116 section 2.3**

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H1-RP-01B 551407481-0303	ROOFING PAPER-BLACK - ROOF(CONCEALED UNDER WOOD SHINGLES)	Brown Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H1-RP-01C 551407481-0304	ROOFING PAPER-BLACK - ROOF(CONCEALED UNDER WOOD SHINGLES)	Brown Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (2)

Nicole Yeo (14)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H1-HS-01A 551407481-0268	HEAT SHIELD-SILVER - INSIDE ROUND INCANDESCENT LIGHT FIXTURE ON THE MAIN LEVEL	Gray/Silver Fibrous Homogeneous		55% Non-fibrous (other)	45% Chrysotile
H1-HS-01B 551407481-0269	HEAT SHIELD-SILVER - INSIDE ROUND INCANDESCENT LIGHT FIXTURE ON THE MAIN LEVEL				Stop Positive (Not Analyzed)
H1-HS-01C 551407481-0270	HEAT SHIELD-SILVER - INSIDE ROUND INCANDESCENT LIGHT FIXTURE ON THE MAIN LEVEL				Stop Positive (Not Analyzed)
H1-HS-02A 551407481-0271	HEAT SHIELD-SILVER - INSIDE ROUND INCANDESCENT LIGHT FIXTURE IN BASEMENT ROOM 4	Gray/Silver Fibrous Homogeneous		55% Non-fibrous (other)	45% Chrysotile

Analyst(s)

Arabee Sathiseelan (16)

Jon Delos Santos (8)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H1-HS-02B 551407481-0272	HEAT SHIELD-SILVER - INSIDE ROUND INCANDESCENT LIGHT FIXTURE IN BASEMENT ROOM 4				Stop Positive (Not Analyzed)
H1-HS-02C 551407481-0273	HEAT SHIELD-SILVER - INSIDE ROUND INCANDESCENT LIGHT FIXTURE IN BASEMENT ROOM 4				Stop Positive (Not Analyzed)
H1-FS-01A 551407481-0289	FIRE STOP-GREY - AROUND FURNACE EXHAUST PENETRATION IN THE CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
H1-FS-01B 551407481-0290	FIRE STOP-GREY - AROUND FURNACE EXHAUST PENETRATION IN THE CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (16)

Jon Delos Santos (8)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
 CustomerID: 55JACQ30N
 CustomerPO: 144901924.801
 ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
 Fax: (604) 436-3752
 Received: 10/10/14 11:01 AM
 Analysis Date: 10/17/2014
 Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H1-FS-01C 551407481-0291	FIRE STOP- GREY - AROUND FURNACE EXHAUST PENETRATION IN THE CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
H1-CTC-01A 551407481-0292	CEILING TEXTURE COAT- WHITE - LIVING ROOM	White Non-Fibrous Homogeneous		97% Non-fibrous (other)	3% Chrysotile
H1-CTC-01B 551407481-0293	CEILING TEXTURE COAT- WHITE - KITCHEN	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
H1-CTC-01C 551407481-0294	CEILING TEXTURE COAT- WHITE - HALLWAY	Tan/White Non-Fibrous Homogeneous		99% Non-fibrous (other)	1% Chrysotile
H1-CTC-01D 551407481-0295	CEILING TEXTURE COAT- WHITE - ROOM 2	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
H1-CTC-01E 551407481-0296	CEILING TEXTURE COAT- WHITE - ROOM 3	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
H1-DJC-01A 551407481-0297	DRYWALL JOINT COMPOUND - DINING ROOM	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (16)

Jon Delos Santos (8)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
 CustomerID: 55JACQ30N
 CustomerPO: 144901924.801
 ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
 Fax: (604) 436-3752
 Received: 10/10/14 11:01 AM
 Analysis Date: 10/17/2014
 Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos	
			% Fibrous	% Non-Fibrous	% Type	
H1-DJC-01B 551407481-0298	DRYWALL JOINT COMPOUND - HALLWAY	Tan Non-Fibrous Homogeneous		98% Non-fibrous (other)	2%	Chrysotile
H1-DJC-01C 551407481-0299	DRYWALL JOINT COMPOUND - LIVING ROOM	Tan Non-Fibrous Homogeneous		98% Non-fibrous (other)	2%	Chrysotile
H1-DJC-01D 551407481-0300	DRYWALL JOINT COMPOUND - HALLWAY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	<1%	Chrysotile
H1-DJC-01E 551407481-0301	DRYWALL JOINT COMPOUND - ROOM 3	White Non-Fibrous Homogeneous		100% Non-fibrous (other)		None Detected
H1-CT-01A 551407481-0305	WHITE 1'X1' CEILING TILE - BRUSH STROKES PATTERN - BASEMENT ROOM 6	Brown/White Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (other)		None Detected
H1-CT-01B 551407481-0306	WHITE 1'X1' CEILING TILE - BRUSH STROKES PATTERN - BASEMENT ROOM 6	Tan/White Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (other)		None Detected

Analyst(s)

Arabee Sathiseelan (16)

Jon Delos Santos (8)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
 CustomerID: 55JACQ30N
 CustomerPO: 144901924.801
 ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
 Fax: (604) 436-3752
 Received: 10/10/14 11:01 AM
 Analysis Date: 10/17/2014
 Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	<u>Non-Asbestos</u>		<u>Asbestos</u>
			% Fibrous	% Non-Fibrous	% Type
H1-CT-01C 551407481-0307	WHITE 1'X1' CEILING TILE-BRUSH STROKES PATTERN - BASEMENT ROOM 6	Brown/White Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected
H1-CT-02A 551407481-0308	WHITE 2'X6' CEILING TILE - BASEMENT ROOM 4	Tan/White Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (other)	None Detected
H1-CT-02B 551407481-0309	WHITE 2'X6' CEILING TILE - BASEMENT ROOM 4	Brown/White Fibrous Homogeneous	80% Cellulose	20% Non-fibrous (other)	None Detected
H1-CT-02C 551407481-0310	WHITE 2'X6' CEILING TILE - BASEMENT ROOM 4	Brown/White Non-Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected
H1-BM-01A 551407481-0311	BRICK MORTAR - BASEMENT ON CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
H1-BM-01B 551407481-0312	BRICK MORTAR - BASEMENT ON CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiaselan (16)

Jon Delos Santos (8)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H1-BM-01C 551407481-0313	BRICK MORTAR - BASEMENT ON CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (16)

Jon Delos Santos (8)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: **144901924.801****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
H1-P-01	551407512-0050 Site: WHITE COLOUR Desc: INTERIOR WALLS	10/16/2014		<90 ppm
H1-P-02	551407512-0051 Site: GREY COLOUR Desc: BASEMENT FLOORS	10/16/2014		880 ppm
H1-P-03	551407512-0052 Site: WHITE COLOUR Desc: EXTERIOR WALLS	10/16/2014		22000 ppm
H1-P-04	551407512-0053 Site: BROWN COLOUR Desc: EXTERIOR TRIM	10/16/2014		13000 ppm
H1-P-05	551407512-0054 Site: PEACH COLOUR Desc: GARAGE WALLS	10/16/2014		<90 ppm
H1-P-06	551407512-0055 Site: GREEN COLOUR Desc: THRUWAY DOOR	10/16/2014		51000 ppm


Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 10/16/2014 16:56:34

DRAFT

Appendix M
Findings and Recommendations – House 2

DRAFT

M-4.0 FINDINGS – HOUSE 2

House 2 was reportedly constructed in 1959.

Stantec understands that demolition of House 2 has been proposed.

The results of the assessment for each of the considered hazardous materials within House 2 are provided in the following sub-sections.

Floor plan drawings for House 2, which include locations of the samples collected during this assessment and locations of identified hazardous building materials (where practical), are attached to this Appendix.

M-4.1 Asbestos

Stantec identified and sampled various suspected ACMs, including the following:

- Heat shields in incandescent light fixtures
- Sheet flooring
- Vinyl floor tile and associated mastic
- Fire stop
- Drywall joint compound
- Pipe sealant
- Window pane and frame caulking
- Ceiling tiles
- Door caulking
- Roofing paper
- Brick mortar
- Roofing shingle.

43 samples of the above-noted suspected ACMs were collected and submitted to EMSL for analysis of asbestos content and nature.

A summary of the sample types, locations and analytical results is presented in Table M-4.1.1, below. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are attached at the end of this Appendix.

It should be noted that several bulk samples of vinyl floor tile were further separated into layers during laboratory analysis.

**Table M-4.1.1 Suspected ACM Sample Collection and Analysis Summary
House 2, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
H2-HS-01A	Heat shield – Silver	Inside round incandescent light fixture	45% Chrysotile
H2-HS-01B	Heat shield – Silver	Inside round incandescent light fixture	Stop Positive
H2-HS-01C	Heat shield – Silver	Inside round incandescent light fixture	Stop Positive
H2-SF-01	Vinyl sheet flooring – Beige	Kitchen	None Detected
H2-SF-02	Vinyl sheet flooring – Pink squares	Bathroom	None Detected
H2-SF-03	Vinyl sheet flooring – Tan squares	Mudroom	15.6% Chrysotile
H2-FT-01	9"x9" vinyl floor tile – Green	Basement room 3	0.57% Chrysotile
H2-FT-01-Mastic	Floor tile mastic	Basement room 3	Insufficient Material
H2-FT-02	9"x9" vinyl floor tile – White	Basement room 3	0.71% Chrysotile
H2-FT-02-Mastic	Floor tile mastic	Basement room 3	Insufficient Material
H2-FS-01A	Fire stop – Grey	Around furnace exhaust penetration in the chimney	None Detected
H2-FS-01B	Fire stop – Grey	Around furnace exhaust penetration in the chimney	None Detected
H2-FS-01C	Fire stop – Grey	Around furnace exhaust penetration in the chimney	None Detected
H2-DJC-01A	Drywall joint compound	Living room	2% Chrysotile
H2-DJC-01B	Drywall joint compound	Main floor room 2	2% Chrysotile
H2-DJC-01C	Drywall joint compound	Hallway	3% Chrysotile
H2-DJC-01D	Drywall joint compound	Hallway	<1% Chrysotile
H2-DJC-01E	Drywall joint compound	Front entrance hallway	<1% Chrysotile
H2-PS-01A	Pipe sealant – Grey	Inside pipe fittings in the basement	1.1% Chrysotile
H2-PS-01B	Pipe sealant – Grey	Inside pipe fittings in the basement	Stop Positive
H2-PS-01C	Pipe sealant – Grey	Inside pipe fittings in the basement	Stop Positive
H2-WPC-01A	Window pane caulking – Grey	Between window frame and glass pane on inside of windows	2.3% Chrysotile

**Table M-4.1.1 Suspected ACM Sample Collection and Analysis Summary
House 2, Haines Junction, YT**



Sample Number	Material Description	Sample Location	Result (%/type asbestos)
H2-WPC-01B	Window pane caulking – Grey	Between window frame and glass pane on inside of windows	Stop Positive
H2-WPC-01C	Window pane caulking – Grey	Between window frame and glass pane on inside of windows	Stop Positive
H2-WPC-02A	Window pane caulking – Grey	Between window frame and glass pane on outside of windows	1.0% Chrysotile
H2-WPC-02B	Window pane caulking – Grey	Between window frame and glass pane on outside of windows	Stop Positive
H2-WPC-02C	Window pane caulking – Grey	Between window frame and glass pane on outside of windows	Stop Positive
H2-CT-01A	White 1'x1' ceiling tile	Mudroom	None Detected
H2-CT-01B	White 1'x1' ceiling tile	Mudroom	None Detected
H2-CT-01C	White 1'x1' ceiling tile	Mudroom	None Detected
H2-WFC-01A	Window frame caulking - White	Between window frame and building on the exterior	None Detected
H2-WFC-01B	Window frame caulking - White	Between window frame and building on the exterior	None Detected
H2-WFC-01C	Window frame caulking - White	Between window frame and building on the exterior	None Detected
H2-DC-01A	Door caulking – White	Around doors on the exterior	None Detected
H2-DC-01B	Door caulking – White	Around doors on the exterior	None Detected
H2-DC-01C	Door caulking – White	Around doors on the exterior	None Detected
H2-RP-01A	Roofing paper – Black	Roof (concealed under wood shingles)	None Detected
H2-RP-01B	Roofing paper – Black	Roof (concealed under wood shingles)	None Detected
H2-RP-01C	Roofing paper – Black	Roof (concealed under wood shingles)	None Detected
H2-BM-01A	Brick mortar	Basement chimney	None Detected
H2-BM-01B	Brick mortar	Basement chimney	None Detected
H2-BM-01C	Brick mortar	Basement chimney	None Detected
H2-RS-01A	Roof shingle – Tar and gravel	Roof (concealed under wood shingles and roofing paper)	None Detected
H2-RS-01B	Roof shingle – Tar and gravel	Roof (concealed under wood shingles and roofing paper)	None Detected
H2-RS-01C	Roof shingle – Tar and gravel	Roof (concealed under wood shingles and roofing paper)	None Detected

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of suspected ACM sample analytical results, the materials presented in Table M-4.1.2, below were identified as ACMs.

**Table M-4.1.2 Summary of Identified ACMs
House 2, Haines Junction, YT**

Identified ACM Description and Condition Information		Photo
Heat shields (foil covered) inside round incandescent light fixtures throughout		
Friability	Friable	
Condition	Good	
Content	45% Chrysotile	
Tan squares vinyl sheet flooring in the mudroom		
Friability	Friable during removal	
Condition	Good	
Content	15.6% Chrysotile	
9"x9" vinyl floor tile, both green and white, in basement room 3		
Friability	Non-friable	
Condition	Good	
Content	0.57 – 0.71% Chrysotile	

**Table M-4.1.2 Summary of Identified ACMs
House 2, Haines Junction, YT**

Identified ACM Description and Condition Information		Photo
Drywall joint compound throughout		
Friability	Non-friable in situ can be made friable during removal	
Condition	Good	
Content	<1 - 3% Chrysotile	
Grey pipe sealant inside cast iron bell fittings in the basement		No photo
Friability	Non-friable	
Condition	Good	
Content	1.1% Chrysotile	
Grey window pane caulking between window frame and glass panes throughout		
Friability	Non-friable	
Condition	Good	
Content	1.0 – 2.3% Chrysotile	

M-4.2 Lead

Lead is expected to be present in the following materials:

- Solder used on copper domestic pipes
- Caulking on bell fittings for cast iron drainage pipes
- Electrical equipment (i.e. batteries for emergency lighting/signage).


With respect to paint, 6 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table M-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

**Table M-4.2.1 Suspected LCP Sample Collection and Analysis Summary
House 2, Haines Junction, YT**

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
H2-P-01	Basement floors	Grey	1,500	Yes
H2-P-02	Basement furnace	Green	<160	No
H2-P-03	Interior walls	White	190	No
H2-P-04	Exterior trim	Brown	<90	No
H2-P-05	Exterior walls	White	<180	No
H2-P-06	Front porch	Grey	<90	No

Based on our observations and on our interpretations of suspected LCP sample analytical results, the paint application presented in Table M-4.2.2, below was identified as an LCP.

**Table M-4.2.2 Summary of Identified LCPs
House 2, Haines Junction, YT**

Identified LCP Description	Photo
Grey paint on the basement floor. This paint was observed to be in fair condition (minimal bubbling, flaking or peeling).	

M-4.3 Polychlorinated Biphenyls

Two fluorescent light fixtures were observed. The label from one fluorescent light ballast was inspected and based on the label information it is suspected to contain PCBs. Both fluorescent light fixtures are expected to have PCB-containing ballasts.

M-4.4 Mercury

One (1) mercury-containing thermostat was observed in the living room, as indicated on the attached floor plan drawings.

Mercury vapour is expected to be present in fluorescent light bulbs/tubes throughout.

M-4.5 Mould

Moisture damage and mould were observed as summarized in Table M-4.5, below.

**Table M-4.5: Summary of Identified Mould and/or Moisture-Impacted Materials
House 2, Haines Junction, YT**

Identified Mould and/or Moisture Impacted Materials Description	Photo
Suspect mould growth was observed on the walls of basement room 3.	
Mould growth was identified on drywall in the stairwell corner (sample M-01).	
Mould growth was identified on the wood cove base in the basement (sample M-02).	

Two (2) bulk samples were collected from building materials exhibiting suspect mould growth, and submitted to Sporometrics for analysis of the mould forms present. The analytical results for the samples collected are summarized below. A copy of the certificate of analysis provided by Sporometrics for the suspected mould bulk samples (surface) submitted is attached to this Appendix.

- Bulk sample no. M-01 was collected from drywall in the stairwell corner. The analytical results for the sample collected indicated that *Aspergillus/Penicillium* spores and *Cladosporium* mycelia and spores were detected on the sample. These results are indicative of mould growth on the material tested.
- Bulk sample no. M-02 was collected from wood cove base in the basement. The analytical results for the sample collected indicated that *Fusarium* spores as well as *Aspergillus* and *Cladosporium* mycelia and spores were detected on the sample. These results are indicative of mould growth on the material tested.

M-4.6 Ozone-Depleting Substances

No suspected ODS-containing equipment was observed during the assessment.

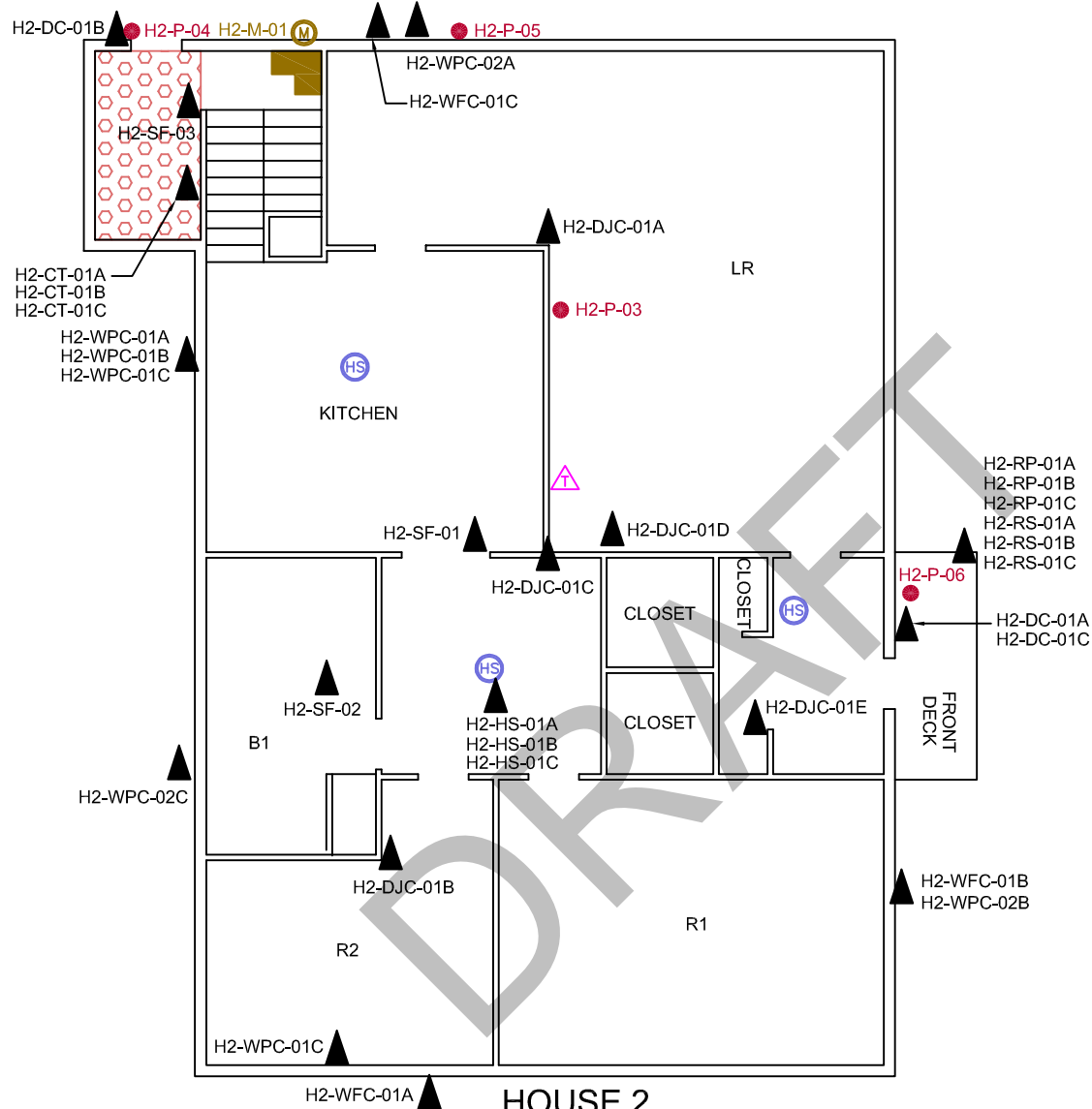
M-4.7 Silica

Silica may be present in concrete, cement, and ceramic tiles observed in various locations throughout.

M-5.0 BUILDING-SPECIFIC RECOMMENDATIONS

In general, identified hazardous building materials should be handled in accordance with the recommendations for demolition that are provided in Section 5 of the main body of this report.

DRAFT



LEGEND

- BULK SAMPLE
- PAINT CHIP SAMPLE
- BULK MOULD SAMPLES
- ASBESTOS-CONTAINING SHEET FLOORING
- MOULD IMPACTED MATERIALS
- ASBESTOS-CONTAINING INCANDESCENT LIGHT HEAT SHIELD
- MERCURY-CONTAINING THERMOSTAT

- NOTES:**
1. GREY WINDOW PANE CAULKING BETWEEN WINDOW FRAMES AND GLASS PANES THROUGHOUT IS ACM.
 2. PIPE SEALANT IN CAST IRON BELL FITTINGS THROUGHOUT IS ACM.
 3. DRYWALL JOINT COMPOUND THROUGHOUT IS ACM.
 4. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

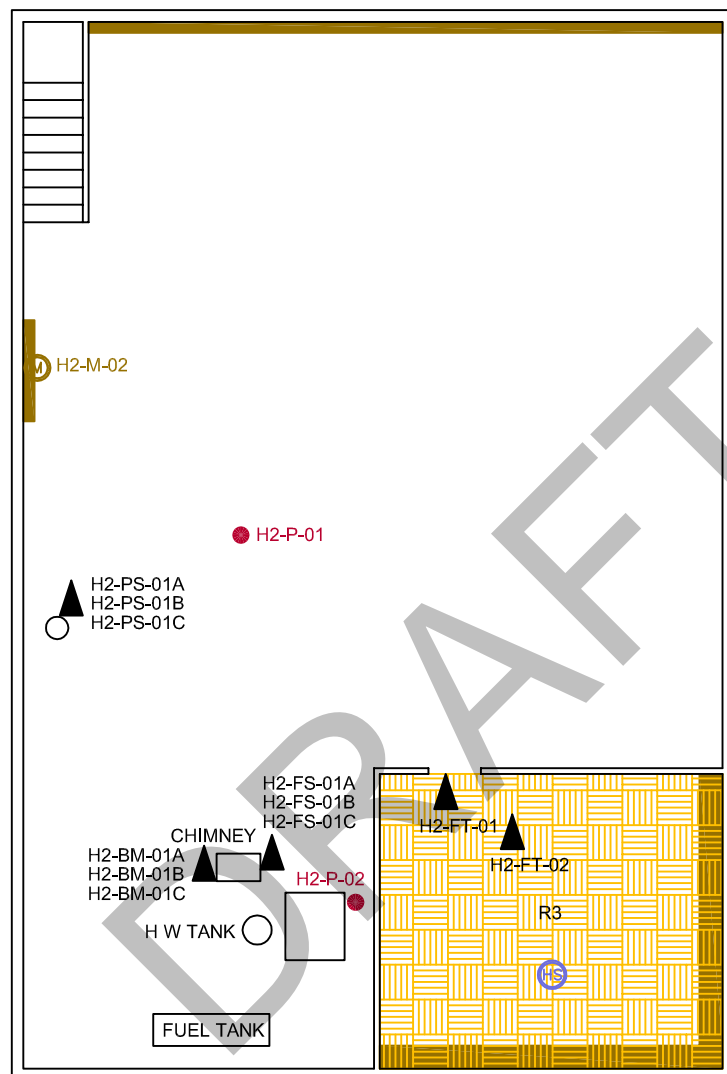
Client: PARKS CANADA

Project No.:	144901924
Scale:	NTS
Date:	14/11/18
Dwn. By:	CD _{VM} SL2014110117
App'd By:	TW

Dwg. No.:

M1





HOUSE 2
BASEMENT

- NOTES:**
1. GREY WINDOW PANE CAULKING BETWEEN WINDOW FRAMES AND GLASS PANES THROUGHOUT IS ACM.
 2. PIPE SEALANT IN CAST IRON BELL FITTINGS THROUGHOUT IS ACM.
 3. DRYWALL JOINT COMPOUND THROUGHOUT IS ACM.
 4. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

LEGEND

- BULK SAMPLE
- PAINT CHIP SAMPLE
- BULK MOULD SAMPLES
- ASBESTOS-CONTAINING FLOOR TILE
- MOULD IMPACTED MATERIALS
- ASBESTOS-CONTAINING INCANDESCENT LIGHT HEAT SHIELD



**FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS
AND BULK SAMPLE LOCATIONS**

HAINES JUNCTION, YT

Client: PARKS CANADA

Project No.:	144901924
Scale:	NTS
Date:	14/11/18
Dwn. By:	CD _{VM} SL2014110118
App'd By:	TW

Dwg. No.:

M2



**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: **144901924.801**

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H2-SF-01 551407481-0317	VINYL SHEET FLOORING- BEIGE - KITCHEN	Yellow/Beige Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H2-SF-02 551407481-0318	VINYL SHEET FLOORING- PINK SQUARES - BATHROOM	Yellow/Beige Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H2-SF-03 551407481-0319	VINYL SHEET FLOORING- TAN SQUARES - MUDROOM	White/Yellow Non-Fibrous Homogeneous	84.4	None	15.6% Chrysotile
H2-FT-01 551407481-0320	9"X9" VINYL FLOOR TILE- GREEN - BASEMENT ROOM 3	Blue Non-Fibrous Homogeneous	99.4	None	0.57% Chrysotile
H2-FT-01-Mastic 551407481-0320A	9"X9" VINYL FLOOR TILE- GREEN - BASEMENT ROOM 3				
Insufficient Material					
H2-FT-02 551407481-0321	9"X9" VINYL FLOOR TILE- WHITE - BASEMENT ROOM 3	Gray Non-Fibrous Homogeneous	99.3	None	0.71% Chrysotile
H2-FT-02-Mastic 551407481-0321A	9"X9" VINYL FLOOR TILE- WHITE - BASEMENT ROOM 3				
Insufficient Material					
H2-PS-01A 551407481-0330	PIPE SEALANT-GREY - INSIDE PIPE FITTINGS IN THE BASEMENT	Gray/Black Non-Fibrous Homogeneous	98.9	None	1.1% Chrysotile

Analyst(s)

Jon Delos Santos (4)

Nicole Yeo (16)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H2-PS-01B 551407481-0331	PIPE SEALANT-GREY - INSIDE PIPE FITTINGS IN THE BASEMENT				
Positive Stop (Not Analyzed)					
H2-PS-01C 551407481-0332	PIPE SEALANT-GREY - INSIDE PIPE FITTINGS IN THE BASEMENT				
Positive Stop (Not Analyzed)					
H2-WPC-01A 551407481-0333	WINDOW PANE CAULKING- GREY - BETWEEN WINDOW FRAME AND GLASS PANE ON INSIDE OF WINDOWS	Brown/Gray Non-Fibrous Homogeneous	97.7	None	2.3% Chrysotile
H2-WPC-01B 551407481-0334	WINDOW PANE CAULKING- GREY - BETWEEN WINDOW FRAME AND GLASS PANE ON INSIDE OF WINDOWS				
Positive Stop (Not Analyzed)					
H2-WPC-01C 551407481-0335	WINDOW PANE CAULKING- GREY - BETWEEN WINDOW FRAME AND GLASS PANE ON INSIDE OF WINDOWS				
Positive Stop (Not Analyzed)					

Analyst(s)

Jon Delos Santos (4)

Nicole Yeo (16)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H2-WPC-02A 551407481-0336	WINDOW PANE CAULKING-GREY - BETWEEN WINDOW FRAME AND GLASS PANE ON OUTSIDE OF WINDOWS	Black Non-Fibrous Homogeneous	99.0	None	1.0% Chrysotile
H2-WPC-02B 551407481-0337	WINDOW PANE CAULKING-GREY - BETWEEN WINDOW FRAME AND GLASS PANE ON OUTSIDE OF WINDOWS				
Positive Stop (Not Analyzed)					
H2-WPC-02C 551407481-0338	WINDOW PANE CAULKING-GREY - BETWEEN WINDOW FRAME AND GLASS PANE ON OUTSIDE OF WINDOWS				
Positive Stop (Not Analyzed)					
H2-WFC-01A 551407481-0342	WINDOW FRAME CAULKING-WHITE - BETWEEN WINDOW FRAME AND BUILDING ON THE EXTERIOR	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H2-WFC-01B 551407481-0343	WINDOW FRAME CAULKING-WHITE - BETWEEN WINDOW FRAME AND BUILDING ON THE EXTERIOR	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (4)

Nicole Yeo (16)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H2-WFC-01C 551407481-0344	WINDOW FRAME CAULKING-WHITE - BETWEEN WINDOW FRAME AND BUILDING ON THE EXTERIOR	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H2-DC-01A 551407481-0345	DOOR CAULKING-WHITE - AROUND DOORS ON THE EXTERIOR	Brown/White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H2-DC-01B 551407481-0346	DOOR CAULKING-WHITE - AROUND DOORS ON THE EXTERIOR	Brown/White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H2-DC-01C 551407481-0347	DOOR CAULKING-WHITE - AROUND DOORS ON THE EXTERIOR	Brown/White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H2-RP-01A 551407481-0348	ROFING PAPER-BLACK - ROOF(CONCEALED UNDER WOOD SHINGLES)	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
H2-RP-01B 551407481-0349	ROFING PAPER-BLACK - ROOF(CONCEALED UNDER WOOD SHINGLES)	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
H2-RP-01C 551407481-0350	ROFING PAPER-BLACK - ROOF(CONCEALED UNDER WOOD SHINGLES)	Brown Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (4)

Nicole Yeo (16)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM
via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H2-RS-01A 551407481-0354	ROOF SHINGLE-TAR AND GRAVEL - ROOOF(CONCEALED UNDER WOOD SHINGLES AND ROOFING PAPER)	Brown/White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H2-RS-01B 551407481-0355	ROOF SHINGLE-TAR AND GRAVEL - ROOOF(CONCEALED UNDER WOOD SHINGLES AND ROOFING PAPER)	Brown/Various Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H2-RS-01C 551407481-0356	ROOF SHINGLE-TAR AND GRAVEL - ROOOF(CONCEALED UNDER WOOD SHINGLES AND ROOFING PAPER)	Various/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (4)

Nicole Yeo (16)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H2-HS-01A 551407481-0314	HEAT SHIELD-SILVER - INSIDE ROUND INCANDESCENT LIGHT FIXTURE	Gray Fibrous Homogeneous		55% Non-fibrous (other)	45% Chrysotile
H2-HS-01B 551407481-0315	HEAT SHIELD-SILVER - INSIDE ROUND INCANDESCENT LIGHT FIXTURE				Stop Positive (Not Analyzed)
H2-HS-01C 551407481-0316	HEAT SHIELD-SILVER - INSIDE ROUND INCANDESCENT LIGHT FIXTURE				Stop Positive (Not Analyzed)
H2-FS-01A 551407481-0322	FIRE STOP-GREY - AROUND FURNACE EXHAUST PENETRATION IN THE CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
H2-FS-01B 551407481-0323	FIRE STOP-GREY - AROUND FURNACE EXHAUST PENETRATION IN THE CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (10)

Jon Delos Santos (5)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
 CustomerID: 55JACQ30N
 CustomerPO: 144901924.801
 ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
 Fax: (604) 436-3752
 Received: 10/10/14 11:01 AM
 Analysis Date: 10/17/2014
 Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H2-FS-01C 551407481-0324	FIRE STOP- GREY - AROUND FURNACE EXHAUST PENETRATION IN THE CHIMNEY	Gray Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
H2-DJC-01A 551407481-0325	DRYWALL JOINT COMPOUND - LIVING ROOM	Gray Non-Fibrous Homogeneous		98% Non-fibrous (other)	2% Chrysotile
H2-DJC-01B 551407481-0326	DRYWALL JOINT COMPOUND - MAIN FLOOR ROOM 2	Gray Non-Fibrous Homogeneous		98% Non-fibrous (other)	2% Chrysotile
H2-DJC-01C 551407481-0327	DRYWALL JOINT COMPOUND - HALLWAY	Gray Non-Fibrous Homogeneous		97% Non-fibrous (other)	3% Chrysotile
H2-DJC-01D 551407481-0328	DRYWALL JOINT COMPOUND - HALLWAY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	<1% Chrysotile
H2-DJC-01E 551407481-0329	DRYWALL JOINT COMPOUND - FRONT ENTRANCE HALLWAY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	<1% Chrysotile
H2-CT-01A 551407481-0339	WHITE 1'X1' CEILING TILE - MUDROOM	Tan/White Fibrous Homogeneous	85% Cellulose	15% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (10)

Jon Delos Santos (5)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H2-CT-01B 551407481-0340	WHITE 1'X1' CEILING TILE - MUDROOM	Tan/White Fibrous Homogeneous	85% Cellulose	15% Non-fibrous (other)	None Detected
H2-CT-01C 551407481-0341	WHITE 1'X1' CEILING TILE - MUDROOM	Brown/White Non-Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected
H2-BM-01A 551407481-0351	BRICK MORTAR - BASEMENT CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
H2-BM-01B 551407481-0352	BRICK MORTAR - BASEMENT CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
H2-BM-01C 551407481-0353	BRICK MORTAR - BASEMENT CHIMNEY	Gray Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (10)

Jon Delos Santos (5)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: **144901924.801****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
H2-P-01	551407512-0056 Site: GREY COLOUR Desc: BASEMENT FLOORS	10/16/2014		1500 ppm
H2-P-02	551407512-0057 Site: GREEN COLOUR Desc: BASEMENT FURNACE Insufficient sample to reach reporting limit.	10/16/2014		<160 ppm
H2-P-03	551407512-0058 Site: WHITE COLOUR Desc: INTERIOR WALLS	10/16/2014		190 ppm
H2-P-04	551407512-0059 Site: BROWN COLOUR Desc: EXTERIOR TRIM	10/16/2014		<90 ppm
H2-P-05	551407512-0060 Site: WHITE COLOUR Desc: EXTERIOR WALLS Insufficient sample to reach reporting limit.	10/16/2014		<180 ppm
H2-P-06	551407512-0061 Site: GREY COLOUR Desc: FRONT PORCH	10/16/2014		<90 ppm


Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 10/16/2014 16:57:57

DRAFT



RESULTS OF LABORATORY ANALYSES:

JOB NO. 23847.00

To:	Keith Irwin	Date of report:	2014/10/27
Company:	Stantec Consulting Ltd. - Burnaby, BC	Date of sampling:	2014/09/24
Client Project:	144901924.803	Analyst:	Yaima Arocha-Rosete
Client Address:	500-4730 Kingsway, Burnaby, BC V5H 0C6	Date Received:	2014/10/22

BULK / TAPELIFT / BIOTAPE SAMPLE NO.:		M-01	M-02	-	-	-	-
Location:		House 2 Stairwell - Drywall	House 2 Basement - Wood Cove Base				
Serial #:		N/A	N/A				
Expiry date:		N/A	N/A				
FUNGAL IDENTIFICATION: ^a ELEMENTS:		MICROSCOPIC OBSERVATIONS ^b (RATING ^c):					
<i>Aspergillus / Penicillium</i> NOS	mycelia	-	-				
	spores	2+	-				
<i>Aspergillus</i> NOS	mycelia	-	1+				
	spores	-	2+				
<i>Cladosporium</i> NOS	mycelia	2+	1+				
	spores	3+	2+				
<i>Fusarium</i> NOS	mycelia	-	-				
	spores	-	3+				
OTHER OBSERVATIONS:							
background rating		3+	3+				
bacteria NOS		-	3+				
FUNGAL GROWTH INDICATED? ^d :		Y	Y				

AIHA LAP, LLC LAB NO: 171117

Samples were received in satisfactory condition and tested in accordance with SOP 2.1.2.2. These results relate only to the samples tested.

^a NOS = not otherwise specified.

^b Mounted in lactofuchsin / lactic acid, or other medium as required, with 50-100 fields examined in bright field microscopy at 400x magnification.

^c - = not detected; tr = 10⁰ - 10¹ elements in total; 1+ = 10⁰ - 10¹ elements in each of ~25% fields; 2+ = 10¹ - 10² elements in each of ~50% fields; 3+ = 10² - 10³ elements in each of ~75% fields; 4+ => 75% fields obscured.

^d Possibility of fungal growth *in situ* based on microscopic observations; Y = yes; N = no; ? = ambiguous. For explanation please refer to the final page of this report.



RESULTS OF LABORATORY ANALYSES:

JOB NO. 23847.00

To:	Keith Irwin	Date of report:	2014/10/27
Company:	Stantec Consulting Ltd. - Burnaby, BC	Date of sampling:	2014/09/24
Client Project:	144901924.803	Analyst:	Yaima Arocha-Rosete
Client Address:	500-4730 Kingsway, Burnaby, BC V5H 0C6	Date Received:	2014/10/22

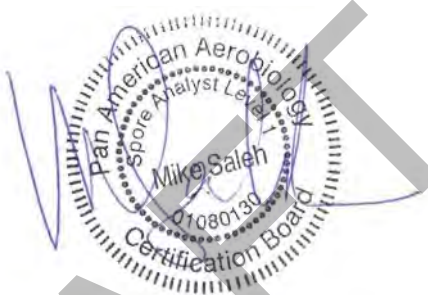
END OF REPORT

Examined By

Released By



Yaima Arocha-Rosete, PhD
Analyst



Mike Saleh, MHSc
Analyst

DRAFT





RESULTS OF LABORATORY ANALYSES:

JOB NO. 23847.00

To:	Keith Irwin	Date of report:	2014/10/27
Company:	Stantec Consulting Ltd. - Burnaby, BC	Date of sampling:	2014/09/24
Client Project:	144901924.803	Analyst:	Yaima Arocha-Rosete
Client Address:	500-4730 Kingsway, Burnaby, BC V5H 0C6	Date Received:	2014/10/22

Guidance on the interpretation of microscopic findings Samples of bulk materials as well as tape lift samples from potentially contaminated surfaces may be examined microscopically to assess the potential of these materials to be supporting fungal growth and serving as indoor fungal amplification sites. Guidelines on indoor microbial contamination proposed by Health Canada (HC. 1995. *Indoor air quality in office buildings: A technical guide*. Federal-Provincial Advisory Committee on Environmental and Occupational Health. Ottawa: Environmental Health Directorate 93-EHD-166 rev.) state unambiguously that indoor, active fungal growth sites are unacceptable regardless of the extent to which these amplifiers impact on the indoor airborne spore-load. Fungal spores are commonly borne on air currents and settle on flat surfaces as a matter of course. Thus, the observation of fungal spores alone is insufficient to characterize a specimen as a growth site. This judgment primarily requires the microscopic visualization of fungal filaments ("hyphae", or *en masse*, "mycelia"). Additionally, the identification of different kinds of fungi usually requires the observation of spores (e.g. conidia, ascospores, etc.) along with the organs responsible for their production (e.g. conidiophores, ascomata, etc.). However, the latter rarely persist long after the spores have been produced, making definitive identification difficult or impossible in aged specimens. The rating system used by Sporometrics to score the frequency of structures observed microscopically is based on a 5-point assessment of 50-100 microscopic fields, usually taken at 400 x magnification. This system uses the following rating criteria:

Descriptor	Criteria (based on 50-100 fields)	Interpretation of growth <i>in situ</i> according to observations:	
		Spores alone	Spores and spore-bearing structures or mycelia
tr	10 ⁰ -10 ¹ elements in total	growth not indicated	growth not indicated
1+	10 ⁰ -10 ¹ elements per ~25% fields	unclear	growth indicated
2+	10 ¹ -10 ² elements per ~50% fields	growth indicated	growth indicated
3+	10 ² -10 ³ elements per ~75% fields	growth indicated	growth indicated
4+	> 75% fields obscured by elements	growth indicated	growth indicated

DRAFT

Appendix N
Findings and Recommendations – House 2 Garage

DRAFT

N-4.0 FINDINGS – HOUSE 2 GARAGE

The House 2 Garage was reportedly constructed in 1980.

Stantec understands that demolition of the House 2 Garage has been proposed.

The results of the assessment for each of the considered hazardous materials within the House 2 Garage are provided in the following sub-sections.

Floor plan drawings for the House 2 Garage, which include locations of the samples collected during this assessment and locations of identified hazardous building materials (where practical), are attached to this Appendix.

N-4.1 Asbestos

Stantec identified and sampled various suspected ACMs, including the following:

- Wall mastic
- Window pane caulking
- Building paper.

9 samples of the above-noted suspected ACMs were collected and submitted to EMSL for analysis of asbestos content and nature.

A summary of the sample types, locations and analytical results is presented in Table N-4.1.1, below. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are attached at the end of this Appendix.

**Table N-4.1.1: Suspected ACM Sample Collection and Analysis Summary
House 2 Garage, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
H2G-WM-01A	Wall mastic – Cream	SW exterior	None Detected
H2G-WM-01B	Wall mastic – Cream	SW exterior	None Detected
H2G-WM-01C	Wall mastic – Cream	SW exterior	None Detected
H2G-WPC-01A	Window pane caulking – Yellow	Between window frame and glass pane	None Detected
H2G-WPC-01B	Window pane caulking – Yellow	Between window frame and glass pane	None Detected
H2G-WPC-01C	Window pane caulking – Yellow	Between window frame and glass pane	None Detected
H2G-BP-01A	Building paper – Black	Under siding	None Detected
H2G-BP-01B	Building paper – Black	Under siding	None Detected
H2G-BP-01C	Building paper – Black	Under siding	None Detected

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of suspected ACM sample analytical results, no ACMs were identified.

N-4.2 Lead

Typical potential lead-containing items (solder on wiring, in domestic water pipes and/or in the bell fittings of cast iron drain pipes; lead acid batteries associated with emergency exit signage, etc.) were not observed.

With respect to paint, 2 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table N-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

**Table N-4.2.1 Suspected LCP Sample Collection and Analysis Summary
House 2 Garage, Haines Junction, YT**

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
H2G-P-01	Floor	Grey colour	990	No
H2G-P-02	Interior walls	White colour	<90	No

Based on our observations and on our interpretations of suspected LCP sample analytical results, no LCPs were identified.

N-4.3 Polychlorinated Biphenyls

No suspected PCB-containing equipment was observed during the assessment.

N-4.4 Mercury

No suspected mercury-containing equipment was observed during the assessment.

N-4.5 Mould

No suspect mould or moisture impacted materials were observed during the assessment.

N-4.6 Ozone-Depleting Substances

No suspected ODS-containing equipment was observed during the assessment.

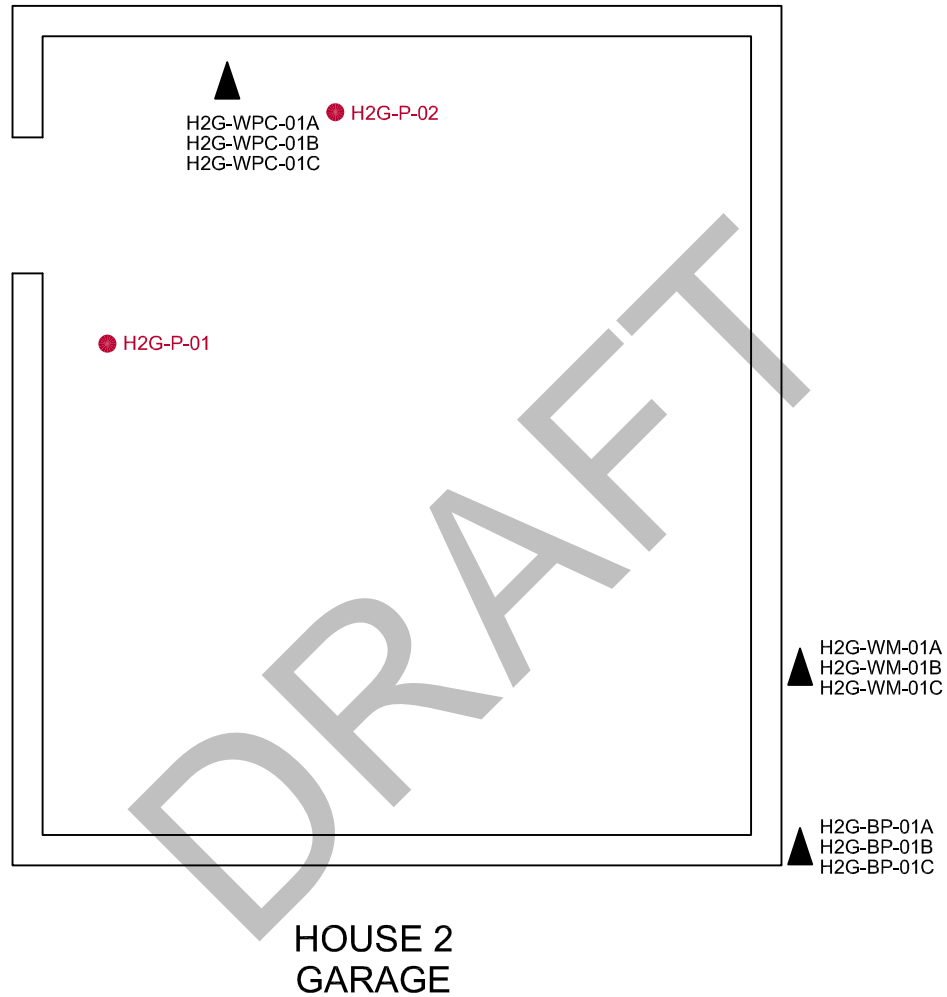
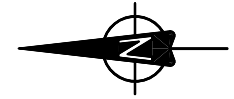
N-4.7 Silica

Silica may be present in concrete and cement observed in various locations throughout.

N-5.0 BUILDING-SPECIFIC RECOMMENDATIONS

In general, identified hazardous building materials should be handled in accordance with the recommendations for demolition that are provided in Section 5 of the main body of this report.

DRAFT



LEGEND

-  BULK SAMPLE
-  PAINT CHIP SAMPLE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

Client: PARKS CANADA

Project No.:	144901924
Scale:	NTS
Date:	14/11/18
Dwn. By:	CD _{VM} SL2014110119
App'd By:	TW

Dwg. No.:

N



DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: **144901924.801**

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H2G-WM-01A 551407481-0357	WALL MASTIC-CREAM - SW EXTERIOR	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H2G-WM-01B 551407481-0358	WALL MASTIC-CREAM - SW EXTERIOR	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H2G-WM-01C 551407481-0359	WALL MASTIC-CREAM - SW EXTERIOR	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H2G-WPC-01A 551407481-0360	WINDOW PANE CAULKING-YELLOW - BETWEEN WINDOW FRAME AND GLASS PANE	Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H2G-WPC-01B 551407481-0361	WINDOW PANE CAULKING-YELLOW - BETWEEN WINDOW FRAME AND GLASS PANE	Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H2G-WPC-01C 551407481-0362	WINDOW PANE CAULKING-YELLOW - BETWEEN WINDOW FRAME AND GLASS PANE	Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H2G-BP-01A 551407481-0363	BUILDING PAPER-BLACK - UNDER SIDING	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
H2G-BP-01B 551407481-0364	BUILDING PAPER-BLACK - UNDER SIDING	Brown Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (3)

Nicole Yeo (6)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

**Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM
via EPA 600/R-93/116 section 2.3**

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H2G-BP-01C 551407481-0365	BUILDING PAPER-BLACK - UNDER SIDING	Brown Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (3)

Nicole Yeo (6)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: 144901924.801

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

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
H2G-P-01	551407512-0062 Site: GREY COLOUR Desc: FLOOR	10/16/2014		990 ppm
H2G-P-02	551407512-0063 Site: WHITE COLOUR Desc: INTERIOR WALLS	10/16/2014		<90 ppm

DRAFT

Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 10/16/2014 16:59:19

DRAFT

Appendix O
Findings and Recommendations – House 3

DRAFT

O-4.0 FINDINGS – HOUSE 3

House 3 was reportedly constructed in 1959.

Stantec understands that demolition of House 3 has been proposed.

The results of the assessment for each of the considered hazardous materials within House 3 are provided in the following sub-sections.

Floor plan drawings for House 3, which include locations of the samples collected during this assessment and locations of identified hazardous building materials (where practical), are attached to this Appendix.

O-4.1 Asbestos

Stantec identified and sampled various suspected ACMs, including the following:

- Heat shield in incandescent light fixtures
- Sheet flooring
- Vinyl floor tile and associated mastic
- Drywall joint compound
- Window pane and frame caulking
- Fire stop
- Brick mortar.

26 samples of the above-noted suspected ACMs were collected and submitted to EMSL for analysis of asbestos content and nature.

A summary of the sample types, locations and analytical results is presented in Table O-4.1.1, below. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are attached at the end of this Appendix.

It should be noted that several bulk samples of vinyl floor tile were further separated into layers during laboratory analysis.

**Table O-4.1.1 Suspected ACM Sample Collection and Analysis Summary
House 3, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
H3-HS-01A	Heat shield – Silver	Inside round incandescent light fixture	None Detected
H3-HS-01B	Heat shield – Silver	Inside round incandescent light fixture	None Detected
H3-HS-01C	Heat shield – Silver	Inside round incandescent light fixture	None Detected
H3-SF-01	Vinyl sheet flooring – White with pink and green specs	Dining room	None Detected
H3-SF-02	Vinyl sheet flooring – Irregular stone pattern	Kitchen	None Detected
H3-SF-03	Vinyl sheet flooring – Tan	Kitchen (concealed under SF-03)	None Detected
H3-SF-04	Vinyl sheet flooring – Beige pebble pattern	Bathroom	None Detected
H3-FT-01	9"x9" vinyl floor tile – Red	Basement room 3	1.3% Chrysotile
H3-FT-01-Mastic	Floor tile mastic	Basement room 3	Insufficient Material
H3-FT-02	9"x9" vinyl floor tile – Beige	Basement room 3	1.1% Chrysotile
H3-FT-02-Mastic	9"x9" vinyl floor tile – Beige	Basement room 3	Insufficient Material
H3-DJC-01A	Drywall joint compound	Front entrance hallway	2% Chrysotile
H3-DJC-01B	Drywall joint compound	Main floor room 2	2% Chrysotile
H3-DJC-01C	Drywall joint compound	Living room	2% Chrysotile
H3-DJC-01D	Drywall joint compound	Living room	<1% Chrysotile
H3-DJC-01E	Drywall joint compound	Hallway	2% Chrysotile
H3-IWPC-01A	Interior window pane caulking – Grey	Between window frame and glass pane in dining room	2.0% Chrysotile
H3-IWPC-01B	Interior window pane caulking – Grey	Between window frame and glass pane in main floor room 1	Stop Positive
H3-IWPC-01C	Interior window pane caulking – Grey	Between window frame and glass pane in main floor room 2	Stop Positive
H3-EWFC-01A	Exterior window frame caulking – Cream	Between window frame and building on exterior	None Detected
H3-EWFC-01B	Exterior window frame caulking – Cream	Between window frame and building on exterior	None Detected
H3-EWFC-01C	Exterior window frame caulking – Cream	Between window frame and building on exterior	None Detected

**Table O-4.1.1 Suspected ACM Sample Collection and Analysis Summary
House 3, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
H3-FS-01A	Fire stop – Grey	Around furnace exhaust penetration in the chimney	None Detected
H3-FS-01B	Fire stop – Grey	Around furnace exhaust penetration in the chimney	None Detected
H3-FS-01C	Fire stop – Grey	Around furnace exhaust penetration in the chimney	None Detected
H3-BM-01A	Brick mortar	Basement chimney	None Detected
H3-BM-01B	Brick mortar	Basement chimney	None Detected
H3-BM-01C	Brick mortar	Basement chimney	None Detected

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of suspected ACM sample analytical results, the materials presented in Table O-4.1.2, below were identified as ACMs.

**Table O-4.1.2 Summary of Identified ACMs
House 3, Haines Junction, YT**

Identified ACM Description and Condition Information		Photo
9"x9" vinyl floor tile, both red and beige, in basement room 3		
Friability	Non-friable	
Condition	Good	
Content	1.1 – 1.3% Chrysotile	
Drywall joint compound throughout		
Friability	Non-friable in situ; can be made friable during removal	
Condition	Good	
Content	<1 - 2% Chrysotile	
Grey window pane caulking between window frame and glass panes throughout		
Friability	Non-friable	
Condition	Good	
Content	2.0% Chrysotile	

O-4.2 Lead

Lead is expected to be present in the following materials:

- Solder used on copper domestic pipes
- Caulking on bell fittings for cast iron drainage pipes
- Electrical equipment (i.e. batteries for emergency lighting/signage).

With respect to paint, 4 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table O-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

**Table O-4.2.1 Suspected LCP Sample Collection and Analysis Summary
House 3, Haines Junction, YT**

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
H3-P-01	Basement floors	Grey	1,900	Yes
H3-P-02	Interior walls	White	1,100	Yes
H3-P-03	Furnace	Green	<510	No
H3-P-04	Exterior	White	<110	No

Based on our observations and on our interpretations of suspected LCP sample analytical results, the materials presented in Table O-4.2.2, below were identified as LCPs.

**Table O-4.2.2 Summary of Identified LCPs
House 3, Haines Junction, YT**

Identified LCP Description	Photo
<p>Grey paint on the basement floor.</p> <p>This paint was observed to be in fair condition (minimal bubbling, flaking or peeling).</p>	
<p>White paint on interior walls.</p> <p>This paint was observed to be in good condition (no bubbling, flaking or peeling).</p>	

O-4.3 Polychlorinated Biphenyls

Two fluorescent light fixtures were observed. Based on the age of the building, fluorescent light ballasts may contain PCBs.


O-4.4 Mercury

Mercury vapour is expected to be present in fluorescent light bulbs/tubes throughout.

O-4.5 Mould

Moisture damage and mould were observed as summarized in Table O-4.5, below.

**Table O-4.5 Summary of Identified Mould and/or Moisture-Impacted Materials
House 3, Haines Junction, YT**

Identified Mould and/or Moisture Impacted Materials Description	Photo
Suspect mould growth was observed on the walls of basement room 3.	

O-4.6 Ozone-Depleting Substances

No suspected ODS-containing equipment was observed during the assessment.

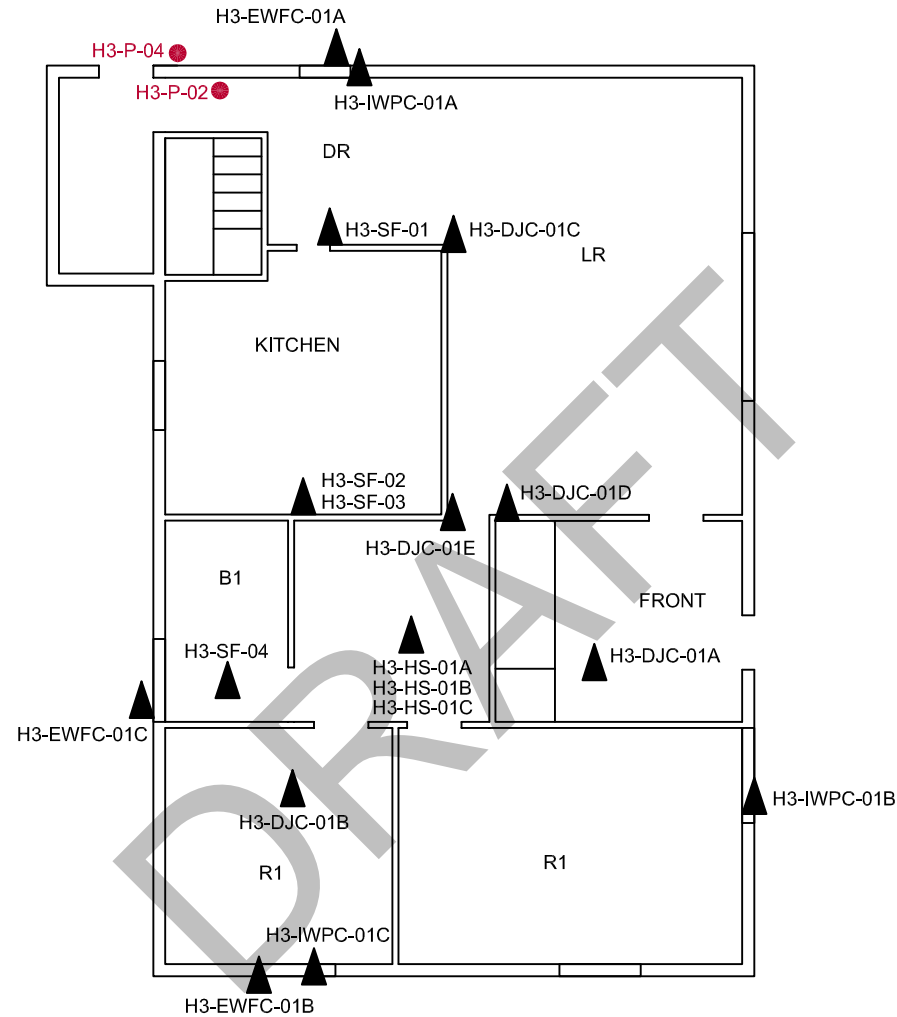
O-4.7 Silica

Silica may be present in concrete, cement, and ceramic tiles observed in various locations throughout.

O-5.0 BUILDING-SPECIFIC RECOMMENDATIONS

In general, identified hazardous building materials should be handled in accordance with the recommendations for demolition that are provided in Section 5 of the main body of this report.

DRAFT



HOUSE 3 MAIN FLOOR

NOTES: 1. DRYWALL JOINT COMPOUND THROUGHOUT IS ACM.
2. GREY WINDOW PANE CAULKING BETWEEN WINDOW FRAMES AND GLASS PANES THROUGHOUT IS ACM.
3. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

LEGEND

-  BULK SAMPLE
-  PAINT CHIP SAMPLE

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

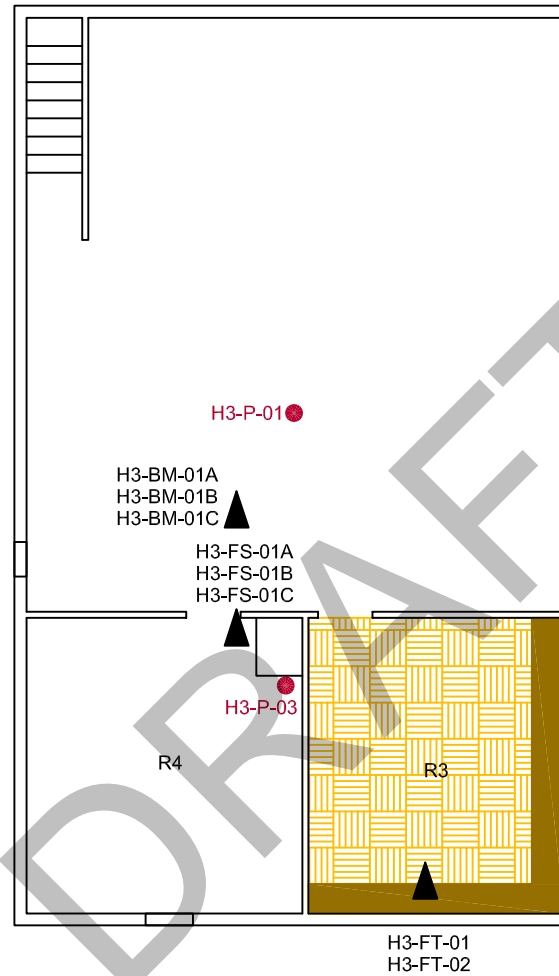
Client: PARKS CANADA

Project No.:	144901924
Scale:	NTS
Date:	14/11/18
Dwn. By:	CD <small>SL2014110120 DM/VM</small>
App'd By:	TW

Dwg. No.:





01





HOUSE 3
BASEMENT

LEGEND

-  BULK SAMPLE
-  PAINT CHIP SAMPLE
-  ASBESTOS-CONTAINING FLOOR TILE
-  MOULD IMPACTED MATERIALS

- NOTES:** 1. DRYWALL JOINT COMPOUND THROUGHOUT IS ACM.
 2. GREY WINDOW CAULKING PANE BETWEEN WINDOW FRAMES AND GLASS PANES THROUGHOUT IS ACM.
 3. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

**FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS
AND BULK SAMPLE LOCATIONS**

HAINES JUNCTION, YT

Client: PARKS CANADA

Project No.:	144901924
Scale:	NTS
Date:	14/11/18
Dwn. By:	CD <small>SL2014110121</small> DM/VM
App'd By:	TW

Dwg. No.:

02



**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H3-SF-01 551407481-0369	VINYL SHEET FLOORING- WHITE WITH PINK AND GREEN - SPECS/ DINING ROOM	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H3-SF-02 551407481-0370	VINYL SHEET FLOORING- IRREGULAR STONE PATTERN - KITCHEN	Beige Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H3-SF-03 551407481-0371	VINYL SHEET FLOORING- TAN - KITCHEN(CONCEALED UNDER SF-03)	Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H3-SF-04 551407481-0372	VINYL SHEET FLOORING- BEIGE PEBBLE PATTERN - BATHROOM	Gray/Various Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H3-FT-01 551407481-0373	9"X9" VINYL FLOOR TILE- RED - BASEMENT ROOM 3	Pink Non-Fibrous Homogeneous	98.7	None	1.3% Chrysotile
H3-FT-01-Mastic 551407481-0373A	9"X9" VINYL FLOOR TILE- RED - BASEMENT ROOM 3				
Insufficient Material					
H3-FT-02 551407481-0374	9"X9" VINYL FLOOR TILE- BEIGE - BASEMENT ROOM 3	Gray Non-Fibrous Homogeneous	98.9	None	1.1% Chrysotile
H3-FT-02-Mastic 551407481-0374A	9"X9" VINYL FLOOR TILE- BEIGE - BASEMENT ROOM 3				
Insufficient Material					

Analyst(s)

Jon Delos Santos (1)

Nicole Yeo (9)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H3-IWPC-01A 551407481-0380	INTERIOR WINDOW PANE CAULKING-GREY - BETWEEN WINDOW FRAME AND GLASS PANE IN DINING ROOM	Gray Non-Fibrous Homogeneous	98.0	None	2.0% Chrysotile
H3-IWPC-01B 551407481-0381	INTERIOR WINDOW PANE CAULKING-GREY - BETWEEN WINDOW FRAME AND GLASS PANE IN MAIN FLOOR ROOM 1				
Positive Stop (Not Analyzed)					
H3-IWPC-01C 551407481-0382	INTERIOR WINDOW PANE CAULKING-GREY - BETWEEN WINDOW FRAME AND GLASS PANE IN MAIN FLOOR ROOM 2				
Positive Stop (Not Analyzed)					
H3-EWFC-01A 551407481-0383	EXTERIOR WINDOW FRAME CAULKING-CREAM - BETWEEN WINDOW FRAME AND BUILDING ON EXTERIOR	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H3-EWFC-01B 551407481-0384	EXTERIOR WINDOW FRAME CAULKING-CREAM - BETWEEN WINDOW FRAME AND BUILDING ON EXTERIOR	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (1)

Nicole Yeo (9)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481

CustomerID: 55JACQ30N

CustomerPO: 144901924.801

ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM
via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H3-EWFC-01C 551407481-0385	EXTERIOR WINDOW FRAME CAULKING-CREAM - BETWEEN WINDOW FRAME AND BUILDING ON EXTERIOR	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (1)

Nicole Yeo (9)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
 CustomerID: 55JACQ30N
 CustomerPO: 144901924.801
 ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
 Fax: (604) 436-3752
 Received: 10/10/14 11:01 AM
 Analysis Date: 10/17/2014
 Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H3-HS-01A 551407481-0366	HEAT SHIELD-SILVER - INSIDE ROUND INCANDESCENT LIGHT FIXTURE	Silver/Beige Non-Fibrous Homogeneous	60% Cellulose 5% Glass	35% Non-fibrous (other)	None Detected
H3-HS-01B 551407481-0367	HEAT SHIELD-SILVER - INSIDE ROUND INCANDESCENT LIGHT FIXTURE	Silver/Beige Fibrous Homogeneous	60% Cellulose 5% Glass	35% Non-fibrous (other)	None Detected
H3-HS-01C 551407481-0368	HEAT SHIELD-SILVER - INSIDE ROUND INCANDESCENT LIGHT FIXTURE	Tan/Silver Fibrous Homogeneous	60% Cellulose 5% Glass	35% Non-fibrous (other)	None Detected
H3-DJC-01A 551407481-0375	DRYWALL JOINT COMPOUND - FRONT ENTRANCE HALLWAY	Gray Non-Fibrous Homogeneous		98% Non-fibrous (other)	2% Chrysotile
H3-DJC-01B 551407481-0376	DRYWALL JOINT COMPOUND - MAIN FLOOR ROOM 2	Gray Non-Fibrous Homogeneous		98% Non-fibrous (other)	2% Chrysotile
H3-DJC-01C 551407481-0377	DRYWALL JOINT COMPOUND - LIVING ROOM	Gray Non-Fibrous Homogeneous		98% Non-fibrous (other)	2% Chrysotile

Analyst(s)

Arabee Sathiseelan (9)

Jon Delos Santos (5)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
 CustomerID: 55JACQ30N
 CustomerPO: 144901924.801
 ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
 Fax: (604) 436-3752
 Received: 10/10/14 11:01 AM
 Analysis Date: 10/17/2014
 Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H3-DJC-01D 551407481-0378	DRYWALL JOINT COMPOUND - LIVING ROOM	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	<1% Chrysotile
H3-DJC-01E 551407481-0379	DRYWALL JOINT COMPOUND - HALLWAY	Gray Non-Fibrous Homogeneous		98% Non-fibrous (other)	2% Chrysotile
H3-FS-01A 551407481-0386	FIRE STOP-GREY - AROUND FURNACE EXHAUST PENETRATION IN THE CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
H3-FS-01B 551407481-0387	FIRE STOP-GREY - AROUND FURNACE EXHAUST PENETRATION IN THE CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
H3-FS-01C 551407481-0388	FIRE STOP-GREY - AROUND FURNACE EXHAUST PENETRATION IN THE CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
H3-BM-01A 551407481-0389	BRICK MORTAR - BASEMENT CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (9)

Jon Delos Santos (5)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H3-BM-01B 551407481-0390	BRICK MORTAR - BASEMENT CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
H3-BM-01C 551407481-0391	BRICK MORTAR - BASEMENT CHIMNEY	Gray Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiaselan (9)

Jon Delos Santos (5)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: **144901924.801****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
H3-P-01	551407512-0064 Site: GREY COLOUR Desc: BASEMENT FLOORS	10/16/2014		1900 ppm
H3-P-02	551407512-0065 Site: WHITE COLOUR Desc: INTERIOR WALLS	10/16/2014		1100 ppm
H3-P-03	551407512-0066 Site: GREEN COLOUR Desc: FURNACE Insufficient sample to reach reporting limit.	10/16/2014		<510 ppm
H3-P-04	551407512-0067 Site: WHITE COLOUR Desc: EXTERIOR Insufficient sample to reach reporting limit.	10/16/2014		<110 ppm


Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 10/16/2014 17:00:20

DRAFT

Appendix P
Findings and Recommendations – House 3 Garage

DRAFT

P-4.0 FINDINGS – HOUSE 3 GARAGE

The House 3 Garage was reportedly constructed in 1980.

Stantec understands that demolition of the House 3 Garage has been proposed.

The results of the assessment for each of the considered hazardous materials within the House 3 Garage are provided in the following sub-sections.

Floor plan drawings for the House 3 Garage, which include locations of the samples collected during this assessment and locations of identified hazardous building materials (where practical), are attached to this Appendix.

P-4.1 Asbestos

Stantec identified and sampled various suspected ACMs, including the following:

- Roofing paper
- Building paper
- Roofing shingle.

9 samples of the above-noted suspected ACMs were collected and submitted to EMSL for analysis of asbestos content and nature.

A summary of the sample types, locations and analytical results is presented in Table P-4.1.1, below. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are attached at the end of this Appendix.

**Table P-4.1.1 Suspected ACM Sample Collection and Analysis Summary
House 3 Garage, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
H3G-RP-01A	Roofing paper – Black	Roof (concealed under wood shingles)	None Detected
H3G-RP-01B	Roofing paper – Black	Roof (concealed under wood shingles)	None Detected
H3G-RP-01C	Roofing paper – Black	Roof (concealed under wood shingles)	None Detected
H3G-BP-01A	Building paper – Black	Under siding	Insufficient Material
H3G-BP-01B	Building paper – Black	Under siding	None Detected

**Table P-4.1.1 Suspected ACM Sample Collection and Analysis Summary
House 3 Garage, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
H3G-BP-01C	Building paper – Black	Under siding	Insufficient Material
H3G-RS-01A	Roof shingle – Tar and gravel	Roof (concealed under wood shingles and roofing paper)	None Detected
H3G-RS-01B	Roof shingle – Tar and gravel	Roof (concealed under wood shingles and roofing paper)	None Detected
H3G-RS-01C	Roof shingle – Tar and gravel	Roof (concealed under wood shingles and roofing paper)	None Detected

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of suspected ACM sample analytical results, no ACMs were identified.

P-4.2 Lead

Typical potential lead-containing items (solder on wiring, in domestic water pipes and/or in the bell fittings of cast iron drain pipes; lead acid batteries associated with emergency exit signage, etc.) were not observed.

With respect to paint, 2 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table P-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

**Table P-4.2.1 Suspected LCP Sample Collection and Analysis Summary
House 3 Garage
Haines Junction, YT**

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
H3G-P-01	Floor	Grey	820	No
H3G-P-02	Interior walls	Cream	<90	No

Based on our observations and on our interpretations of suspected LCP sample analytical results, no LCPs were identified.

P-4.3 Polychlorinated Biphenyls

No suspected PCB-containing equipment was observed during the assessment.

P-4.4 Mercury

No suspected mercury-containing equipment was observed during the assessment.

P-4.5 Mould

No suspect mould or moisture impacted materials were observed during the assessment.

P-4.6 Ozone-Depleting Substances

No suspected ODS-containing equipment was observed during the assessment.

P-4.7 Silica

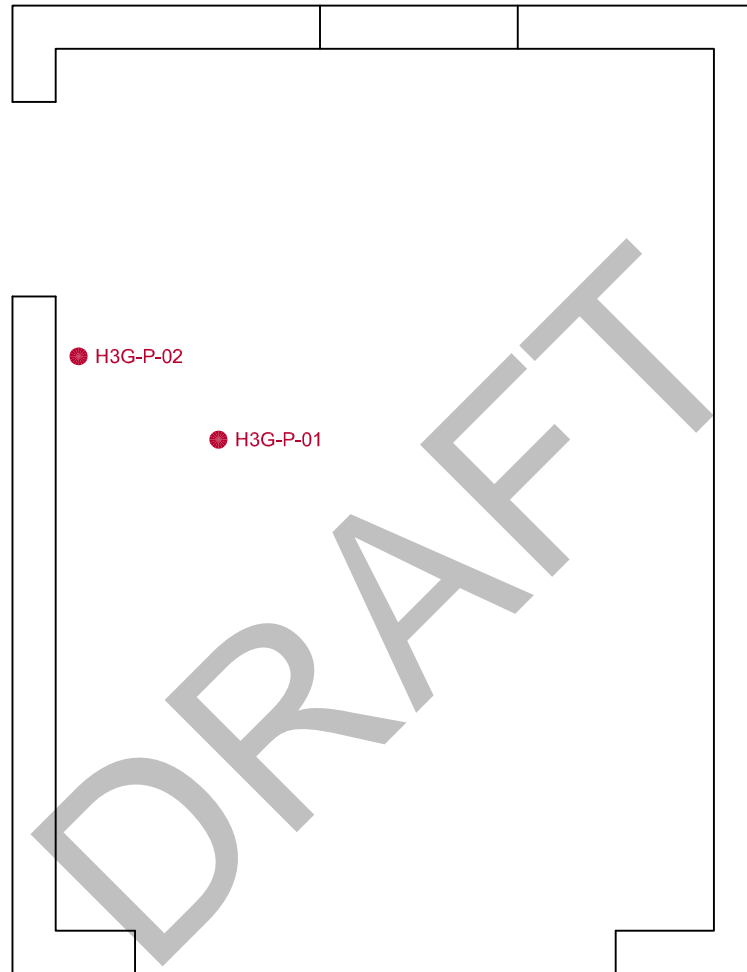
Silica may be present in concrete and cement observed in various locations throughout.

P-5.0 RECOMMENDATIONS TO ADDRESS IDENTIFIED ISSUES – HOUSE 3 GARAGE

In general, identified hazardous building materials should be handled in accordance with the recommendations for demolition that are provided in Section 5 of the main body of this report.

DRAFT

H3G-RS-01A
H3G-RS-01B
H3G-RS-01C
H3G-RP-01A
H3G-RP-01B
H3G-RP-01C



H3G-BP-01A
H3G-BP-01B
H3G-BP-01C



HOUSE 3 GARAGE

LEGEND



BULK SAMPLE



PAINT CHIP SAMPLE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

Client:

PARKS CANADA

Project No.: 144901924

Scale: NTS

Date: 14/11/18

Dwn. By: CD SL2014110122
DM/VM

App'd By: TW

Dwg. No.:

P



DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H3G-RP-01A 551407481-0392	ROOFING PAPER-BLACK - ROOF(CONCEALED UNDER WOOD SHINGLES)	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
H3G-RP-01B 551407481-0393	ROOFING PAPER-BLACK - ROOF(CONCEALED UNDER WOOD SHINGLES)	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
H3G-RP-01C 551407481-0394	ROOFING PAPER-BLACK - ROOF(CONCEALED UNDER WOOD SHINGLES)	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
H3G-BP-01A 551407481-0395	BUILDING PAPER-BLACK - UNDER SIDING				
Insufficient Material					
H3G-BP-01B 551407481-0396	BUILDING PAPER-BLACK - UNDER SIDING	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
H3G-BP-01C 551407481-0397	BUILDING PAPER-BLACK - UNDER SIDING				
Insufficient Material					
H3G-RS-01A 551407481-0398	ROOF SHINGLE-TAR AND GRAVEL - ROOF(CONCEALED UNDER WOOD SHINGLES AND ROOFING PAPER)	Various/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (2)

Nicole Yeo (5)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM
via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H3G-RS-01B 551407481-0399	ROOF SHINGLE-TAR AND GRAVEL - ROOF(CONCEALED UNDER WOOD SHINGLES AND ROOFING PAPER)	Various/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H3G-RS-01C 551407481-0400	ROOF SHINGLE-TAR AND GRAVEL - ROOF(CONCEALED UNDER WOOD SHINGLES AND ROOFING PAPER)	Various/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (2)

Nicole Yeo (5)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: **144901924.801****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
H3G-P-01	551407512-0068 Site: GREY COLOUR Desc: FLOOR	10/16/2014		820 ppm
H3G-P-02	551407512-0069 Site: CREAM COLOUR Desc: INTERIOR WALLS	10/16/2014		<90 ppm

DRAFT

Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 10/16/2014 17:01:19

DRAFT

Appendix Q
Findings and Recommendations – House 4

DRAFT

Q-4.0 FINDINGS – HOUSE 4

House 4 was reportedly constructed in 1961.

Stantec understands that demolition of House 4 has been proposed.

The results of the assessment for each of the considered hazardous materials within House 4 are provided in the following sub-sections.

Floor plan drawings for House 4, which include locations of the samples collected during this assessment and locations of identified hazardous building materials (where practical), are attached to this Appendix.

Q-4.1 Asbestos

Stantec identified and sampled various suspected ACMs, including the following:

- Duct tape
- Duct shield
- Sheet flooring
- Vinyl floor tile and associated mastic
- Window pane and frame caulking
- Pipe Sealant
- Roofing paper
- Building paper
- Ceiling tiles
- Drywall joint compound
- Roofing shingle
- Brick mortar.

41 samples of the above-noted suspected ACMs were collected and submitted to EMSL for analysis of asbestos content and nature.

A summary of the sample types, locations and analytical results is presented in Table O-4.1.1, below. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are attached at the end of this Appendix.

It should be noted that several bulk samples of vinyl floor tile were further separated into layers during laboratory analysis.

**Table O-4.1.1 Suspected ACM Sample Collection and Analysis Summary
House 3, Haines Junction, YT**



Sample Number	Material Description	Sample Location	Result (%/type asbestos)
H4-DT-01A	Duct tape – White woven	Seams of furnace ducting in the basement	55% Chrysotile
H4-DT-01B	Duct tape – White woven	Seams of furnace ducting in the basement	Stop Positive
H4-DT-01C	Duct tape – White woven	Seams of furnace ducting in the basement	Stop Positive
H4-DS-01A	Duct shield – White	On wooden joists in basement above furnace ducting	45% Chrysotile
H4-DS-01B	Duct shield – White	On wooden joists in basement above furnace ducting	Stop Positive
H4-DS-01C	Duct shield – White	On wooden joists in basement above furnace ducting	Stop Positive
H4-SF-01	Vinyl sheet flooring – Brown square pattern	Kitchen	22.4% Chrysotile
H4-SF-02	Vinyl sheet flooring – Tan with beige spots	Bathroom	None Detected
H4-SF-03	Vinyl sheet flooring – Pink square pattern	Stairwell	None Detected
H4-SF-04	Vinyl sheet flooring – Yellow with tan spots	Mudroom	5.2% Chrysotile
H4-FT-01	Vinyl floor tile – Cream	Concealed under SF-01 in the kitchen	1.4% Chrysotile
H4-FT-01-Mastic	Floor tile mastic	Concealed under SF-01 in the kitchen	Insufficient Material
H4-FT-02	Vinyl floor tile – Cream	Concealed under carpet in room 2	1.7% Chrysotile
H4-FT-02-Mastic	Floor tile mastic	Concealed under carpet in room 2	None Detected
H4-IWPC-01A	Interior window pane caulking – White	Between window frame and glass pane on the interior	None Detected
H4-IWPC-01B	Interior window pane caulking – White	Between window frame and glass pane on the interior	None Detected
H4-IWPC-01C	Interior window pane caulking – White	Between window frame and glass pane on the interior	None Detected
H4-EWFC-01A	Exterior window frame caulking – Brown	Between window frame and building on the exterior	0.66% Chrysotile
H4-EWFC-01B	Exterior window frame caulking – Brown	Between window frame and building on the exterior	None Detected

**Table O-4.1.1 Suspected ACM Sample Collection and Analysis Summary
House 3, Haines Junction, YT**



Sample Number	Material Description	Sample Location	Result (%/type asbestos)
H4-EWFC-01C	Exterior window frame caulking – Brown	Between window frame and building on the exterior	None Detected
H4-PS-01A	Pipe sealant – Grey	Inside pipe fittings in the basement	None Detected
H4-PS-01B	Pipe sealant – Grey	Inside pipe fittings in the basement	None Detected
H4-PS-01C	Pipe sealant – Grey	Inside pipe fittings in the basement	None Detected
H4-RP-01A	Roofing paper – Black	Roof (concealed under wood shingles)	None Detected
H4-RP-01B	Roofing paper – Black	Roof (concealed under wood shingles)	None Detected
H4-RP-01C	Roofing paper – Black	Roof (concealed under wood shingles)	None Detected
H4-BP-01A	Building paper – Black	Under siding	None Detected
H4-BP-01B	Building paper – Black	Under siding	None Detected
H4-BP-01C	Building paper – Black	Under siding	None Detected
H4-CT-01A	White 1'x1' ceiling tile	Basement room 1	None Detected
H4-CT-01B	White 1'x1' ceiling tile	Mudroom	None Detected
H4-CT-01C	White 1'x1' ceiling tile	Basement room 1	None Detected
H4-DJC-01A	Drywall joint compound	Main floor room 2	2% Chrysotile
H4-DJC-01B	Drywall joint compound	Living room	2% Chrysotile
H4-DJC-01C	Drywall joint compound	Stairwell	2% Chrysotile
H4-DJC-01D	Drywall joint compound	Front entrance hallway	2% Chrysotile
H4-DJC-01E	Drywall joint compound	Stairwell	2% Chrysotile
H4-RS-01A	Roof shingle – Tar and gravel	Roof (concealed under wood shingles and roofing paper)	None Detected
H4-RS-01B	Roof shingle – Tar and gravel	Roof (concealed under wood shingles and roofing paper)	None Detected
H4-RS-01C	Roof shingle – Tar and gravel	Roof (concealed under wood shingles and roofing paper)	None Detected
H4-BM-01A	Brick mortar	Basement chimney	None Detected
H4-BM-01B	Brick mortar	Basement chimney	None Detected
H4-BM-01C	Brick mortar	Basement chimney	None Detected

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of suspected ACM sample analytical results, the materials presented in Table Q-4.1.2, below were identified as ACMs.


**Table Q-4.1.2 Summary of Identified ACMs
House 4, Haines Junction, YT**

Identified ACM Description and Condition Information		Photo
White woven duct tape on seams of furnace ducting in the basement		
Friability	Friable	
Condition	Good	
Content	55% Chrysotile	
White duct shields on wooden joists in the basement above furnace ducting		
Friability	Friable	
Condition	Good	
Content	45% Chrysotile	
Brown square pattern sheet flooring in the kitchen		
Friability	Friable during removal	
Condition	Good	
Content	22.4% Chrysotile	

**Table Q-4.1.2 Summary of Identified ACMs
House 4, Haines Junction, YT**

Identified ACM Description and Condition Information		Photo
Tan spots pattern sheet flooring in the mudroom		No photo
Friability	Friable during removal	
Condition	Good	
Content	5.2% Chrysotile	
Cream vinyl floor tile concealed under carpet and other flooring throughout the majority of the main level		
Friability	Non-friable	
Condition	Good	
Content	1.4 – 1.7% Chrysotile	
Brown exterior window frame caulking between window frames and the building on the exterior of windows		
Friability	Non-friable	
Condition	Good	
Content	0.66% Chrysotile	

**Table Q-4.1.2 Summary of Identified ACMs
House 4, Haines Junction, YT**

Identified ACM Description and Condition Information		Photo
Drywall joint compound throughout		
Friability	Non-friable in situ; can be made friable during removal	
Condition	Good	
Content	2% Chrysotile	

Q-4.2 Lead

Lead is expected to be present in the following materials:

- Solder used on copper domestic pipes
- Caulking on bell fittings for cast iron drainage pipes
- Electrical equipment (i.e. batteries for emergency lighting/signage).

With respect to paint, 5 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table Q-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

**Table Q-4.2.1 Suspected LCP Sample Collection and Analysis Summary
House 4, Haines Junction, YT**

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
H4-P-01	Kitchen walls	Green	<90	No
H4-P-02	Interior walls	White	<90	No
H4-P-03	Basement floors	Grey	1,800	Yes
H4-P-04	Front porch	Grey	<90	No
H4-P-05	Exterior trim	Brown	21,000	Yes

Based on our observations and on our interpretations of suspected LCP sample analytical results, the materials presented in Table Q-4.2.2, below were identified as LCPs.

Table Q-4.2.2 Summary of Identified LCPs
House 4, Haines Junction, YT

Identified LCP Description	Photo
Grey paint on the basement floor. This paint was observed to be in good condition (no bubbling, flaking or peeling).	
Brown paint on exterior trim. This paint was observed to be in good condition (no bubbling, flaking or peeling).	

Q-4.3 Polychlorinated Biphenyls

Two fluorescent light fixtures were observed. The label from one light fixture ballast was inspected for comparison to the PCB Guide. Although that ballast was confirmed to be non-PCB, the ballast within the other fixture may contain PCBs, based on the age of the building.

Q-4.4 Mercury

One (1) mercury-containing thermostat was observed in the living room, as indicated on the attached floor plan drawings.

Mercury vapour is expected to be present in fluorescent light tubes/bulbs throughout.

Q-4.5 Mould

No suspect mould or moisture impacted materials were observed during the assessment.

Q-4.6 Ozone-Depleting Substances

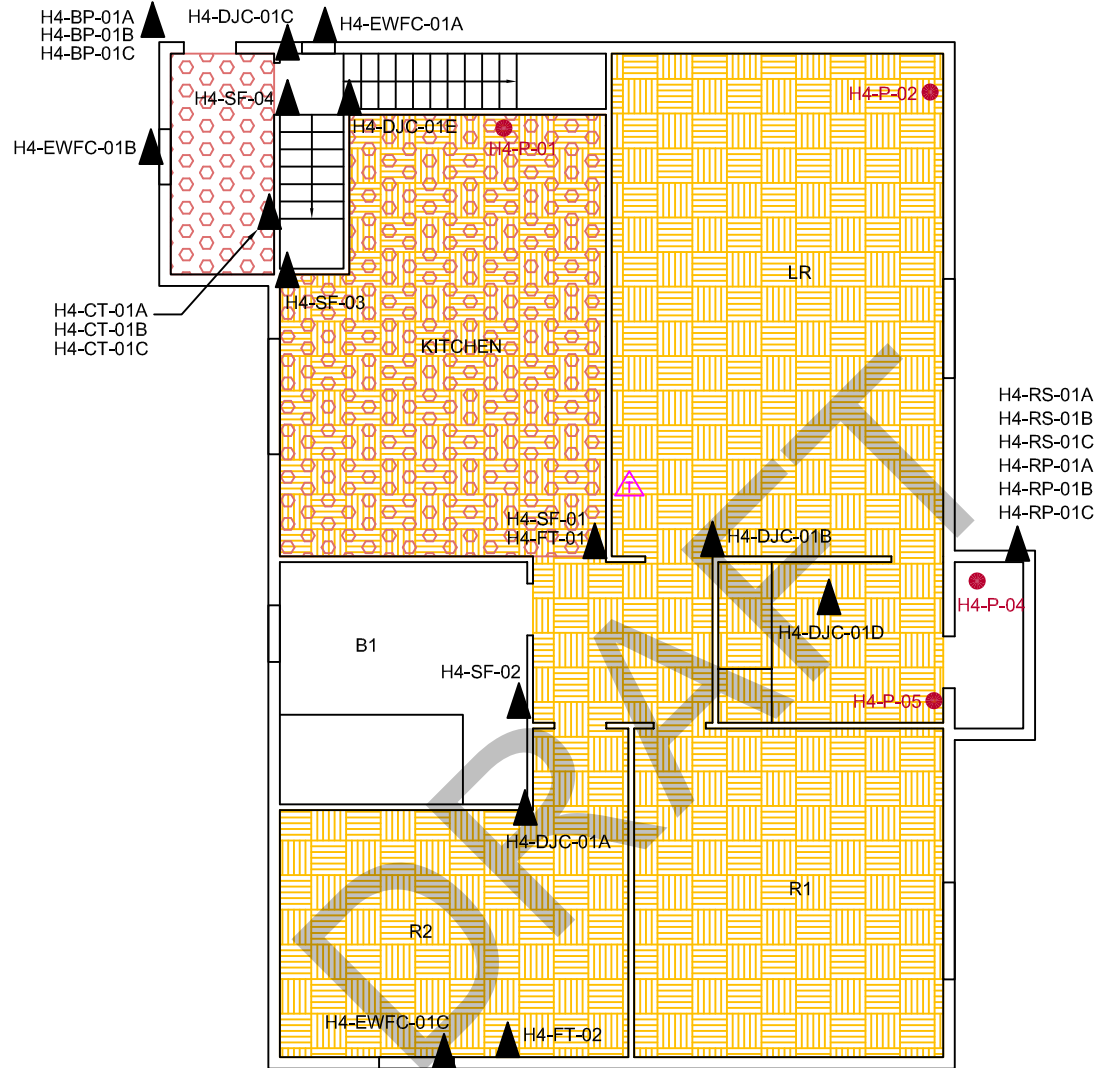
No suspected ODS-containing equipment was observed during the assessment.

Q-4.7 Silica

Silica may be present in concrete, cement, and ceramic tiles observed in various locations throughout.

Q-5.0 BUILDING-SPECIFIC RECOMMENDATIONS

In general, identified hazardous building materials should be handled in accordance with the recommendations for demolition that are provided in Section 5 of the main body of this report.



HOUSE 4
MAIN FLOOR

- NOTES:**
1. WHITE WOVEN TAPE ON SEAMS OF FURNACE DUCTING THROUGHOUT IS ACM.
 2. WHITE DUCT SHIELDS ON WOODEN JOISTS ABOVE FURNACE DUCTING IS ACM.
 3. BROWN WINDOW FRAME CAULKING BETWEEN WINDOW FRAMES AND EXTERIOR OF THE BUILDING IS ACM.
 4. DRYWALL JOINT COMPOUND THROUGHOUT IS ACM.
 5. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

LEGEND

- BULK SAMPLE
- PAINT CHIP SAMPLE
- ASBESTOS-CONTAINING FLOOR TILE
- ASBESTOS-CONTAINING SHEET FLOORING
- MERCURY-CONTAINING THERMOSTAT

**FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS
AND BULK SAMPLE LOCATIONS**

HAINES JUNCTION, YT

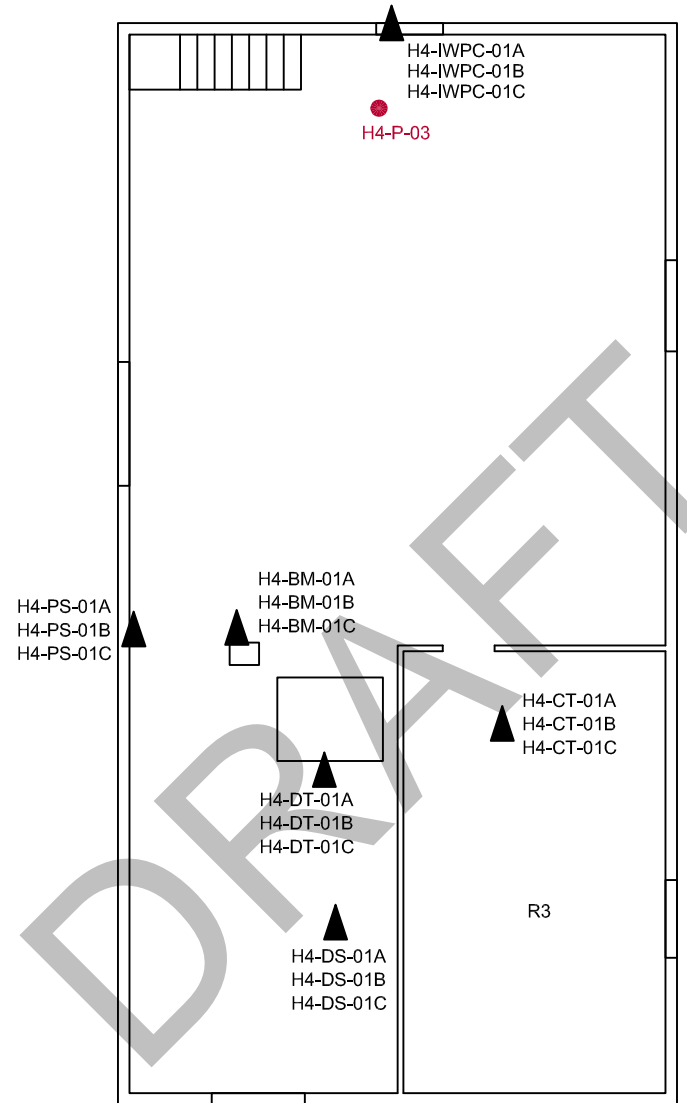
Client: PARKS CANADA

Project No.: 144901924
Scale: NTS
Date: 14/11/18
Dwn. By: CD SL2014110123
App'd By: TW

Dwg. No.:

Q1





HOUSE 4 BASEMENT

- NOTES:**
1. WHITE WOVEN TAPE ON SEAMS OF FURNACE DUCTING THROUGHOUT IS ACM.
 2. WHITE DUCT SHIELDS ON WOODEN JOISTS ABOVE FURNACE DUCTING IS ACM.
 3. BROWN WINDOW FRAME CAULKING BETWEEN WINDOW FRAMES AND EXTERIOR OF THE BUILDING IS ACM.
 4. DRYWALL JOINT COMPOUND THROUGHOUT IS ACM.
 5. THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

LEGEND

- ▲ BULK SAMPLE
● PAINT CHIP SAMPLE

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

HAINES JUNCTION, YT

Client: PARKS CANADA

Project No.:	144901924
Scale:	NTS
Date:	14/11/18
Dwn. By:	CD <small>SL2014110124 DM/VM</small>
App'd By:	TW

Dwg. No.:

Q2



**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H4-SF-01 551407481-0407	VINYL SHEET FLOORING- BROWN SQUARE PATTERN - KITCHEN	Various/Yellow Non-Fibrous Homogeneous	77.6	None	22.4% Chrysotile
H4-SF-02 551407481-0408	VINYL SHEET FLOORING- TAN WITH BEIGE SPOTS - BATHROOM	White/Red Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H4-SF-03 551407481-0409	VINYL SHEET FLOORING- PINK SQUARE PATTERN - STAIRWELL	Gray/Pink Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H4-SF-04 551407481-0410	VINYL SHEET FLOORING- YELLOW WITH TAN SPOTS - MUDROOM	White/Yellow Fibrous Homogeneous	94.8	None	5.2% Chrysotile
H4-FT-01 551407481-0411	VINYL FLOOR TILE-CREAM - CONCEALED UNDER SF-01 IN THE KITCHEN	Gray Non-Fibrous Homogeneous	98.6	None	1.4% Chrysotile
H4-FT-01-Mastic 551407481-0411A	VINYL FLOOR TILE-CREAM - CONCEALED UNDER SF-01 IN THE KITCHEN				
Insufficient Material					
H4-FT-02 551407481-0412	VINYL FLOOR TILE-CREAM - CONCEALED UNDER CARPET IN ROOM 2	White Non-Fibrous Homogeneous	98.3	None	1.7% Chrysotile
H4-FT-02-Mastic 551407481-0412A	VINYL FLOOR TILE-CREAM - CONCEALED UNDER CARPET IN ROOM 2	Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (6)

Nicole Yeo (19)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H4-IWPC-01A 551407481-0413	INTERIOR WINDOW PANE CAULKING-WHITE - BETWEEN WINDOW FRAME AND GLASS PANE ON THE INTERIOR	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H4-IWPC-01B 551407481-0414	INTERIOR WINDOW PANE CAULKING-WHITE - BETWEEN WINDOW FRAME AND GLASS PANE ON THE INTERIOR	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H4-IWPC-01C 551407481-0415	INTERIOR WINDOW PANE CAULKING-WHITE - BETWEEN WINDOW FRAME AND GLASS PANE ON THE INTERIOR	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H4-EWFC-01A 551407481-0416	EXTERIOR WINDOW FRAME CAULKING- BROWN - BETWEEN WINDOW FRAME AND BUILDING ON THE EXTERIOR	Brown/Gray Non-Fibrous Homogeneous	99.3	None	0.66% Chrysotile
H4-EWFC-01B 551407481-0417	EXTERIOR WINDOW FRAME CAULKING- BROWN - BETWEEN WINDOW FRAME AND BUILDING ON THE EXTERIOR	Brown Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (6)

Nicole Yeo (19)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H4-EWFC-01C 551407481-0418	EXTERIOR WINDOW FRAME CAULKING-BROWN - BETWEEN WINDOW FRAME AND BUILDING ON THE EXTERIOR	Brown Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H4-PS-01A 551407481-0419	PIPE SEALANT-GREY - INSIDE PIPE FITTINGS IN THE BASEMENT	Brown/Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H4-PS-01B 551407481-0420	PIPE SEALANT-GREY - INSIDE PIPE FITTINGS IN THE BASEMENT	Brown/Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H4-PS-01C 551407481-0421	PIPE SEALANT-GREY - INSIDE PIPE FITTINGS IN THE BASEMENT	Brown/Gray Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H4-RP-01A 551407481-0422	ROOFING PAPER-BLACK - ROOF(CONCEALED UNDER WOOD SHINGLES)	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
H4-RP-01B 551407481-0423	ROOFING PAPER-BLACK - ROOF(CONCEALED UNDER WOOD SHINGLES)	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
H4-RP-01C 551407481-0424	ROOFING PAPER-BLACK - ROOF(CONCEALED UNDER WOOD SHINGLES)	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
H4-BP-01A 551407481-0425	BUILDING PAPER-BLACK - UNDER SIDING	Brown Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (6)

Nicole Yeo (19)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H4-BP-01B 551407481-0426	BUILDING PAPER-BLACK - UNDER SIDING	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
H4-BP-01C 551407481-0427	BUILDING PAPER-BLACK - UNDER SIDING	Brown Fibrous Homogeneous	100	None	No Asbestos Detected
H4-RS-01A 551407481-0436	ROOF SHINGLE-TAR AND GRAVEL - ROOF(CONCEALED UNDER WOOD SHINGLES AND ROOFING PAPER)	Various/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H4-RS-01B 551407481-0437	ROOF SHINGLE-TAR AND GRAVEL - ROOF(CONCEALED UNDER WOOD SHINGLES AND ROOFING PAPER)	Various/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H4-RS-01C 551407481-0438	ROOF SHINGLE-TAR AND GRAVEL - ROOF(CONCEALED UNDER WOOD SHINGLES AND ROOFING PAPER)	Various/Black Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (6)

Nicole Yeo (19)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H4-DT-01A 551407481-0401	DUCT TAPE- WHITE WOVEN - SEAMS OF FURNACE DUCTING IN THE BASEMENT	White Fibrous Homogeneous		45% Non-fibrous (other)	55% Chrysotile
H4-DT-01B 551407481-0402	DUCT TAPE- WHITE WOVEN - SEAMS OF FURNACE DUCTING IN THE BASEMENT				Stop Positive (Not Analyzed)
H4-DT-01C 551407481-0403	DUCT TAPE- WHITE WOVEN - SEAMS OF FURNACE DUCTING IN THE BASEMENT				Stop Positive (Not Analyzed)
H4-DS-01A 551407481-0404	DUCT SHIELD- WHITE - ON WOODEN JOISTS IN BASEMENT ABOVE FURNACE DUCTING	White Fibrous Homogeneous		55% Non-fibrous (other)	45% Chrysotile

Analyst(s)

Arabee Sathiseelan (9)

Jon Delos Santos (4)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H4-DS-01B 551407481-0405	DUCT SHIELD- WHITE - ON WOODEN JOISTS IN BASEMENT ABOVE FURNACE DUCTING				Stop Positive (Not Analyzed)
H4-DS-01C 551407481-0406	DUCT SHIELD- WHITE - ON WOODEN JOISTS IN BASEMENT ABOVE FURNACE DUCTING				Stop Positive (Not Analyzed)
H4-CT-01A 551407481-0428	WHITE 1'X1' CEILING TILE - BASEMENT ROOM 1	Brown/White Fibrous Homogeneous	85% Cellulose	15% Non-fibrous (other)	None Detected
H4-CT-01B 551407481-0429	WHITE 1'X1' CEILING TILE - MUDROOM	Brown/White Fibrous Homogeneous	85% Cellulose	15% Non-fibrous (other)	None Detected
H4-CT-01C 551407481-0430	WHITE 1'X1' CEILING TILE - BASEMENT ROOM 1	Brown/White Fibrous Homogeneous	90% Cellulose	10% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (9)

Jon Delos Santos (4)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
 CustomerID: 55JACQ30N
 CustomerPO: 144901924.801
 ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
 Fax: (604) 436-3752
 Received: 10/10/14 11:01 AM
 Analysis Date: 10/17/2014
 Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H4-DJC-01A 551407481-0431	DRYWALL JOINT COMPOUND - MAIN FLOOR ROOM 2	Gray Non-Fibrous Homogeneous		98% Non-fibrous (other)	2% Chrysotile
H4-DJC-01B 551407481-0432	DRYWALL JOINT COMPOUND - LIVING ROOM	Gray Non-Fibrous Homogeneous		98% Non-fibrous (other)	2% Chrysotile
H4-DJC-01C 551407481-0433	DRYWALL JOINT COMPOUND - STAIRWELL	Gray Non-Fibrous Homogeneous		98% Non-fibrous (other)	2% Chrysotile
H4-DJC-01D 551407481-0434	DRYWALL JOINT COMPOUND - FRONT ENTRANCE HALLWAY	Gray/White Non-Fibrous Homogeneous		98% Non-fibrous (other)	2% Chrysotile
H4-DJC-01E 551407481-0435	DRYWALL JOINT COMPOUND - STAIRWELL	Gray/White Non-Fibrous Homogeneous		98% Non-fibrous (other)	2% Chrysotile
H4-BM-01A 551407481-0439	BRICK MORTAR - BASEMENT CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected
H4-BM-01B 551407481-0440	BRICK MORTAR - BASEMENT CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (9)

Jon Delos Santos (4)

Kevin Pang
 or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481
CustomerID: 55JACQ30N
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
H4-BM-01C 551407481-0441	BRICK MORTAR - BASEMENT CHIMNEY	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Arabee Sathiseelan (9)

Jon Delos Santos (4)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

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

Initial report from 10/17/2014 22:58:12

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: **144901924.801****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
H4-P-01	551407512-0070 Site: GREEN COLOUR Desc: KITCHEN WALLS	10/16/2014		<90 ppm
H4-P-02	551407512-0071 Site: WHITE COLOUR Desc: INTERIOR WALLS	10/16/2014		<90 ppm
H4-P-03	551407512-0072 Site: GREY COLOUR Desc: BASEMENT FLOORS	10/16/2014		1800 ppm
H4-P-04	551407512-0073 Site: GREY COLOUR Desc: FRONT PORCH	10/16/2014		<90 ppm
H4-P-05	551407512-0074 Site: BROWN COLOUR Desc: EXTERIOR TRIM	10/16/2014		21000 ppm


Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 10/16/2014 17:02:27

DRAFT

Appendix R
Findings and Recommendations – House 4 Garage

DRAFT

R-4.0 FINDINGS – HOUSE 4 GARAGE

The House 4 Garage was reportedly constructed in 1980.

Stantec understands that demolition of the House 4 Garage has been proposed.

The results of the assessment for each of the considered hazardous materials within the House 4 Garage are provided in the following sub-sections.

Floor plan drawings for the House 4 Garage, which include locations of the samples collected during this assessment and locations of identified hazardous building materials (where practical), are attached to this Appendix.

R-4.1 Asbestos

Stantec identified and sampled various suspected ACMs, including the following:

- Door caulking
- Window pane caulking.

6 samples of the above-noted suspected ACMs were collected and submitted to EMSL for analysis of asbestos content and nature.

A summary of the sample types, locations and analytical results is presented in Table R-4.1.1, below. Copies of the certificates of analysis provided by EMSL for the suspected ACM samples submitted are attached at the end of this Appendix.

**Table R-4.1.1 Suspected ACM Sample Collection and Analysis Summary
House 4 Garage, Haines Junction, YT**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
H4G-DC-01A	Door caulking – White	Around doors on the exterior	None Detected
H4G-DC-01B	Door caulking – White	Around doors on the exterior	None Detected
H4G-DC-01C	Door caulking – White	Around doors on the exterior	None Detected
H4G-IWPC-01A	Interior window pane caulking – Yellow	Between window frame and glass pane on the interior	None Detected
H4G-IWPC-01B	Interior window pane caulking – Yellow	Between window frame and glass pane on the interior	None Detected
H4G-IWPC-01C	Interior window pane caulking – Yellow	Between window frame and glass pane on the interior	None Detected

Based on our observations of building construction (estimated vintage of interior finishes and uniformity of building material use) and on our interpretations of suspected ACM sample analytical results, no ACMs were identified.

R-4.2 Lead

Typical potential lead-containing items (solder on wiring, in domestic water pipes and/or in the bell fittings of cast iron drain pipes; lead acid batteries associated with emergency exit signage, etc.) were not observed.

With respect to paint, 3 paint chip samples were obtained, where suspected LCPs were observed. A summary of the sample types, locations and analytical results is presented in Table R-4.2.1, below. A copy of the certificate of analysis provided by EMSL for the suspected LCP samples submitted is attached to this Appendix.

**Table R-4.2.1 Suspected LCP Sample Collection and Analysis Summary
House 4 Garage, Haines Junction, YT**

Sample No.	Sample Location	Sample Colour	Lab Result (ppm)	Lead Containing (Yes/No)
H4G-P-01	Exterior siding	White	<90	No
H4G-P-02	Interior walls	Beige	<90	No
H4G-P-03	Floor	Grey	1,800	Yes

Based on our observations and on our interpretations of suspected LCP sample analytical results, the paint application presented in Table R-4.2.2, below was identified as an LCP.

**Table R-4.2.2 Summary of Identified LCPs
House 4 Garage, Haines Junction, YT**

Identified LCP Description	Photo
Grey paint on the floor. This paint was observed to be in good condition (not bubbling, flaking or peeling).	No photo

R-4.3 Polychlorinated Biphenyls

No suspected PCB-containing equipment was observed during the assessment.

R-4.4 Mercury

No suspected mercury-containing equipment was observed during the assessment.

R-4.5 Mould

No suspect mould or moisture impacted materials were observed during the assessment.

R-4.6 Ozone-Depleting Substances

No suspected ODS-containing equipment was observed during the assessment.

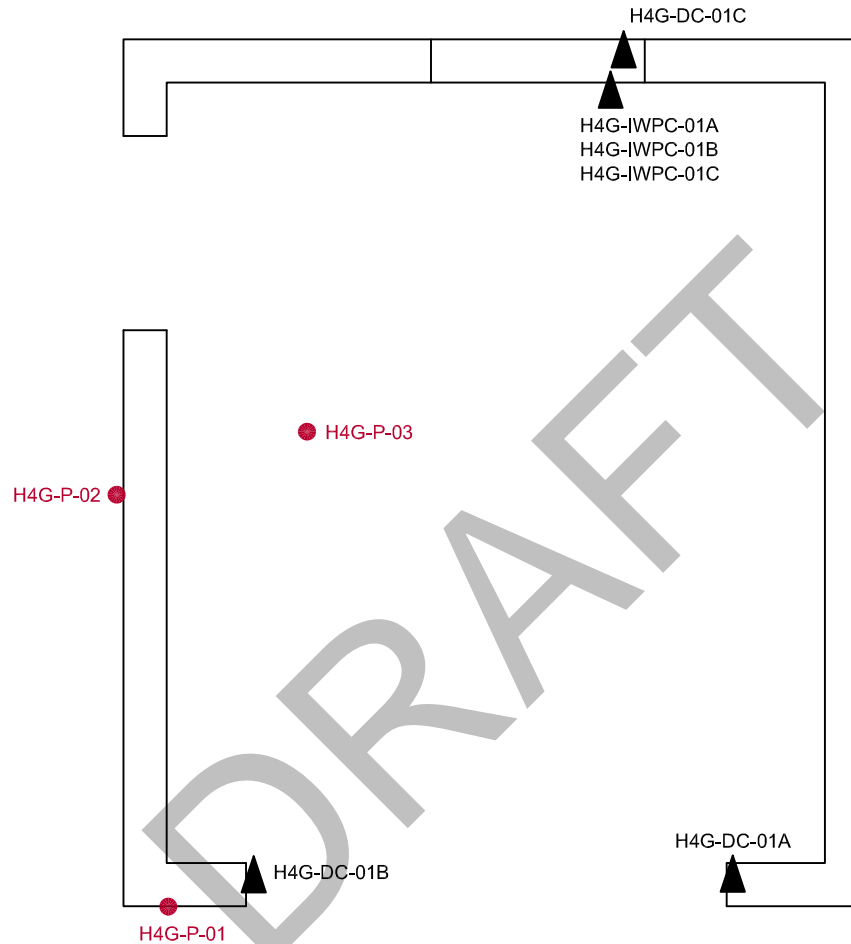
R-4.7 Silica

Silica may be present in concrete and cement observed in various locations throughout.

R-5.0 RECOMMENDATIONS TO ADDRESS IDENTIFIED ISSUES – HOUSE 4 GARAGE

In general, identified hazardous building materials should be handled in accordance with the recommendations for demolition that are provided in Section 5 of the main body of this report.

DRAFT



HOUSE 4 GARAGE

LEGEND

-  BULK SAMPLE
-  PAINT CHIP SAMPLE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

**FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS
AND BULK SAMPLE LOCATIONS**

HAINES JUNCTION, YT

Client: PARKS CANADA

Project No.:	144901924
Scale:	NTS
Date:	14/11/18
Dwn. By:	CD <small>SL2014110125</small> DM/VM
App'd By:	TW

Dwg. No.:

R



DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407481

CustomerID: 55JACQ30N

CustomerPO: 144901924.801

ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
4370 Dominion Street
5th Floor
Burnaby, BC V5G 4L7

Phone: (604) 436-3014
Fax: (604) 436-3752
Received: 10/10/14 11:01 AM
Analysis Date: 10/17/2014
Collected:

Project: 144901924.801

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via EPA 600/R-93/116 section 2.3

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
H4G-DC-01A 551407481-0442	DOOR CAULKING-WHITE - AROUND DOORS ON THE EXTERIOR	Brown/White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H4G-DC-01B 551407481-0443	DOOR CAULKING-WHITE - AROUND DOORS ON THE EXTERIOR	Brown/White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H4G-DC-01C 551407481-0444	DOOR CAULKING-WHITE - AROUND DOORS ON THE EXTERIOR	White Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H4G-IWPC-01A 551407481-0445	INTERIOR WINDOW PANE CAULKING-YELLOW - BETWEEN WINDOW FRAME AND GLASS PANE ON THE INTERIOR	Brown/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H4G-IWPC-01B 551407481-0446	INTERIOR WINDOW PANE CAULKING-YELLOW - BETWEEN WINDOW FRAME AND GLASS PANE ON THE INTERIOR	Brown/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected
H4G-IWPC-01C 551407481-0447	INTERIOR WINDOW PANE CAULKING-YELLOW - BETWEEN WINDOW FRAME AND GLASS PANE ON THE INTERIOR	White/Yellow Non-Fibrous Homogeneous	100	None	No Asbestos Detected

Analyst(s)

Jon Delos Santos (2)

Nicole Yeo (4)

Kevin Pang
or other approved signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. This report contains data that is (are) not covered by the NVLAP accreditation. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

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

Initial report from 10/17/2014 22:58:12

DRAFT

**EMSL Canada Inc.**

2756 Slough Street, Mississauga, ON L4T 1G3

Phone/Fax: 289-997-4602 / (289) 997-4607

<http://www.EMSL.com>torontolab@emsl.com

EMSL Canada Or 551407512
CustomerID: 55JACQ30L
CustomerPO: 144901924.801
ProjectID:

Attn: **Keith Irwin**
Stantec Consulting, Ltd.
500 - 4730 Kingsway
Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Received: 10/10/14 11:01 AM
Collected:

Project: **144901924.801****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)***

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Lead Concentration</i>
H4G-P-01	551407512-0075 Site: WHITE COLOUR Desc: EXTERIOR SIDING	10/16/2014		<90 ppm
H4G-P-02	551407512-0076 Site: BEIGE COLOUR Desc: INTERIOR WALLS	10/16/2014		<90 ppm
H4G-P-03	551407512-0077 Site: GREY COLOUR Desc: FLOOR	10/16/2014		1800 ppm

DRAFT

Kevin Pang
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010 % wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements established by the AIHA-LAP, unless specifically indicated otherwise.

Samples analyzed by EMSL Canada Inc. Mississauga, ON A2LA Accredited Environmental Testing Cert #2845.08

Initial report from 10/16/2014 17:03:43