

APPENDIX 1

HAZMAT REPORT

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L-4.0 FINDINGS—OPERATIONS BUILDING

The Operations Building was reportedly constructed in 1998. It is a two storey plus full basement wood frame structure with drywall, sheet flooring, and carpet interior finishes.

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

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

The following areas were not accessed, for the reasons indicated:

- Roof (no safe access to the roof to assess for or sample suspected asbestos-containing penetration sealants)

As such, limited comments, if any, will be provided regarding the presence, quantity or condition of hazardous building materials within the above-noted areas.

L-4.1 Asbestos

Although ACMs are unlikely to be present based on the reported construction date of the building, as a measure of diligence, Stantec sampled the following materials that have been historically known to contain asbestos:

- Sheet flooring
- Textured flooring
- Mastic
- Drywall joint compound

Thirteen 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 type, location and analytical result is presented in Table L-4.1.1, below. A copy of the certificate of analysis provided by EMSL for the suspected ACM sample submitted is attached at the end of this Appendix.

**Table L-4.1.1 Suspected ACM Sample Collection and Analysis Summary
Operations Building, Fort Langley National Historic Site, BC**

Sample Number	Material Description	Sample Location	Result (%/type asbestos)
OB-SF-01	Black sheet flooring	Main floor in south hallway	None detected
OB-SF-02	Blue smeared sheet flooring	Basement in south hallway	None detected
OB-TF-01A	Black textured flooring (bitumen gravel shingle)	Exterior ramp on west side of building	None detected
OB-TF-01B	Black textured flooring (bitumen gravel shingle)	Exterior ramp on west side of building	None detected
OB-TF-01C	Black textured flooring (bitumen gravel shingle)	Exterior ramp on west side of building	None detected
OB-DM-01A	Grey duct mastic	HVAC ducting in basement mechanical room	None detected
OB-DM-01B	Grey duct mastic	HVAC ducting in basement mechanical room	None detected
OB-DM-01C	Grey duct mastic	HVAC ducting in basement mechanical room	None detected
OB-DJC-01A	Drywall joint compound	Storage room in basement on south east wall	None detected
OB-DJC-01B	Drywall joint compound	Mechanical room in basement on south east wall	None detected
OB-DJC-01C	Drywall joint compound	Janitor room in basement on south east wall	None detected
OB-DJC-01D	Drywall joint compound	Kitchen in first floor on west wall	None detected
OB-DJC-01E	Drywall joint compound	2nd floor, office south of boardroom on west wall	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.

L-4.2 Lead

Lead is expected to be present in the following:

- Solder used in bell fittings for cast iron pipes
- Solder used in electrical equipment
- Vent and pipe flashings

With respect to paint, four paint chip sample was obtained from the predominant suspected LCP applications within the building. 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
Operations Building, Fort Langley National Historic Site, BC**

Sample No.	Sample Colour	Sample Location	Lab Result (ppm)	Lead Containing (Yes/No)
OB-P-01	Beige	Basement walls	<90	No
OB-P-02	Blue	Stairwell	<91	No
OB-P-03	Green	Kitchen	<99	No
OB-P-04	Grey	Interior second floor	<160	No

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

L-4.3 Polychlorinated Biphenyls

The 85 fluorescent light fixture was observed to have high-efficiency light tubes. The ballasts within such fixtures are not suspected to contain PCBs.

L-4.4 Mercury

Mercury vapour is expected to be present in fluorescent light bulbs/tubes observed in 85 fluorescent light fixture.

Mercury may also be present in paints and adhesives.

L-4.5 Mould

No mould or moisture damage was observed during the assessment.

L-4.6 Ozone-Depleting Substances

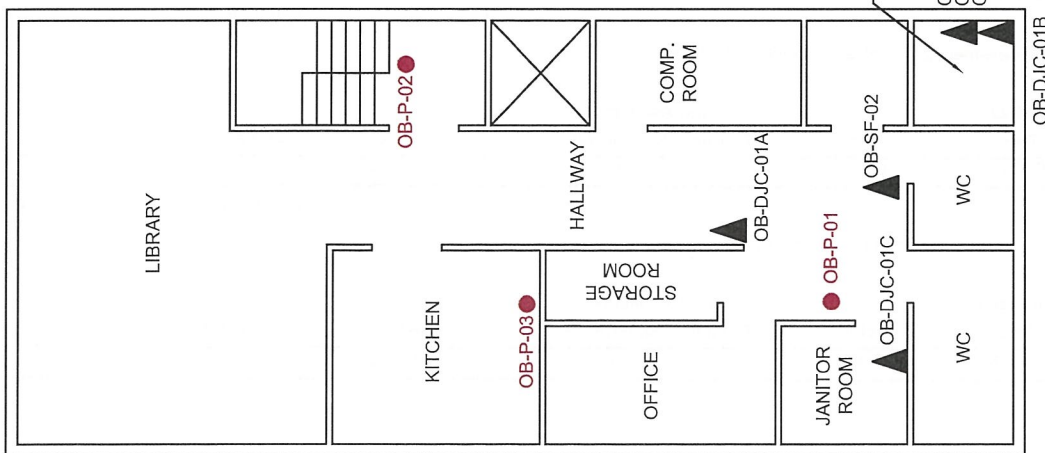
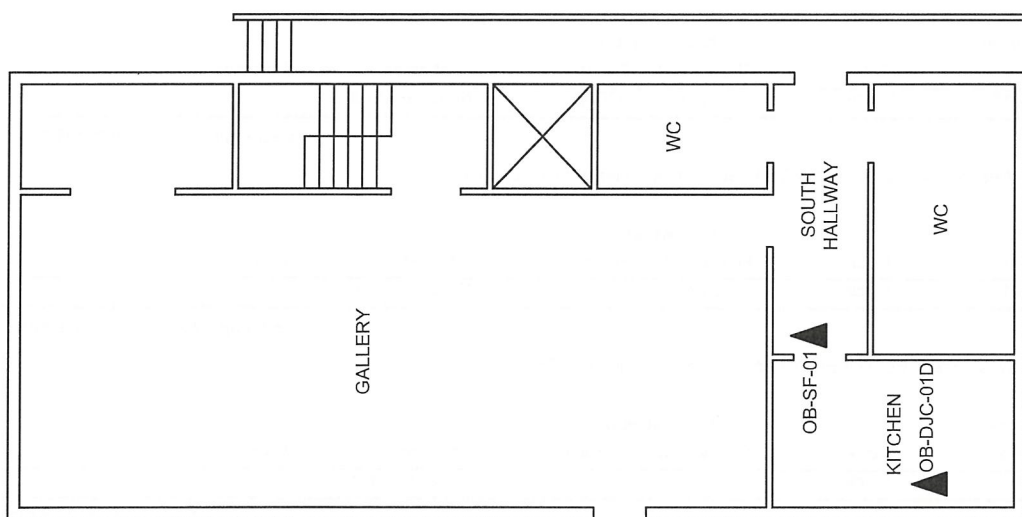
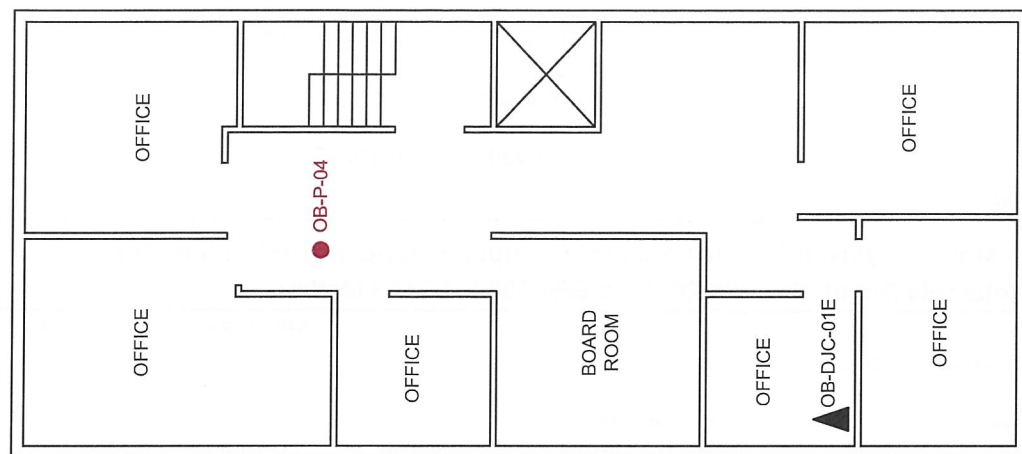
No suspected ODS-containing equipment was observed.

L-4.7 Silica

Silica is presumed to be present in the concrete foundation of the subject building.

L-5.0 RECOMMENDATIONS—OPERATIONS BUILDING

In general, identified hazardous building materials were observed to be in good condition and do not appear to require specific action to maintain compliance with applicable regulations for continued operations and maintenance. Refer to Section 5.0 of the main body of this report for applicable material-by-material general recommendations.



LEGEND

SECOND FLOOR

BULK SAMPLE LOCATION
PAINT CHIP
SAMPLE LOCATION

MAIN FLOOR

BASEMENT

OPERATIONS BUILDING (OP)

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

Dwg. No.:

Project No.: 123220330.200

Scale: N.T.S.

Date: 15/07/09

Dwn. By: CD PK SL2015070060

App'd By:

FLOOR PLAN SHOWING HAZARDOUS BUILDING MATERIALS AND BULK SAMPLE LOCATIONS

FORT LANGLEY NATIONAL HISTORIC SITE OF CANADA, FORT LANGLEY

23433 MAVIS AVENUE, FORT LANGLEY, BC

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Client:

Dwg. No.:


Project No.: 123220330.200

Scale: N.T.S.

Date: 15/07/09

Dwn. By: CD PK SL2015070060

App'd By:



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EMSL Canada Order 551507409
 Customer ID: 55JACQ30L
 Customer PO: 123220330.200
 Project ID:

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 Stantec Consulting, Ltd.
 500 - 4730 Kingsway
 Burnaby, BC V5H 0C6

Phone: (604) 412-3004
Fax:
Collected:
Received: 7/09/2015
Analyzed: 7/16/2015

Proj: Fort Langley/123220330.200

**Test Report: Asbestos Analysis in Bulk Material for Occupational Health and Safety British
 Columbia Regulation 188/2011 via EPA 600/R-93/116 Method**

Client Sample ID: OB-SF-01

Lab Sample ID: 551507409-0043

Sample Description: Main Floor in South Hallway/Black Sheet Flooring

TEST	Analyzed	Color	Non-Asbestos		Asbestos	Comment
	Date		Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/16/2015	Black	0.0%	100%	None Detected	

Client Sample ID: OB-SF-02

Lab Sample ID: 551507409-0044

Sample Description: Basement in South Hallway/Blue Smeared Shet Flooring

TEST	Analyzed	Color	Non-Asbestos		Asbestos	Comment
	Date		Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/16/2015	Yellow	0.0%	100%	None Detected	

Client Sample ID: OB-TF-01A

Lab Sample ID: 551507409-0045

Sample Description: Exterior Ramp on West Side of Building/Black Textured Flooring (Bitument Gravel Shingle)

TEST	Analyzed	Color	Non-Asbestos		Asbestos	Comment
	Date		Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/16/2015	Black	0.0%	100%	None Detected	

Client Sample ID: OB-TF-01B

Lab Sample ID: 551507409-0046

Sample Description: Exterior Ramp on West Side of Building/Black Textured Flooring (Bitument Gravel Shingle)

TEST	Analyzed	Color	Non-Asbestos		Asbestos	Comment
	Date		Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/16/2015	Black	0.0%	100%	None Detected	

Client Sample ID: OB-TF-01C

Lab Sample ID: 551507409-0047

Sample Description: Exterior Ramp on West Side of Building/Black Textured Flooring (Bitument Gravel Shingle)

TEST	Analyzed	Color	Non-Asbestos		Asbestos	Comment
	Date		Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/16/2015	Black	0.0%	100%	None Detected	

Client Sample ID: OB-DM-01A

Lab Sample ID: 551507409-0048

Sample Description: HVAC Ducting in Basement Mechanical Room/Grey Duct Mastic

TEST	Analyzed	Color	Non-Asbestos		Asbestos	Comment
	Date		Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/16/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: OB-DM-01B

Lab Sample ID: 551507409-0049

Sample Description: HVAC Ducting in Basement Mechanical Room/Grey Duct Mastic

TEST	Analyzed	Color	Non-Asbestos		Asbestos	Comment
	Date		Fibrous	Non-Fibrous		
PLM	7/16/2015	Gray	0%	100%	None Detected	



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EMSL Canada Order 551507409
Customer ID: 55JACQ30L
Customer PO: 123220330.200
Project ID:

Test Report: Asbestos Analysis in Bulk Material for Occupational Health and Safety British Columbia Regulation 188/2011 via EPA 600/R-93/116 Method

Client Sample ID: OB-DM-01C **Lab Sample ID:** 551507409-0050

Sample Description: HVAC Ducting in Basement Mechanical Room/Grey Duct Mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	7/16/2015	Gray	0.0%	100%	None Detected	

Client Sample ID: OB-DJC-01A

Lab Sample ID: 551507409-0051

Sample Description: Storage Room in Basement on South East Wall/Drywall Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/16/2015	White	0%	100%	None Detected	

Client Sample ID: OB-DJC-01B

Lab Sample ID: 551507409-0052

Sample Description: Mechanical Room in Basement on South East Wall/Drywall Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/16/2015	White	0%	100%	None Detected	

Client Sample ID: OB-DJC-01C

Lab Sample ID: 551507409-0053

Sample Description: Janitor Room in Basement on South East Wall/Drywall Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/16/2015	White	0%	100%	None Detected	

Client Sample ID: OB-DJC-01D

Lab Sample ID: 551507409-0054

Sample Description: Kitchen in First Floor on West Wall/Drywall Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/16/2015	White	0%	100%	None Detected	

Client Sample ID: OB-DJC-01E

Lab Sample ID: 551507409-0055

Sample Description: 2nd Floor, Office South of Boardroom on West Wall/Drywall Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	7/16/2015	White	0%	100%	None Detected	



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EMSL Canada Order 551507409
Customer ID: 55JACQ30L
Customer PO: 123220330.200
Project ID:

Test Report: Asbestos Analysis in Bulk Material for Occupational Health and Safety British Columbia Regulation 188/2011 via EPA 600/R-93/116 Method

Analyst(s):

Jon Delos Santos PLM (2)
Matthew Davis PLM Grav. Reduction (2)
Nicole Dimou PLM (1)
PLM Grav. Reduction (5)
Romeo Samson PLM (3)

Reviewed and approved by:

Matthew Davis
or Other Approved Signatory

None Detected = <0.5%. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP of any agency of the U.S. Government.

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

Initial report from: 07/16/2015 21:42:13

**EMSL Canada Inc.**

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CustomerID: 55JACQ30L
CustomerPO: 123220330
ProjectID:

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

Phone: (604) 412-3004
Fax:
Received: 07/09/15 11:35 AM
Collected:

Project: 123220330.200.100

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>
OB-P-01	551507426-0007 Site: BASE WALLS Desc: BEIGE		7/15/2015	<90 ppm
OB-P-02	551507426-0008 Site: STAIRWELL Desc: BLUE		7/15/2015	<91 ppm
OB-P-03	551507426-0009 Site: KITCHEN Desc: GREEN		7/15/2015	<99 ppm
OB-P-04	551507426-0010 Site: INTERIOR SECOND FLOOR Desc: GREY		7/15/2015	<160 ppm

Insufficient sample to reach reporting limit for sample#551507426-0008/-0009/-0010.

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

Initial report from 07/15/2015 17:34:01