



## **Public Works and Government Services Canada**

### **Hazardous Building Materials Survey**

#### **Agriculture and Agri-Food Canada**

**Crops and Livestock Research Centre, 440 University Ave., Charlottetown, PE**

**Buildings 7, 10, 14, 17 and 18**

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Buildings 7, 10, 14, 17 and 18**

Final Report | 16254

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00	2013-02-07	Draft Report
01	2013-03-06	Final Report

## EXECUTIVE SUMMARY

LVM / Maritime Testing Limited (LVM) was retained by Public Works and Government Services Canada (PWGSC) on behalf of the Agriculture and Agri-Food Canada (AAFC) to conduct hazardous building materials surveys (HBMS) at five (5) buildings at the AAFC Crops and Livestock Research Centre at 440 University Avenue in Charlottetown, PE in preparation for building demolition. The five buildings were as follows:

- ▶ Building 7 – 5 Car Garage
- ▶ Building 10 – Pea Viner Storage
- ▶ Building 14 – Small Equipment Storage
- ▶ Building 17 – Apple House
- ▶ Building 18 – Horticulture Building

The following previous hazardous material survey reports conducted by MGI Limited (MGI) were reviewed during this project by LVM:

- ▶ **MGI Limited** - Hazardous Building Material Survey with Recommendations for Building Demolition and Petroleum Hydrocarbon Impact Assessment, Agriculture and Agri-Food Canada, Home Farm Property, Building 7 (5 Car Garage), Charlottetown, Queens County, Prince Edward Island. June 2004.
- ▶ **MGI Limited** - Hazardous Building Material Survey with Recommendations for Building Demolition and Petroleum Hydrocarbon Assessment, Agriculture and Agri-Food Canada, Home Farm Property, Building 10 (Pea Viner Storage), Charlottetown, Queens County, Prince Edward Island. June 2004.
- ▶ **MGI Limited** - Hazardous Building Material Survey with Recommendations for Building Demolition and Petroleum Hydrocarbon Assessment, Agriculture and Agri-Food Canada, Home Farm Property, Building 14 (Small Equipment Storage), Charlottetown, Queens County, Prince Edward Island. June 2004.
- ▶ **MGI Limited** - Hazardous Building Material Survey with Recommendations for Building Demolition and Limited Soil Sampling Program and Follow up Soil Sampling Program, Agriculture and Agri-Food Canada, Home Farm Property, Building 17 (Apple House), Charlottetown, Queens County, Prince Edward Island. January 2005.
- ▶ **MGI Limited** - Hazardous Building Material Survey with Recommendations for Building Demolition and Limited Soil Sampling Program, Agriculture and Agri-Food Canada, Home Farm Property, Building 18 (Horticulture Building), Charlottetown, Queens County, Prince Edward Island. January 2005.

Results from previous hazardous material and soil sampling events (2001) were referenced in the above mentioned reports, though the 2001 reports were not reviewed. It is our understanding that the subject buildings have been vacant since the 2004-05 HBMS and the purpose of the current assessment is to confirm the results of the previous work and document any potential changes to the building conditions. The building surveys focused on the common hazardous materials investigated prior to building demolitions including asbestos, metals in paint, mould, mercury-containing thermostats, polychlorinated biphenyls (PCBs) containing light ballasts and radioactive smoke detectors. It should be noted that petroleum hydrocarbon assessment was not included in the scope of the current project though has been a part of the previous assessment. Any previous recommendations regarding petroleum hydrocarbon contamination have been carried forward from earlier reports.

This report will summarize any previous findings along with results of the current assessment. It is recommended that the 2004-05 HBMS reports be used in conjunction with this report.

The building surveys were completed on January 3, 2013. The following hazardous materials were noted during the assessment:

- ▶ Building 7 – 5 Car Garage
  - Metals in Paint
    - The white exterior paint on walls, doors, trim and brick siding exceeds the Prince Edward Island Department of Environment, Labour and Justice (PEIELJ) disposal guidelines for total and leachable lead, the federal Transportation of Dangerous Goods Act (TDGA) regulations and the federal Surface Coating Materials (SCM) regulations. The white paint must be disposed of at an off-island disposal facility licensed to accept such wastes, must be manifested as a Dangerous Good during transport and must comply with the Interprovincial Movement of Hazardous Waste Regulations under the Canadian Environmental Protection Act. Worker protection, including appropriate respirators and disposal clothing, must be considered when handling this materials
  - Microbial growth was visually identified on ceiling insulation and wooden roof trusses during the 2004 HBMS. No additional mould impacted materials were observed during the current assessment. The primary concern with these mould contaminated materials is human health protection during abatement/demolition.



► Building 10 – Pea Viner Storage

○ Metals in Paint

- The interior green paint satisfies the PEELJ disposal guidelines for leachable lead and leachable mercury; however total lead and mercury concentrations for the paint are unknown. Therefore, the green paint must also be disposed of at an approved municipal solid waste landfill that has a composite liner and leachate collection system unless Total Lead and Mercury concentrations are confirmed and satisfy applicable disposal guidelines.
- The exterior white paint on walls, shingles and doors, the grey paint on the interior walls and the white paint on the interior walls satisfy the PEELJ disposal guidelines for total and leachable lead and mercury and therefore may be disposed of at any Construction and Demolition (C&D) debris disposal site.
- All painted materials in Building 10 are either confirmed or assumed to exceed the federal SCM regulations. Therefore, proper safety precautions, including disposal clothing and appropriate respirators, should be worn during the handling of these materials.

○ Petroleum Hydrocarbons

- Petroleum surface stains are present on the concrete floor slab of Building 10. The stained areas of concrete can either be disposed of as petroleum contaminated waste at an approved disposal facility or the stains can be removed via scarification or pressure washing. Dust collected during scarification and/or the runoff collected during pressure washing must be disposed as petroleum contaminated waste at a licensed facility.
- The stained areas are located near cracks in the concrete floor. Therefore the potential for petroleum hydrocarbon impacted soils beneath the floor slab are present. Following the removal of the floor slab, the underlying soil should be assessed for petroleum impacts.

► Building 14 – Small Equipment Storage

○ Asbestos-Containing Materials

- An asbestos-containing heat resistant ceiling board, covering approximately 0.5 square meters (m<sup>2</sup>), was identified on the ceiling of the Main Room in Building 14 during the 2004 HBMS. The heat shield contains 10-30% chrysotile asbestos.
- Asbestos is classified as a hazardous material under the TDGA and requires specific requirements for transfer (i.e. manifests, placards, etc.). All asbestos-containing materials must be handled in accordance with Prince Edward Island Occupational Health and Safety Act (OSHA) Regulations -Section 49 and

asbestos waste must be disposed at an approved municipal solid waste disposal site.

- Metals in Paint

- The exterior white paint on the walls and shingles and the black exterior paint on the stairs and doors exceed the PEIELJ disposal guidelines for Total Lead, but satisfy the guidelines for Leachable Lead and Leachable Mercury. Therefore, the white and black exterior paint must be disposed of at an approved municipal solid waste landfill that has a composite liner and leachate collection system.
- The brown paint on the 2<sup>nd</sup> Floor shelving satisfies the PEIELJ disposal guidelines for leachable lead and leachable mercury; however total lead and mercury concentrations for the paint are unknown. Therefore, the brown paint must be disposed of at an approved municipal solid waste landfill that has a composite liner and leachate collection system unless Total Lead and Mercury concentrations are confirmed and satisfy applicable disposal guidelines.
- All painted materials in Building 10 are either confirmed or assumed to exceed the federal SCM regulations. Therefore, proper safety precautions, including disposal clothing and appropriate respirators, should be worn during the handling of these materials.

- ▶ Building 17 – Apple House

- Asbestos-Containing Materials

- The blanket chimney insulation was identified in the Chimney Building 14 during the 2004 HBMS. The insulation contains 60-80% chrysotile asbestos.
- The tar coating on the walls and ceiling in the refrigeration room contains 20% chrysotile asbestos.
- Asbestos is classified as a hazardous material under the TDGA and requires specific requirements for transfer (i.e. manifests, placards, etc.). All asbestos-containing materials must be handled in accordance with Prince Edward Island OHS Regulations -Section 49 and asbestos waste must be disposed at an approved municipal solid waste disposal site.

- Metals in Paint

- The exterior white paint on the shingles exceeds the PEIELJ disposal guidelines for Total Lead, but satisfies the guidelines for Leachable Lead and Leachable Mercury. Therefore, the white exterior paint must be disposed of at an approved municipal solid waste landfill that has a composite liner and leachate collection system.

- Based on field observations it is our opinion that the grey paint on the concrete foundation is the same paint found on the concrete foundation of Building 18 and may be disposed of at an approved C&D site.
- The silver paint found on the refrigeration walls and ceiling was found to contain no leachable lead or mercury and therefore it unlikely to contain total lead or mercury above the disposal criteria. The silver paint may be disposed of at an approved C&D site.
- All painted materials in Building 17 are either confirmed or assumed to exceed the federal SCM regulations. Therefore, proper safety precautions, including disposal clothing and appropriate respirators, should be worn during the handling of these materials.
- Microbial growth was visually identified on walls, ceiling and equipment throughout Building 17. The primary concern with these mould contaminated materials is human health protection during abatement/demolition.
- The tar coating on the walls and ceilings in the refrigeration room was found to contain a PCB concentration 0.69 mg/kg and must be disposed of at an approved municipal solid waste landfill.
- A 30,000 BTU air conditioning unit was identified on the main floor during the 2004 HBMS. The unit was missing its faceplate and therefore the type and quantity of refrigerant could not be determined. Access was limited in the building during the current investigation as the main floor has collapsed into the basement. The A/C unit was not observed, though still may be present. If encountered during demolition, the type of refrigerant should be determine and handle/disposed of according to provincial and federal regulations.
- ▶ Building 18 – Horticulture Building
  - Asbestos-Containing Materials
    - Wall and ceiling plaster on the 1<sup>st</sup> and 2<sup>nd</sup> floors contain 1-5% chrysotile asbestos.
    - Gaskets on the furnace in the basement contain 60% chrysotile asbestos.
    - Grey seamless flooring in the 2<sup>nd</sup> floor office contains 20% chrysotile asbestos.
    - Brown seamless flooring in the 2<sup>nd</sup> floor hallway and office contains 15% chrysotile asbestos.
    - Beige vinyl floor tiles in the 2<sup>nd</sup> floor bathroom contain 1% chrysotile asbestos.
    - Drywall joint compound throughout the building contains 3% chrysotile asbestos.
    - Asbestos is classified as a hazardous material under the TDGA and requires specific requirements for transfer (i.e. manifests, placards, etc.). All asbestos-containing materials must be handled in accordance with Prince Edward Island

OHSA Regulations -Section 49 and asbestos waste must be disposed at an approved municipal solid waste disposal site.

- Metals in Paint
  - The white paint on the exterior walls, doors and trim of Building 18 exceeds the PEIELJ disposal guidelines for total and leachable lead and the federal TDGA regulations. The white paint must be disposed of at an off-island disposal facility licensed to accept such wastes, must be manifested as a Dangerous Good during transport and must comply with the Interprovincial Movement of Hazardous Waste Regulations under the Canadian Environmental Protection Act.
  - The exterior grey paint on the foundation walls and steps and the interior red paint on the stairs satisfy the PEIELJ disposal guidelines for total and leachable lead and mercury and therefore may be disposed of at any Construction and Demolition (C&D) debris disposal site.
  - The interior white paint on the second floor walls and the cream paint on the main room walls satisfy the PEIELJ disposal guidelines for total and leachable lead and mercury, however the underlying plaster/drywall substrate was found to be asbestos-containing and therefore must be handled accordingly and disposed of at an approved municipal solid waste disposal site.
  - The brown paint on lab counters and wood trim satisfies the PEIELJ disposal guidelines for total and leachable lead and mercury, however these materials were found to contain pesticide residue and require disposal of at an approved municipal solid waste disposal site.
  - All other painted materials in Building 18 satisfy the PEIELJ disposal guidelines for leachable lead and leachable mercury; however total lead and mercury concentrations for the paints are unknown. Therefore, all other painted materials must be disposed of at an approved municipal solid waste landfill that has a composite liner and leachate collection system unless total lead and mercury concentrations are confirmed and satisfy applicable disposal guidelines.
  - All painted materials in Building 18 are either confirmed or assumed to exceed the federal Surface Coating Materials Regulations. Therefore, proper safety precautions, including disposal clothing and appropriate respirators, should be worn during the handling of these materials.
- Microbial growth and water damage was visually identified on walls, ceilings and flooring throughout Building 18. The primary concern with these mould contaminated materials is human health protection during abatement/demolition.

- Twelve smoke detectors, containing the radioactive element Americium-241 were observed in Building 18 (7 on main floor and 5 in basement). When handling the smoke detectors, care should be taken to prevent breakage of the protective shield. These materials must be disposed of with a licensed hazardous waste disposal contractor.
- Pesticide residue has been identified in the wood trim and the lab bench shelves in the main floor laboratories (Rms. 101 and 102). These pesticide contaminated materials must be disposed of at an approved facility (such as East Prince Waste Management Facility in Wellington, PEI) with PEIELJ approval.
- Petroleum Hydrocarbons
  - Petroleum surface stains are present on the concrete floor beneath the former furnace and aboveground fuel oil storage tanks. The stained areas of concrete can either be disposed of as petroleum contaminated waste at an approved disposal facility or the stains can be removed via scarification or pressure washing. Dust collected during scarification and/or the runoff collected during pressure washing must be disposed as petroleum contaminated waste at a licensed facility.
  - Previous soil investigations have identified petroleum hydrocarbon impacts beneath the basement floor slab. Contaminated soils were not included in the scope of the current assessment and a review of previous investigations was not undertaken. Delineation of the impacted soils was recommended by MGI Limited in the 2004-05 HBMS.

# 1 INTRODUCTION

LVM / Maritime Testing Limited (LVM) was retained by Public Works and Government Services Canada (PWGSC) on behalf of the Agriculture and Agri-Food Canada (AAFC) to conduct hazardous building materials surveys (HBMS) at five (5) buildings at the AAFC Crops and Livestock Research Centre at 440 University Avenue in Charlottetown, PE in preparation for building demolition. The five buildings were as follows:

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Results from previous hazardous material and soil sampling events (2001) were referenced in the above mentioned reports, though the 2001 reports were not reviewed. It is our understanding that the subject buildings have been vacant since the 2004-05 HBMS and the purpose of the current assessment is to confirm the results of the previous work and document any potential changes to the building conditions. The building surveys focused on the common hazardous materials investigated prior to building demolitions including asbestos, metals in paint, mould, mercury-containing thermostats, polychlorinated biphenyls (PCBs) containing light ballasts and radioactive smoke detectors. It should be noted that petroleum hydrocarbon assessment was not included in the scope of the current project though has been a part of the previous assessment. Any previous recommendations regarding petroleum hydrocarbon contamination have been carried forward from earlier reports.

## 2 SURVEY METHODOLOGY

The hazardous building materials surveys consisted of a walkthrough of the five above-mentioned buildings on Jan 3, 2013. During the walkthrough, previously identified hazardous materials by other consultants were quantified and potentially unidentified hazardous materials were sampled, analyzed and quantified.

### 2.1 Asbestos

During the walkthrough, samples were collected of every material that could have been reasonably expected to contain asbestos. These materials included roofing, ceiling, wall, and floor materials and any kind of observed thermal insulation. Materials that were previously sampled by MGI Limited in 2004-05 were not re-sampled during the surveys. A total of 14 samples was collected from the five buildings

All collected samples were submitted to EMSL Canada Inc. in Mississauga, Ontario, a National Voluntary Laboratory Accreditation Program (NVLAP) certified laboratory, for analysis by polarized light microscopy. The results of the current sampling program and a summary of previous results are presented in Sections 3.1 – 8.1. Laboratory certificates are provided in Appendix 3.

### 2.2 Paint Survey

All paint had been previously investigated by MGI in 2001 and 2004-05. No paint samples were collected during this assessment. Results of the previous paint surveys are summarized in Sections 3.2 - 8.2.

### 2.3 Polychlorinated Biphenyls (PCBs)

Fluorescent lamps ballasts were inspected by MGI Limited in 2004-05. No ballasts were inspected during the current survey. Results of the previous lamp ballast survey are summarized in Sections 3.3 – 8.3.

One sample of roofing tar was submitted to Maxxam Analytics Laboratory in Bedford, NS for PCB analysis.

### 2.4 Microbial Growth

During the walkthrough an inspection for microbial growth was conducted and visual signs of mould growth were noted. No sampling or analysis was performed.

### 2.5 Mercury-Containing Devices

During the walkthrough, instruments that could contain mercury such as thermometers and thermostats were noted if present.

### 2.6 Smoke Detectors

During the walkthrough, smoke detectors containing radioactive elements were noted when encountered.

### 2.7 Other Hazardous Materials

A visual inspection for other hazardous materials that require special handling or disposal was also conducted. Other such materials include Ozone Depleting Substances (ODS), Lead/Lithium Containing Batteries and Urea Formaldehyde Foam Insulation (UFFI). Pesticide contaminated building materials were noted in Building 18 during the 2004-05 MGI HBMS.

## 3 HANDLING AND DISPOSAL

### 3.1 Asbestos

Asbestos is classified as a hazardous material under the Transportation of Dangerous Goods Act (TDGA), Transport Canada and requires specific requirements for transfer (i.e. manifests, placards, etc.). All asbestos-containing materials must be handled in accordance with Prince Edward Island Occupational Health and Safety Act Regulations -Section 49 and asbestos waste must to be disposed at an approved municipal solid waste disposal site.



## 3.2 Metals in Paint

### 3.2.1 Handling Requirements

The Surface Coating Materials (SCM) regulations under the Consumer Products Safety Act of Canada considers surfaces with a lead content greater than 90 mg/kg as lead containing and mercury content greater than 10 mg/kg as mercury containing. Any disturbance or removal of lead painted materials (peeling paint) that may generate lead dust or respirable aerosols will need to conform to the federal and provincial Occupational Health and Safety Act Regulations (OHSA). All work should be carried out by individuals qualified to handle metals-containing materials and will require, as a minimum, workers to wear proper personal protection (respirators, disposable clothing). Use of chemical strippers to reduce the amount of dust generation might be useful if the amount of paint to be removed is significant.

### 3.2.2 Disposal Criteria

Prince Edward Island Department of Environment, Labour and Justice (PEIELJ) has established guidelines that restrict certain materials from municipal landfills and Construction and Demolition (C&D) waste disposal sites, which could potentially leach/migrate into groundwater and create adverse environmental effect. Lead and mercury can leach from its base material into soil and groundwater creating environmental impacts. Materials with concentrations above applicable PEIELJ guidelines (lead 1000 mg/kg, mercury 10 mg/kg) undergo leachate testing to assess whether the leachate exceeds the regulatory limit (lead 5 mg/L and mercury 0.1 mg/L). Disposal criteria for lead and mercury containing paints are based on the Total and Leachable concentrations and are outlined as follows:

- ▶ Materials that have total lead and mercury concentrations below the applicable Total guidelines can be disposed of at any C&D disposal site.
- ▶ Materials that have total lead and/or mercury concentrations above the applicable Total guidelines and leachable lead and/or mercury concentrations below the applicable Leachate guidelines must be disposed of at an approved municipal solid waste landfill that has a composite liner and leachate collection system (such as East Prince Waste Management Facility in Wellington, PEI), with PEIELJ approval.
- ▶ Materials that have total and leachable lead and/or mercury concentrations above respective guidelines must be transported out of province for disposal.

Materials with leachable lead concentrations greater than 5 mg/L and leachable mercury concentrations greater than 0.1 mg/L must be manifested as dangerous goods during transport under the federal TDGA Regulations. If materials are to be disposed of out of province, transportation must comply with the Interprovincial Movement of Hazardous Waste Regulations under the Canadian Environmental Protection Act.

### 3.3 Polychlorinated Biphenyls (PCBs)

PEIELJ acceptance levels for PCB-containing materials are 50 mg/kg for solids and 2 mg/kg for liquids. All PCB-containing materials satisfying the acceptance levels may be disposed of at an approved municipal solid waste landfill. Materials exceeding the PEIELJ acceptance levels must be disposed of through a licensed hazardous waste contractor for out-of-province disposal.

### 3.4 Microbial Growth

There are no provincial disposal guidelines for mould impacted building materials. These materials may be disposed of at any C&D disposal site, provided they do not contain other hazardous materials (lead paint, asbestos, etc.).

Proper worker protection, including disposable clothing and appropriate respirators, should be worn when working with or around mould impacted building materials.

### 3.5 Mercury-Containing Devices

Mercury-containing devices should be safely packaged and disposed of through a licensed hazardous waste disposal contractor or recycling facility to prevent uncontrolled release of mercury.

### 3.6 Smoke Detectors

Given the low levels of radioactive materials contained with smoke detectors, they are exempt from the Canadian Nuclear Safety Commission (CNSC) *Packaging and Transport of Nuclear Substances Regulations SOR 208/2000, Nuclear Safety and Control Act* and therefore require no special handling or transportation considerations. Smoke detectors containing radioactive material should then be either sent back to the manufacturer or to a licensed hazardous waste disposal contractor.

### 3.7 Other Hazardous Materials

#### 3.7.1 Pesticides

No provincial disposal guidelines related to building materials contaminated with pesticide residue have been developed. A phone conversation with Barry Jackson, Environmental and Regulatory Coordinator with PEIELJ confirmed that these materials are permitted for disposal at East Prince Waste Management Facility in Wellington, PEI if they can be shown that they are not likely to leach pesticides. All pesticide contaminated building materials identified during previous surveys at the buildings underwent leachate analysis and results indicate that they may be disposed of at East Prince Waste Management Facility in Wellington, PEI.

Proper worker protection, including disposable clothing and appropriate respirators, should be worn when working with or around pesticide impacted building materials.

### 3.7.2 Petroleum Stained Concrete

Petroleum stained concrete can either be disposed of as petroleum contaminated waste at an approved disposal facility or the stains can be removed via scarification or pressure washing. Dust collected during scarification and/or the runoff collected during pressure washing must be disposed as petroleum contaminated waste at a licensed facility.

### 3.7.3 Ozone Depleting Substances

A 30,000 BTU air conditioning unit was identified on the main floor during the 2004 HBMS. The unit was missing its faceplate and therefore the type and quantity of refrigeration gas could not be determined. Access was limited in the building during the current investigation as the main floor has collapsed into the basement. The A/C unit was not observed, though still may be present. If encountered during demolition, the type of refrigerant should be determined, and handled and disposed of according to provincial and federal regulations.

## 4 BUILDING 7 – 5 CAR GARAGE

During the building survey, LVM staff had access to all areas of Building 7, including roofing materials. Hazardous building materials identified during this survey and previous surveys by MGI are summarized below.

### 4.1 Asbestos

During the walkthrough, one sample of a roofing shingle was collected and submitted for asbestos analysis. Laboratory results indicate that the sample was non-asbestos containing.

No asbestos-containing materials were identified in Building 7 during previous sampling events.

Asbestos sample locations are provided on Figure 1, Appendix 1. Current results are provided in the table below. Laboratory certificates are provided in Appendix 3.

Table 1 Bulk Asbestos Results – AAFC Building 7.

ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	PERCENT ASBESTOS
7-1	Bldg 7, Roof	Shingle	None Present

## 4.2 Paint Survey

No paint samples were collected during the current assessment. The paint survey was conducted by MGI during sampling events in 2001 and 2004.

The purpose of sampling is to address both health and disposal concerns, with respect to heavy metal content, for painted materials that will require handling and disposal during the upcoming building demolition.

Analytical paint results from the previous sampling events are provided in the following table:

Table 2 Metals in Paints – AAFC Building 7.

ID	SAMPLING DATE	TOTAL LEAD (MG/KG)	LEACHABLE LEAD (MG/L)	TOTAL MERCURY (MG/KG)	LEACHABLE MERCURY (MG/L)
Bldg 7, PS-1: white paint on exterior walls	2001, MGI Limited	<b>1800</b>	--	--	--
B7-O1: white on exterior door, trim and brick siding	2004, MGI Limited	--	<u><b>5.85</b></u>	--	1.6
<b>PEIELJ -Disposal Criteria*</b>		1000	5	10	0.1
<b>Surface Coating Materials Regulation**</b>		90	-	10	-
<b>TDG Act***</b>			5		0.1

\* Bold values exceed Provincial Disposal Guidelines

\*\* *Italicized* values exceed Federal Surface Coating Materials Regulation

\*\*\* Underlined values exceed the Federal Transportation of Dangerous Good Act (TDGA) Regulations

Based on the sample descriptions, it is assumed that samples *Bldg 7, PS-1* and *B7-O1* are of the same material. The results of the two sampling events (2001 and 2004) have been applied to the applicable guidelines to determine the following handling and disposal criteria

The white paint on the exterior walls, doors, trim and brick siding of Building 7 exceeds the PEIELJ disposal guidelines for total and leachable lead and the federal TDGA Regulations. Therefore, the white paint must be disposed of at an off-island disposal facility licensed to accept such wastes. During transport, compliance with the TDGA Regulations and the

Interprovincial Movement of Hazardous Waste Regulations and must be manifested as a Dangerous Good during transport.

The white exterior paint also exceeds the federal SCM regulations. Therefore, proper safety precautions, including disposal clothing and appropriate respirators, should be worn during the handling of this material.

#### **4.3 Polychlorinated Biphenyls (PCBs)**

One potentially PCB-containing HID Light capacitor was identified in 2004 by MGI. The light capacitor has since been removed and is no longer present at the building.

No PCB containing equipment or materials were identified during the current assessment.

#### **4.4 Microbial Growth**

Microbial growth was visually identified on ceiling insulation and on the wooden roof trusses during the 2004 HBMS.

No additional mould growth was observed during the current assessment.

Proper worker protection, including disposable clothing and appropriate respirators, should be worn when working with or around mould impacted building materials. There are no provincial disposal guidelines for mould impacted building materials. These materials may be disposed of at any C&D disposal site, provided they do not contain other hazardous materials (lead paint, asbestos, etc.).

#### **4.5 Mercury Containing Devices**

No mercury containing devices were observed in Building 7.

#### **4.6 Smoke Detectors**

No radioactive material-containing smoke detectors were observed in Building 7.

#### **4.7 Other Hazardous Material**

No other hazardous building materials requiring special handling or disposal considerations were identified in Building 7.

## **5 BUILDING 10 – PEA VINER STORAGE**

During the building survey, LVM staff had access to all areas of Building 10, including the roof. Hazardous building materials identified during this survey and previous surveys by MGI are summarized below.

## 5.1 Asbestos Survey

During the walkthrough, one sample of a roofing shingle was collected and submitted for asbestos analysis. Laboratory results indicate that the sample was non-asbestos containing.

No asbestos-containing materials were identified in Building 10 during previous sampling events.

Asbestos sample locations are provided on Figure 2, Appendix 1. Current results are provided in the table below. Laboratory certificates are provided in Appendix 3.

Table 3 Bulk Asbestos Results – AAFC Building 10.

ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	PERCENT ASBESTOS
10-1	Bldg 10, Roof	Shingle	None Present

## 5.2 Paint Survey

No paint samples were collected during the current assessment. The paint survey was conducted by MGI during sampling events in 2001 and 2004.

The purpose of sampling is to address both health and disposal concerns, with respect to heavy metal content, for painted materials that will require handling and disposal during the upcoming building demolition.

Analytical paint results from the previous sampling events are provided in the following table:

Table 4 Metals in Paints – AAFC Building 10.

ID	SAMPLING DATE	TOTAL LEAD (MG/KG)	LEACHABLE LEAD (MG/L)	TOTAL MERCURY (MG/KG)	LEACHABLE MERCURY (MG/L)
Bldg 10, PS-1: white paint on exterior walls and door	2001, MGI Limited	350	--	--	--
Bldg 10, PS-2: grey paint on interior walls	2001, MGI Limited	570	--	--	--
Bldg 10, PS-3: white paint on interior walls	2001, MGI Limited	300	--	--	--
B10-O1:white paint on exterior	2004, MGI Limited	--	0.91 (Dup – 2.95)	--	0.0039

ID	SAMPLING DATE	TOTAL LEAD (MG/KG)	LEACHABLE LEAD (MG/L)	TOTAL MERCURY (MG/KG)	LEACHABLE MERCURY (MG/L)
shingles					
B10-I1: white paint on interior walls	2004, MGI Limited	--	0.45	--	0.0003
B10-I2: green paint on interior walls	2004, MGI Limited	--	0.68	--	0.00033
<b>PEIELJ -Disposal Criteria*</b>		1000	5	10	0.1
<b>Surface Coating Materials Regulation**</b>		90	-	10	-
<b>TDG Act***</b>			5		0.1

\* Bold values exceed Provincial Disposal Guidelines

\*\* *Italicized* values exceed Federal Surface Coating Materials Regulation

\*\*\* Underlined values exceed the Federal Transportation of Dangerous Good Act Regulations

Based on the sample descriptions, it is assumed that the following samples are of the same material:

- ▶ Bldg 10, PS-1 and B10-O1
- ▶ Bldg 10, PS-3 and B10-I1

The results of the two sampling events (2001 and 2004) have been applied to the applicable guidelines to determine the following handling and disposal criteria.

All painted materials in Building 10, except the green paint on interior walls satisfy the PEIELJ Disposal Guidelines and the TDGA Regulation and may be disposed of at a C&D disposal site.

Total lead and mercury concentrations for the interior green paint are unknown; however, all leachable lead and mercury results satisfy the PEIELJ disposal guidelines for Leachable Lead and Leachable Mercury. Given the uncertainty with respect to its total lead and mercury content and the relative small quantity of green painted materials, it would be prudent to dispose of the material with the waste from the other building demolitions bound for an approved municipal landfill. Therefore, the green paint should be disposed of at an approved municipal solid waste landfill that has a composite liner and leachate collection system unless Total Lead and Mercury concentrations are confirmed and satisfy applicable disposal guidelines.

Though total and mercury concentrations are unknown for some types and colours of paints, all painted surfaces are assumed to exceed the federal SCM regulations. Therefore, proper safety precautions, including disposal clothing and appropriate respirators, should be worn during the handling of these materials

### 5.3 Polychlorinated Biphenyls (PCBs)

No PCB-containing equipment or materials were identified during either the current or the previous assessments.

### 5.4 Microbial Growth

Microbial growth was identified on walls and ceiling during the 2004 HBMS. No additional mould growth was observed during the current assessment.

Proper worker protection, including disposable clothing and appropriate respirators, should be worn when working with or around mould impacted building materials. There are no provincial disposal guidelines for mould impacted building materials. These materials may be disposed of at any C&D disposal site, provided they do not contain other hazardous materials (lead paint, asbestos, etc.).

### 5.5 Mercury Containing Devices

No mercury containing devices were observed in Building 10.

### 5.6 Smoke Detectors

No radioactive material- containing smoke detectors were observed in Building 10.

### 5.7 Other Hazardous Material

Minor petroleum stains were observed on the surface of the concrete floor slab in Building 10. The stained areas of concrete can either be disposed of as petroleum contaminated waste at an approved disposal facility or the stains can be removed via scarification or pressure washing. Dust collected during scarification and/or the runoff collected during pressure washing must be disposed as petroleum contaminated waste at a licensed facility. Stained areas are outlined on Figure 2, Appendix 1.

The stained areas are located near cracks in the concrete floor. Therefore the potential for petroleum hydrocarbon impacted soils beneath the floor slab are present. Following the removal of the floor slab, the underlying soil should be assessed for petroleum impacts.

No other hazardous building materials requiring special handling or disposal considerations were identified in Building 10.



## 6 BUILDING 14 – SMALL EQUIPMENT STORAGE

During the building survey, LVM staff had access to all areas of Building 14, including the roof. Hazardous building materials identified during this survey and previous surveys by MGI are summarized below.

### 6.1 Asbestos

During the walkthrough, one sample of a roofing shingle was collected and submitted for asbestos analysis. Laboratory results indicate that the sample was non-asbestos containing. Ceiling board in the main room was identified as containing 10-30% chrysotile asbestos during the 2004 HMBS.

No other asbestos-containing materials were identified in Building 14.

Asbestos sample locations are provided on Figure 3, Appendix 1. Current and past results are provided in the table below. Laboratory certificates are provided in Appendix 3.

Table 5 Bulk Asbestos Results – AAFC Building 14.

ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	PERCENT ASBESTOS
B-14 (MGI -2004)	Bldg 14, Main Room	Ceiling Board	10-30% chrysotile
14-1	Bldg 14, Roof	Shingle	None Present

### 6.2 Paint Survey

No paint samples were collected during the current assessment. The paint survey was conducted by MGI during sampling events in 2001 and 2004.

The purpose of sampling is to address both health and disposal concerns, with respect to heavy metal content, for painted materials that will require handling and disposal during the upcoming building demolition.

Analytical paint results from the previous sampling events are provided in the following table:

Table 6 Metals in Paints – AAFC Building 14.

ID	SAMPLING DATE	TOTAL LEAD (MG/KG)	LEACHABLE LEAD (MG/L)	TOTAL MERCURY (MG/KG)	LEACHABLE MERCURY (MG/L)
Bldg 14, PS-1: white paint on exterior walls	2001, MGI Limited	<b>9000</b>	--	--	--
Bldg 14, PS-2: black paint on exterior stairs	2001, MGI Limited	<b>5500</b>	--	--	--
B14-I1: brown paint on 2 <sup>nd</sup> floor shelving	2004, MGI Limited	--	0.81	--	0.00078
B14-O2: white paint on exterior shingles	2004, MGI Limited	--	4.43	--	0.0013
B14-O3: black paint on exterior door and stairs	2004, MGI Limited	--	1.08	--	0.062
<b>PEIELJ -Disposal Criteria*</b>		1000	5	10	0.1
<b>Surface Coating Materials Regulation**</b>		90	-	10	-
<b><u>TDG Act***</u></b>			5		0.1

\* Bold values exceed Provincial Disposal Guidelines

\*\* *Italicized* values exceed Federal Surface Coating Materials Regulation

\*\*\* Underlined values exceed the Federal Transportation of Dangerous Good Act

Based on the sample descriptions, it is assumed that the following samples are of the same material:

- ▶ Bldg 14, PS-1 and B14-O2
- ▶ Bldg 14, PS-2 and B14-O3

The results of the two sampling events (2001 and 2004) have been applied to the applicable guidelines to determine the following handling and disposal criteria.

The exterior white paint on the shingles and the black exterior paint on the stairs and doors exceed the PEIELJ disposal guidelines for total lead, but satisfy the guidelines for leachable lead and leachable mercury. Therefore, the white and black exterior paint must be disposed of at an approved municipal solid waste landfill that has a composite liner and leachate collection system (such as East Prince Waste Management Facility in Wellington, PEI). These materials satisfy the TDGA Regulations and are not required to be manifested as a Dangerous Good during transport.

Total lead and mercury concentrations for the brown paint on the shelving are unknown; however all leachable lead and mercury results satisfy the PEIELJ disposal guidelines for leachable lead and leachable mercury. Given the relatively small quantity of painted shelving in the building, it was determined that it would be more cost effective to simply include the shelving with the exterior painted materials rather than re-analyze for total lead and mercury content. Therefore, the brown paint must also be disposed of at an approved municipal solid waste landfill that has a composite liner and leachate collection system unless total lead and mercury concentrations are confirmed and satisfy applicable disposal guidelines.

Though total lead and mercury concentrations are unknown for some types and colours of paints, all painted surfaces are assumed to exceed the federal SCM regulations. Therefore, proper safety precautions, including disposal clothing and appropriate respirators, should be worn during the handling of these materials

### 6.3 Polychlorinated Biphenyls (PCBs)

A fluorescent lamp ballast survey was conducted in 2004-05 by MGI Limited. The survey identified 2 total lamp ballasts in the building and determined that both ballasts are not PCB containing.

No lamp ballasts were inspected during this assessment.

### 6.4 Microbial Growth

No microbial growth was observed during the walkthrough of Building 14.

### 6.5 Mercury Containing Devices

No mercury containing devices were observed in Building 14.

### 6.6 Smoke Detectors

No radioactive material-containing smoke detectors were observed in Building 14.

### 6.7 Other Hazardous Material

No other hazardous building materials requiring special handling or disposal considerations were identified in Building 14.

## 7 BUILDING 17 – APPLE HOUSE

During the building survey, LVM staff had access to all areas of Building 17, including the roof. However the structural integrity of the building was in doubt and therefore intrusive investigation was limited. Hazardous building materials identified during this survey and previous surveys by MGI are summarized below.

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## 7.1 Asbestos

During the walkthrough, a sample of a roofing shingle and a sample of a tar coating over a cork material on the walls and ceiling in the refrigeration room were collected and submitted for asbestos analysis. An additional sample of roofing shingle (17-3) was submitted for analysis as a QA/QC duplicate. Laboratory results indicate that both shingle samples were non-asbestos containing. The tar coating in the refrigeration room was found to contain 20% chrysotile asbestos.

During the 2004 HMBS, a blanket insulation in the former chimney flu was found to contain 60-80% chrysotile asbestos and the cork insulation (not the tar coating) was confirmed as non-asbestos.

No other asbestos-containing materials were identified in Building 17.

Asbestos sample locations are provided on Figure 4, Appendix 1. Current and past results are provided in the table below. Laboratory certificates are provided in Appendix 3.

Table 7 Bulk Asbestos Results – AAFC Building 17.

ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	PERCENT ASBESTOS
B-17 (MGI -2005)	Bldg 17, Chimney	Blanket Insulation	60-80% chrysotile
Home-04ASB-02	Bldg 17, Refrigeration Room	Cork Insulation	None Present
17-1	Bldg 17, Roof	Shingle	None Present
17-2	Bldg 17, Walls and Ceiling in Refrigeration Room	Tar Coating	20% chrysotile
17-3 (Dup of 17-1)	Bldg 17, Roof	Shingle	None Present

## 7.2 Paint Survey

No paint samples were collected during the current assessment. The paint survey was conducted by MGI during sampling events in 2001 and 2004.

The purpose of sampling is to address both health and disposal concerns, with respect to heavy metal content, for painted materials that will require handling and disposal during the upcoming building demolition.

Analytical paint results from the previous sampling events are provided in the following table:

Table 8 Metals in Paints – AAFC Building 17.

ID	SAMPLING DATE	TOTAL LEAD (MG/KG)	LEACHABLE LEAD (MG/L)	TOTAL MERCURY (MG/KG)	LEACHABLE MERCURY (MG/L)
Bldg 17, PS-1: white paint on exterior walls	2001, MGI Limited	<b><i>90,000</i></b>	--	--	--
B17-O1: white paint on exterior shingles	2004, MGI Limited	--	0.05	--	0.006
B17-O2: grey paint on exterior concrete foundation	2004, MGI Limited	--	0.08	--	0.019
B17-I1: silver paint on refrigeration room walls	2004, MGI Limited	--	< 0.05	--	< 0.00005
<b>PEIELJ -Disposal Criteria*</b>		1000	5	10	0.1
<b>Surface Coating Materials Regulation**</b>		90	-	10	-
<b>TDG Act***</b>			5		0.1

\* Bold values exceed Provincial Disposal Guidelines

\*\* *Italicized* values exceed Federal Surface Coating Materials Regulation

\*\*\* Underlined values exceed the Federal Transportation of Dangerous Good Act

Based on the sample descriptions, it is assumed that the following samples are of the same material:

- ▶ *Bldg 17, PS-1 and B17-O1*

The results of the two sampling events (2001 and 2004) have been applied to the applicable guidelines to determine the following handling and disposal criteria.

The exterior white paint on the walls and shingles exceeds the PEIELJ disposal guidelines for total lead, but satisfies the guidelines for leachable lead and leachable mercury.

Based on field observations it is our opinion that the grey paint on the concrete foundation is the same paint found on the concrete foundation of Building 18. Therefore, the material may be disposed of at an approved C&D site.

The silver paint found on the refrigeration walls and ceiling was found to contain no leachable lead or mercury and therefore it unlikely to contain total lead or mercury above the disposal criteria. The silver paint may be disposed of at an approved C&D site.

Though total lead and mercury concentrations are unknown for some types and colours of paints, all painted surfaces are assumed to exceed the federal SCM regulations. Therefore, proper safety precautions, including disposal clothing and appropriate respirators, should be worn during the handling of these materials.

### 7.3 Polychlorinated Biphenyls (PCBs)

One sample of the tar coating on the walls and ceilings in the refrigeration room was submitted for PCB analysis. Analytical results indicate a PCB concentration of 0.69 mg/kg in the tar. PEIELJ acceptance levels for PCB-containing materials are 50 mg/kg for solids and 2 mg/kg for liquids. Therefore, PCB-containing tar may be disposed of at an approved solid waste landfill.

No other PCB-containing equipment or materials were identified during either the current or the previous assessments.

### 7.4 Microbial Growth

Microbial growth was identified on walls, ceiling and equipment during the 2004 HBMS. No additional mould growth was observed during the current assessment.

Proper worker protection, including disposable clothing and appropriate respirators, should be worn when working with or around mould impacted building materials. There are no provincial disposal guidelines for mould impacted building materials. These materials may be disposed of at any C&D disposal site, provided they do not contain other hazardous materials (lead paint, asbestos, etc.).

### 7.5 Mercury Containing Devices

No mercury containing devices were observed in Building 17.

### 7.6 Smoke Detectors

No radioactive material-containing smoke detectors were observed in Building 17.

### 7.7 Other Hazardous Material

A 30,000 BTU air conditioning unit was identified on the main floor during the 2004 HBMS. The unit was missing its faceplate and therefore the type and quantity of refrigeration gas could not be determined.

Access was limited in the building during the current investigation as the main floor has collapsed into the basement. The A/C unit was not observed, though still may be present. If encountered during demolition, the type of refrigerant should be determined, and handled and disposed of according to provincial and federal regulations.

No other hazardous building materials requiring special handling or disposal considerations were identified in Building 17.

## 8 BUILDING 18 – HORTICULTURE BUILDING

During the building survey, LVM staff had access to all areas of Building 18, including the roof. Hazardous building materials identified during this survey and previous surveys by MGI are summarized below.

### 8.1 Asbestos

During the walkthrough, 10 samples (including one QA/QC duplicate) of various building materials were collected and submitted for asbestos analysis.

A tan gasket located on the furnace was found to contain 60% chrysotile asbestos.

Three different varieties of flooring material were also found to contain asbestos. The grey seamless flooring in the upstairs office was found to contain 20% chrysotile asbestos, the brown seamless flooring in the upstairs hall and office was found to contain 15% chrysotile asbestos and the beige floor tile in the upstairs bathroom was found to contain 1% chrysotile asbestos.

Two samples (plus one lab duplicate) of drywall joint compound were collected from Building 18. One sample was collected from the basement and was found to be non-asbestos containing. The second was collected from the upstairs bedroom was found to contain 4% chrysotile asbestos. It is our opinion that **all drywall joint compound** in the building is of the same composition and should be considered asbestos-containing.

In addition to the results of the current investigation, previous sampling events have identified the plaster walls and ceilings on the first and second floor to contain 1-5% chrysotile asbestos.

Asbestos sample locations are provided on Figure 5, Appendix 1. Current and past results are provided in the table below. Laboratory certificates are provided in Appendix 3.

Table 9 Bulk Asbestos Results – AAFC Building 18.

ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	PERCENT ASBESTOS
B-18 S-1 (MGI -2001)	Bldg 18, First Floor	Wall Plaster	1-5% chrysotile asbestos
B-18 S-2 (MGI -2001)	Bldg 18, First Floor Lab	Linoleum Flooring Backing	None Present

ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	PERCENT ASBESTOS
B-18 S-3 (MGI -2001)	Bldg 18, Furnace Room	Ceiling Tile	None Present
18-1	Bldg 18, Furnace Room	Gasket on Furnace	60% chrysotile asbestos
18-2	Bldg 18, Electrical Room	Tar Paper	None Present
18-3	Bldg 18, Basement	Vermiculite	None Present
18-4	Bldg 18, Basement	Drywall Joint Compound	None Present
18-5	Bldg 18, Upstairs Office	Grey Seamless Flooring	20% chrysotile asbestos
18-6	Bldg 18, Upstairs Hall and Office	Brown Seamless Flooring	15% chrysotile asbestos
18-7	Bldg 18, Upstairs Bathroom	Tan Seamless Flooring	None Present
18-8	Bldg 18, Upstairs Office	Drywall Joint Compound	4% chrysotile asbestos
18-9	Bldg 18, Upstairs Bathroom	Brown Vinyl Floor Tile	1% chrysotile asbestos
18-10 (dup of 18-8)	Bldg 18, Upstairs Office	Drywall Joint Compound	3% chrysotile asbestos

## 8.2 Paint Survey

No paint samples were collected during the current assessment. The paint survey was conducted by MGI during sampling events in 2001 and 2004-05.

The purpose of sampling is to address both health and disposal concerns, with respect to heavy metal content, for painted materials that will require handling and disposal during the upcoming building demolition.

Analytical paint results from the previous sampling events are provided in the following table:

Table 10 Metals in Paints – AAFC Building 18.

ID	SAMPLING DATE	TOTAL LEAD (MG/KG)	LEACHABLE LEAD (MG/L)	TOTAL MERCURY (MG/KG)	LEACHABLE MERCURY (MG/L)
Bldg 18, PS-1: white paint on exterior walls	2001, MGI Limited	<b>30,000</b>	--	--	--



ID	SAMPLING DATE	TOTAL LEAD (MG/KG)	LEACHABLE LEAD (MG/L)	TOTAL MERCURY (MG/KG)	LEACHABLE MERCURY (MG/L)
Bldg 18, PS-2: grey paint on exterior foundation and steps	2001, MGI Limited	350	--	--	--
Bldg 18, PS-3: red paint on interior stairs	2001, MGI Limited	640	--	--	--
Bldg 18, PS-4: white on interior second floor walls	2001, MGI Limited	130	--	--	--
B18-O1: white paint on exterior walls and trim	2004, MGI Limited	--	<b>8.74</b>	--	0.0097
B1-O2: grey paint on exterior concrete foundation and door	2004, MGI Limited	--	< 0.05	--	0.00017
B18-O3: white paint on exterior door and trim	2004, MGI Limited	--	<b>8.85</b>	--	0.001
B18-I1: cream paint on walls in main room	2004, MGI Limited	--	0.16 (dup 0.19)	--	0.027 (dup 0.013)
B18-I2: green/grey paint on door and trim in main room	2004, MGI Limited	--	3.10	--	0.0033
B18-I3: red paint on second floor stairs	2004, MGI Limited	--	2.73	--	0.00084
B18-I4: white paint on second floor walls	2004, MGI Limited	--	0.18	--	0.0016
B18-I5: white paint on second floor windows and trim	2004, MGI Limited	--	4.27	--	0.00042
B18-I6: green paint on basement stairs	2004, MGI Limited	--	0.12	--	0.0013
B18-I7: brown paint on lab counters, cupboards and porch	2004, MGI Limited	--	1.31	--	0.0019
<b>PEIELJ -Disposal Criteria*</b>		1000	5	10	0.1
<b>Surface Coating Materials Regulation**</b>		90	-	10	-
<b>TDG Act***</b>			5		0.1

\* Bold values exceed Provincial Disposal Guidelines

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HAZARDOUS BUILDING MATERIALS SURVEY AND LIMITED SOIL SAMPLING PROGRAM, AGRICULTURE AND AGRI-FOOD CANADA

CROPS AND LIVESTOCK RESEARCH CENTRE, CHARLOTTETOWN, PE, BUILDINGS 7, 10, 14, 17 AND 18

\*\* *Italicized* values exceed Federal Surface Coating Materials Regulation

\*\*\* Underlined values exceed the Federal Transportation of Dangerous Good Act

Based on the sample descriptions, it is assumed that the following samples are of the same material:

- ▶ *Bldg 18, PS-1, B18-O1 and B18-03*
- ▶ *Bldg 18, PS-2, and B18-02*
- ▶ *Bldg 18, PS-3, and B18-I3*
- ▶ *Bldg 18, PS-4, and B18-I4*

The results of the two sampling events (2001 and 2004) have been applied to the applicable guidelines to determine the following handling and disposal criteria.

Based on the above results, the white paint on the exterior walls, doors and trim of Building 18 exceeds the PEIELJ disposal guidelines for total and leachable lead and the federal TDGA Regulations. Therefore, the white paint must be disposed of at an off-island disposal facility licensed to accept such wastes. During transport, compliance with the TDGA Regulations and the Interprovincial Movement of Hazardous Waste Regulations and must be manifested as a Dangerous Good during transport.

The exterior grey paint on the foundation walls, steps and exterior doors and the interior red paint on the stairs satisfy the PEIELJ disposal guidelines for total and leachable lead and mercury and therefore may be disposed of at any C&D disposal site. These materials satisfy the TDGA Regulations and are not required to be manifested as a Dangerous Good during transport.

The interior white paint on the second floor walls and the cream paint on the main room walls satisfy the PEIELJ disposal guidelines for total and leachable lead and mercury, however the underlying plaster/drywall substrate was found to be asbestos-containing and therefore must be handled accordingly and disposed of at an approved municipal solid waste disposal site.

The brown paint on lab counters and wood trim also satisfies the PEIELJ disposal guidelines for total and leachable lead and mercury, however these materials were found to contain pesticide residue and require disposal of at an approved municipal solid waste disposal site.

Total lead and mercury concentrations for all other painted surfaces in Building 18 are unknown; however all leachable lead and mercury results satisfy the PEIELJ disposal guidelines for leachable lead and leachable mercury. Given the lack of overall structural integrity of building, it is unlikely that abatement of interior hazardous materials will be able to safely occur. Rather, the demolition will likely take place with hazardous materials remaining within the building and therefore, all waste generated from the demolition will require disposal

at a municipal solid waste landfill. Since the waste materials will require disposal at a landfill, there was no added value in obtaining total lead and mercury values.

Therefore, all painted surfaces, other than the exterior white walls, doors and trim, the exterior grey foundation walls, steps and doors, the interior red on the second floor stairs and the interior white on the second floor walls, must be disposed of at an approved municipal solid waste landfill that has a composite liner and leachate collection system (such as East Prince Waste Management Facility in Wellington, PEI) unless total lead and mercury concentrations are confirmed and satisfy applicable disposal guidelines. These materials satisfy the TDGA Regulations and are not required to be manifested as a Dangerous Good during transport.

Though total lead and mercury concentrations are unknown for some types and colours of paints, all painted surfaces are assumed to exceed the federal SCM regulations. Therefore, proper safety precautions, including disposal clothing and appropriate respirators, should be worn during the handling of these materials.

### **8.3 Polychlorinated Biphenyls (PCBs)**

Twenty-eight fluorescent light ballasts were identified and confirmed as non-PCB containing during the 2004-05 HBMS. No additional PCB-containing equipment or materials were identified during the current assessment.

### **8.4 Microbial Growth**

Microbial growth and water damage was identified on walls, ceilings, flooring and equipment throughout the building during the 2004-05 HBMS. No additional mould growth was observed during the current assessment.

Proper worker protection, including disposable clothing and appropriate respirators, should be worn when working with or around mould impacted building materials. There are no provincial disposal guidelines for mould impacted building materials. These materials may be disposed of at any C&D disposal site, provided they do not contain other hazardous materials (lead paint, asbestos, etc.).

### **8.5 Mercury Containing Devices**

One mercury-containing thermostat was identified in the Main Room during the 2004-05 HBMS; however it was noted during the current assessment that the thermostat has since been removed. No mercury containing equipment was observed in the building.

### **8.6 Smoke Detectors**

Twelve smoke detectors, 7 on the main floor and 5 in the basement, were observed in Building 18. Smoke detectors typically contain very small amounts (0.5-1 microcurie) of the radioactive

material Americium 241. The Americium emits alpha particles, which are detected by a simple ionization chamber. As smoke blocks some of the alpha particles, the reduced output of the ion chamber is sensed and sounds the alarms.

Given the low levels of radioactive materials contained with smoke detectors, they are exempt from the Canadian Nuclear Safety Commission (CNSC) *Packaging and Transport of Nuclear Substances Regulations SOR 208/2000, Nuclear Safety and Control Act* and therefore require no special handling or transportation considerations. Smoke detectors containing radioactive material should then be either sent back to the manufacturer or to a licensed hazardous waste disposal contractor.

## 8.7 Other Hazardous Materials

Previous sampling events in Building 18 have identified pesticide residue in the wood trim and lab bench shelves in the first floor laboratories (Rm 101 and Rm 102). While sampling events confirmed concentrations of various pesticides, follow-up leachate analysis indicated that the pesticides are unlikely to leach from the building materials.

Correspondence with the former PEI Department of Environment, Energy and Forestry (the Departments were realigned to form the current PEIELJ) by MGI indicated that if contaminated building materials could be shown that they were not likely to leach pesticides, the materials could be disposed of at the East Prince Waste Management Facility in Wellington, PEI. LVM confirmed in a phone conversation with Barry Jackson, Environmental and Regulatory Coordinator with PEIELJ, that the pesticide contaminated building materials are permitted to be disposed of at the East Prince Waste Management Facility. Details of the pesticide sampling program along with sample results are outlined in the 2004-05 HBMS by MGI Limited. No pesticide sampling was conducted during the current assessment.

In 2001, MGI identified petroleum impacted soils beneath the basement floor slab above the guidelines available at that time of the assessment. A review of the 2001 soil sampling program was not undertaken as part of this assessment. A summary of the 2001 program, along with a follow-up hydrocarbon investigation conducted in 2004, was provided in the 2004-05 HBMS. Contaminated soils were not included in the scope of the current assessment; however it is worth noting that a delineation program of contaminated soils beneath Building 18 was recommended by MGI 2004-05. For further details on the sampling programs and previous recommendations, please refer to reports detailing the 2001 and 2004 hydrocarbon investigations. It is our recommendation that the previous findings be compared to the current (2012) Atlantic Risk Based Corrective Action (RBCA) Tier I Risk Based Screening Levels (RBSLs) for an agricultural site with coarse grained soil and non-potable groundwater, with any soils exceeding these guidelines managed or remediated accordingly.

Minor petroleum stains were observed on the surface of the concrete floor slab in the basement beneath aboveground fuel oil storage tank and former furnace locations. The stained areas of concrete can either be disposed of as petroleum contaminated waste at an approved disposal facility or the stains can be removed via scarification or pressure washing. Dust collected during scarification and/or the runoff collected during pressure washing must be disposed as petroleum contaminated waste at a licensed facility. Stained areas are outlined on Figure 5, Appendix 1.

No other hazardous building materials requiring special handling or disposal considerations were identified in Building 18.

## 9 SUMMARY OF HAZARDOUS MATERIALS

A summary of the hazardous building materials encountered in Buildings 7, 10, 14, 17 and 18, is provided below, in Table 11. It is important to note that removal/handling procedures vary depending on a variety of factors including the manner in which they are removed, types of tools used during removal, amount of materials to be disturbed, etc.

Table 11 Summary of Hazardous Building Materials in Buildings 7, 10, 14, 17 and 18

HAZARDOUS MATERIAL	BUILDING	DESCRIPTION	CONDITION (RECOMMENDED REMOVAL PROCEDURE)	DISPOSAL CRITERIA
Asbestos	Building 14	Ceiling Board, Main Room	Type 2 Removal	Material should be manifested as a Dangerous Good during transport.  Work Permit prior to handling materials required from Worker's Compensation Board of PEI.  Regulatory Approval from PEIELJ.  Material requires disposal at approved facility (such as East Prince Waste Management Facility in Wellington, PEI).
	Building 17	Blanket Insulation in Chimney	Type 3 Removal, however structural instability of the building will likely require specialized abatement specifications.	
		Tar Coating on Walls and Ceiling in Refrigeration Room	Type 1 Removal	
	Building 18	Wall and Ceiling Plaster, 1 <sup>st</sup> and 2 <sup>nd</sup> Floors	Type 3 Removal, however structural instability of the building will likely require specialized abatement specifications.	
		Furnace Gasket, Furnace Room	Type 2/Glove Bag Removal	
		Grey Seamless Flooring, 2 <sup>nd</sup> Floor Office		

HAZARDOUS MATERIAL	BUILDING	DESCRIPTION	CONDITION (RECOMMENDED REMOVAL PROCEDURE)	DISPOSAL CRITERIA
		Brown Seamless Flooring, 2 <sup>nd</sup> Floor Hallway and Office	Type 3 Removal	
		Beige Vinyl Floor Tile, 2 <sup>nd</sup> Floor Bathroom	Type 3 Removal	
		Drywall Joint Compound, Throughout	Type 1 Removal	
			Type 3 Removal, however structural instability of the building will likely require specialized abatement specifications.	
Lead/ Mercury Paint	Building 7	White Paint – Exterior Walls, Doors, Trim and Brick Siding	Leachate Toxic	Material should be manifested as a Dangerous Good during transport.  Material requires off-island disposal at an approved facility.  Transport must comply with Interprovincial Movement of Hazardous Waste Regulations
	Building 10	Green Paint – Interior Walls	Not Leachate Toxic	Material requires disposal at an approved facility (such as East Prince Waste Management Facility in Wellington, PEI)
		White Paint – Exterior Walls, Shingles and Doors  Grey Paint- Interior Walls  White Paint – Interior Walls	Not Leachate Toxic	Material may be disposed of at any approved C&D disposal site.
	Building 14	White Paint – Exterior Walls and Shingles  Black Paint – Exterior	Not Leachate Toxic	Material requires disposal at an approved facility (such as East Prince Waste

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HAZARDOUS BUILDING MATERIALS SURVEY AND LIMITED SOIL SAMPLING PROGRAM, AGRICULTURE AND AGRI-FOOD CANADA

CROPS AND LIVESTOCK RESEARCH CENTRE, CHARLOTTETOWN, PE, BUILDINGS 7, 10, 14, 17 AND 18

HAZARDOUS MATERIAL	BUILDING	DESCRIPTION	CONDITION (RECOMMENDED REMOVAL PROCEDURE)	DISPOSAL CRITERIA
	Building 17	Doors and Stairs Brown Paint- Shelving on 2 <sup>nd</sup> Floor		Management Facility in Wellington, PEI)
		White Paint – Exterior Shingles	Not Leachate Toxic	Material requires disposal at an approved facility (such as East Prince Waste Management Facility in Wellington, PEI)
		Grey Paint – Concrete Foundation Silver Paint – Refrigeration Room Walls	Not Leachate Toxic	Material may be disposed of at any approved C&D disposal site
	Building 18	White Paint – Exterior Walls, Doors and Trim	Leachate Toxic	Material should be manifested as a Dangerous Good during transport. Material requires off-island disposal at an approved facility. Transport must comply with Interprovincial Movement of Hazardous Waste Regulations
		Grey Paint – Exterior Concrete Foundation Red Paint – Interior Stairs	Not Leachate Toxic	Material may be disposed of at any approved C&D disposal site.
		White Paint – Interior 2 <sup>nd</sup> Floor Walls Cream Paint – Main Room Walls	Not Leachate Toxic	*While paint is within lead disposal guidelines, plaster and drywall substrate is asbestos containing. Material should be manifested as a Dangerous Good during transport. Work Permit prior to handling materials required from Worker's Compensation Board of PEI. Regulatory Approval from PEIELJ.

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HAZARDOUS BUILDING MATERIALS SURVEY AND LIMITED SOIL SAMPLING PROGRAM, AGRICULTURE AND AGRI-FOOD CANADA

CROPS AND LIVESTOCK RESEARCH CENTRE, CHARLOTTETOWN, PE, BUILDINGS 7, 10, 14, 17 AND 18

HAZARDOUS MATERIAL	BUILDING	DESCRIPTION	CONDITION (RECOMMENDED REMOVAL PROCEDURE)	DISPOSAL CRITERIA
				Material requires disposal at approved facility (such as East Prince Waste Management Facility in Wellington, PEI).
		Brown Paint- Lab Counters, Wood Trim	Not Leachate Toxic	*While paint is within lead disposal guidelines, wood substrate is contains pesticide residue.  Material should be manifested as a Dangerous Good.  Material requires disposal at an approved facility (such as East Prince Waste Management Facility in Wellington, PEI).
		All Other Painted Materials	Not Leachate Toxic	Material requires disposal at an approved facility (such as East Prince Waste Management Facility in Wellington, PEI)
Mould	Building 7	Visible Mould growth on Ceiling Insulation and Roof Trusses	N/A	Material can be disposed of at any approved C&D disposal facility unless mould growth is on substrate that contains lead paint or asbestos.
	Building 10	Visible Mould Growth on Walls and Ceiling Throughout	N/A	
	Building 17	Visible Mould Growth on Walls, Ceilings and Equipment Throughout	N/A	
	Building 18	Visible Mould Growth on Walls and Ceilings Throughout	N/A	
PCBs	Building 17	Tar Coating on Walls and Ceiling in Refrigeration Room	N/A	Material requires disposal at an approved facility (such as East Prince Waste Management Facility in Wellington, PEI).  * This material is also asbestos containing

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HAZARDOUS BUILDING MATERIALS SURVEY AND LIMITED SOIL SAMPLING PROGRAM, AGRICULTURE AND AGRI-FOOD CANADA

CROPS AND LIVESTOCK RESEARCH CENTRE, CHARLOTTETOWN, PE, BUILDINGS 7, 10, 14, 17 AND 18



HAZARDOUS MATERIAL	BUILDING	DESCRIPTION	CONDITION (RECOMMENDED REMOVAL PROCEDURE)	DISPOSAL CRITERIA
Pesticide Contamination	Building 18	Wood Trim and Lab Bench Shelves	N/A	Material should be manifested as a Dangerous Good.  Material requires disposal at an approved facility (such as East Prince Waste Management Facility in Wellington, PEI).
Petroleum Hydrocarbon Staining	Building 10	Concrete Floor Slab	N/A	Material should be manifested as a Dangerous Good
	Building 18	Concrete Floor Slab in Basement Beneath Former Furnace and AST	N/A	Material requires disposal at an approved facility licensed to accept hydrocarbon impacted materials (such as East Prince Waste Management Facility in Wellington, PEI).
Smoke Detectors (Americium - 241)	Building 18	Throughout	N/A	Material requires disposal with a licensed hazardous waste disposal contractor.
Ozone Depleting Substance	Building 17	Air Conditioning Unit – Main Floor	N/A	Refrigerant should be emptied from the unit and disposed of with a licensed hazardous waste disposal contractor.
Soil	Building 10	Potential Petroleum Hydrocarbon Impacted Soils Beneath Floor Slab	N/A	Material should be manifested as a Dangerous Good
	Building 18	Potential Petroleum Hydrocarbon Impacted Soils Beneath the Basement Floor Slab	N/A	Material requires disposal at an approved facility (such as East Prince Waste Management Facility in Wellington, PEI).

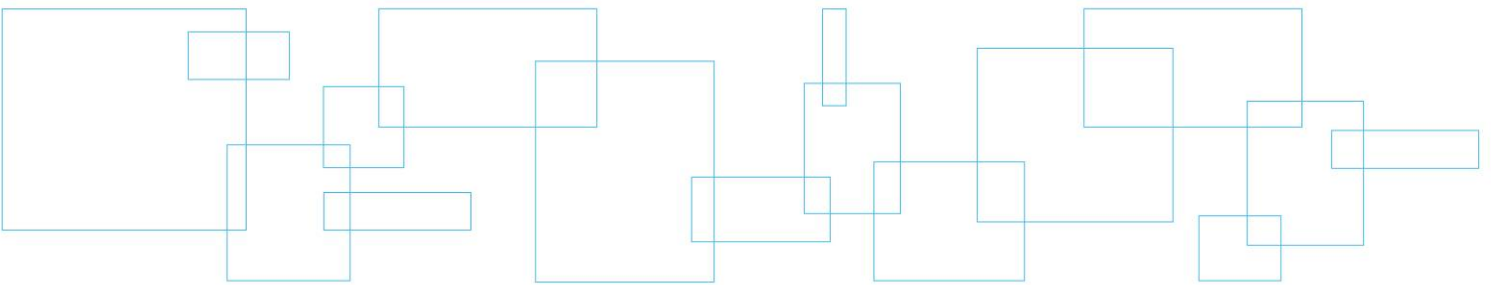
## 10 REFERENCES

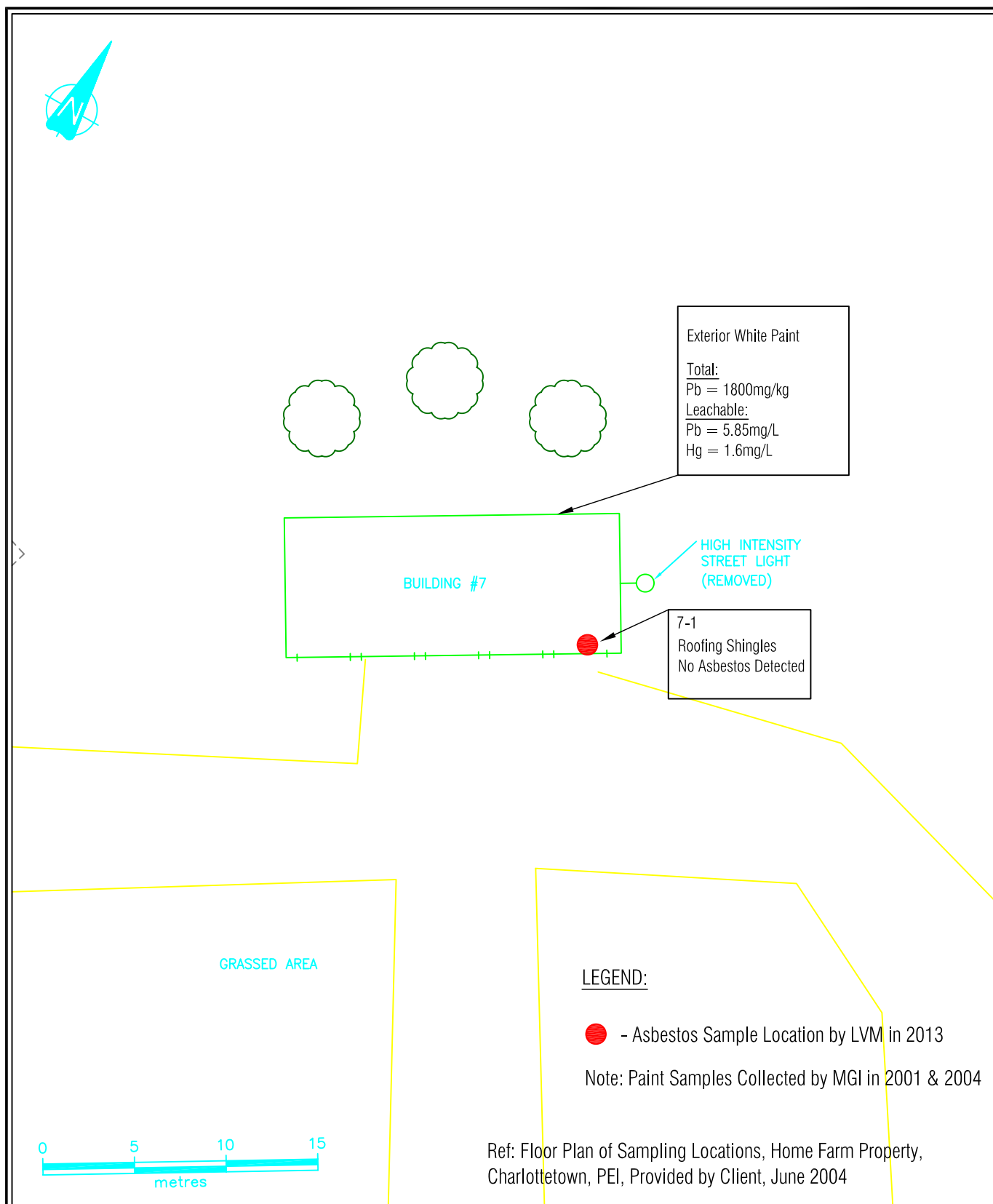
1. **Department of Justice Canada** - Canadian Environmental Protection Act, 1999 (CEPA) - *Interprovincial Movement of Hazardous Waste Regulations*.
2. **Department of Justice Canada** - Canada Consumer Safety Products Act, 2010-Surface Coating Materials Regulations, SOR/2005-109
3. **Health Canada**- Workplace Hazardous Materials Information System (WHMIS), Material Safety Data Sheets (MSDS).
4. **Human Resources and Social Development Canada (HRSDC)**- Canada Labour Code Part II, - SOR 86-304 - *Occupational Health and Safety Regulations*.
5. **Transport Canada (TC)** -Transportation of Dangerous Goods Act, 1992 (TDGA).
6. **PEI Department of Environment, Labour and Justice** - **Prince** Edward Island Acceptance Parameters for Contaminated Soils
7. **Prince Edward Island Environmental Protection Act** *Chapter E-9, Materials Recycling Regulations*
8. **Canadian Council of the Ministers of the Environment**- Soil Quality Guidelines
9. **Prince Edward Island Occupational Health and Safety Act** - Prince Edward Island Occupational Health and Safety Regulations Section 49
10. **Public Works and Government Services Canada** - Deputy Minister Directive (DIR:057) – *Respecting Asbestos Management in Federal Owned or Leased Buildings or Facilities Containing Asbestos*. March 12, 1997
11. Agriculture and Agri-Food Canada Crops and Livestock Research Centre, Charlottetown, PEI – Asbestos Management Plan, January 2011
12. **MGI Limited** - *Hazardous Building Material Survey with Recommendations for Building Demolition and Petroleum Hydrocarbon Impact Assessment, Agriculture and Agri-Food Canada, Home Farm Property, Building 7 (5 Car Garage), Charlottetown, Queens County, Prince Edward Island*. June 2004.
13. **MGI Limited** - *Hazardous Building Material Survey with Recommendations for Building Demolition and Petroleum Hydrocarbon Assessment, Agriculture and Agri-Food Canada, Home Farm Property, Building 10 (Pea Viner Storage), Charlottetown, Queens County, Prince Edward Island*. June 2004.
14. **MGI Limited** - *Hazardous Building Material Survey with Recommendations for Building Demolition and Petroleum Hydrocarbon Assessment, Agriculture and Agri-Food Canada,*

*Home Farm Property, Building 14 (Small Equipment Storage), Charlottetown, Queens County, Prince Edward Island. June 2004.*

15. **MGI Limited** - *Hazardous Building Material Survey with Recommendations for Building Demolition and Limited Soil Sampling Program and Follow up Soil Sampling Program, Agriculture and Agri-Food Canada, Home Farm Property, Building 17 (Apple House), Charlottetown, Queens County, Prince Edward Island. January 2005.*
16. **MGI Limited** - *Hazardous Building Material Survey with Recommendations for Building Demolition and Limited Soil Sampling Program, Agriculture and Agri-Food Canada, Home Farm Property, Building 18 (Horticulture Building), Charlottetown, Queens County, Prince Edward Island. January 2005.*

## Appendix 1 Figures





**LVM** | MARITIME TESTING

Floor Plan Showing Sampling Locations  
Building 7, AAFC  
Charlottetown, Prince Edward Island

DATE: March 2013

SCALE: As Noted

DRAWN BY: JJ

CKD BY: SF

JOB No. 16254

FIGURE 1



O/H POWER LINES

10-1  
Roofing Shingles  
No Asbestos Detected

Interior Green Paint on Walls  
Leachable:  
Pb = 0.08mg/L  
Hg = 0.00033mg/L

BUILDING #10

Exterior White Paint

Total:  
Pb = 350mg/kg  
Leachable:  
Pb = 0.91mg/L  
Hg = 0.0039mg/L

Interior Grey Paint on Walls  
Total:  
Pb = 570mg/kg

Interior White Paint on Walls  
Total:  
Pb = 300mg/kg  
Leachable:  
Pb = 0.45mg/L  
Hg = 0.0003mg/L

LILY POND DRIVE

**LEGEND**

— CRACKS IN CONCRETE  
□ HYDROCARBON STAINING

0 2 4 6 8 10  
metres

**LEGEND:**

● - Asbestos Sample Location by LVM in 2013

Note: Paint Samples Collected by MGI in 2001 & 2004

Ref: Floor Plan of Sampling Locations, Home Farm Property,  
Charlottetown, PEI, Provided by Client, June 2004

**LVM** | MARITIME TESTING

Floor Plan Showing Sampling Locations  
Building 10, AAFC  
Charlottetown, Prince Edward Island

DATE: March 2013

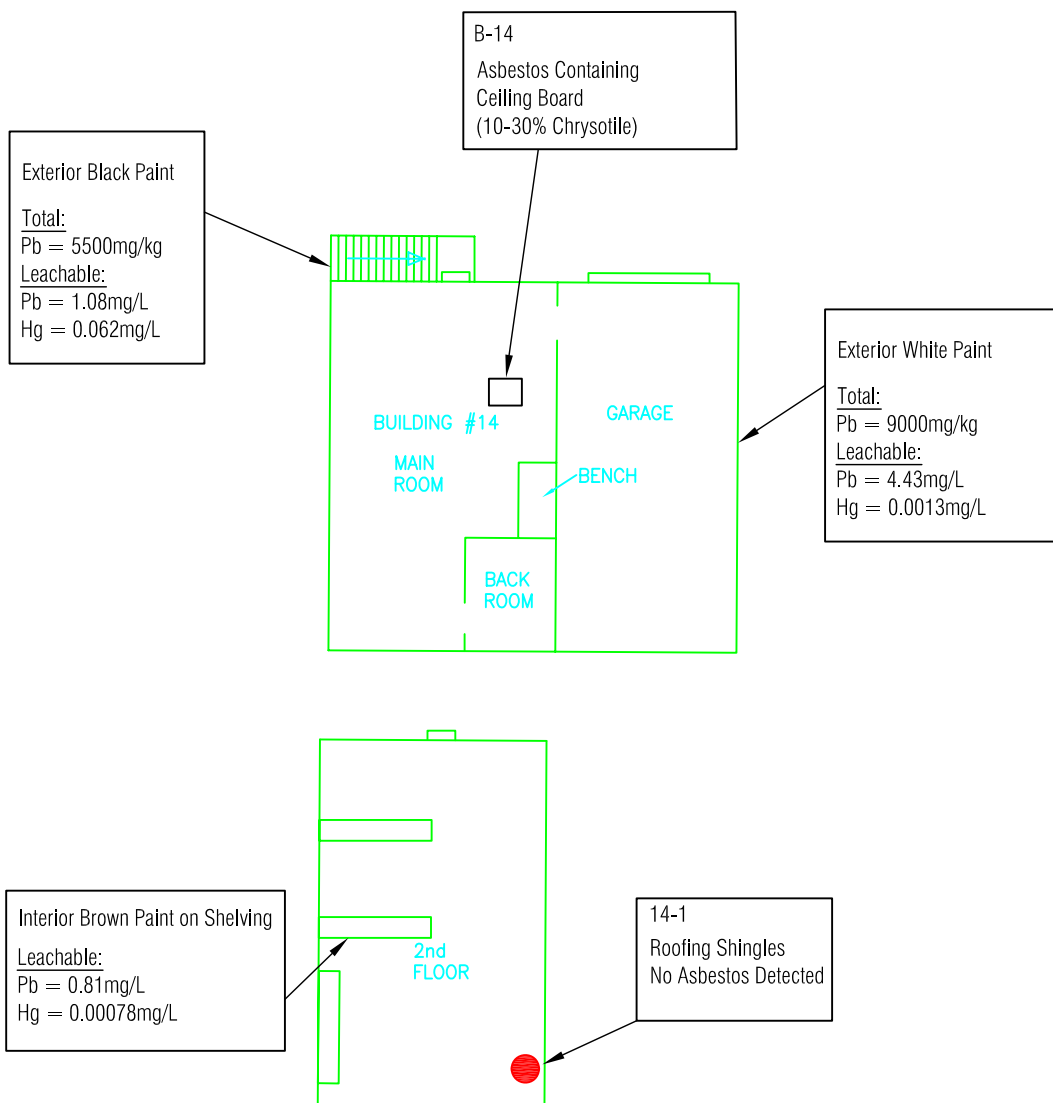
SCALE: As Noted

DRAWN BY: JJ

CKD BY: SF

JOB No. 16254

**FIGURE 2**

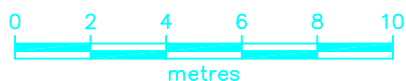


#### LEGEND:

- - Asbestos Sample Location by LVM
- Asbestos Containing Materials by MGI, 2004

Note: Paint Samples Collected by MGI in 2001 & 2004

Ref: Floor Plan of Sampling Locations, Home Farm Property,  
 Charlottetown, PEI, Provided by Client, June 2004



**LVM** | MARITIME TESTING

Floor Plan Showing Sampling Locations  
 Building 14, AAFC  
 Charlottetown, Prince Edward Island

DATE: March 2013

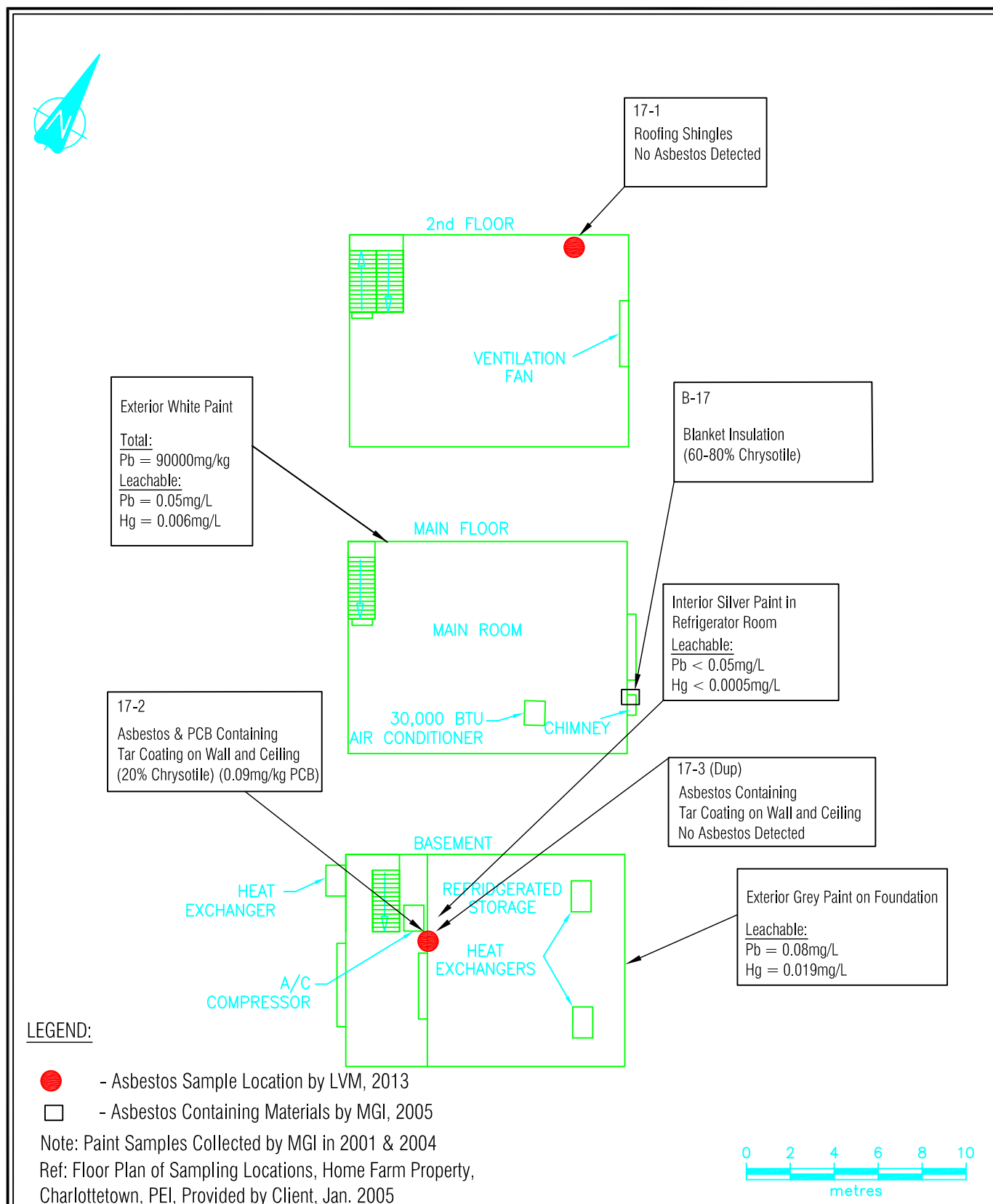
SCALE: As Noted

DRAWN BY: JJ

CKD BY: SF

JOB No. 16254

FIGURE 3



**LVM** | MARITIME TESTING

Floor Plan Showing Sampling Locations  
Building 17, AAFC  
Charlottetown, Prince Edward Island

DATE: March 2013

SCALE: As Noted

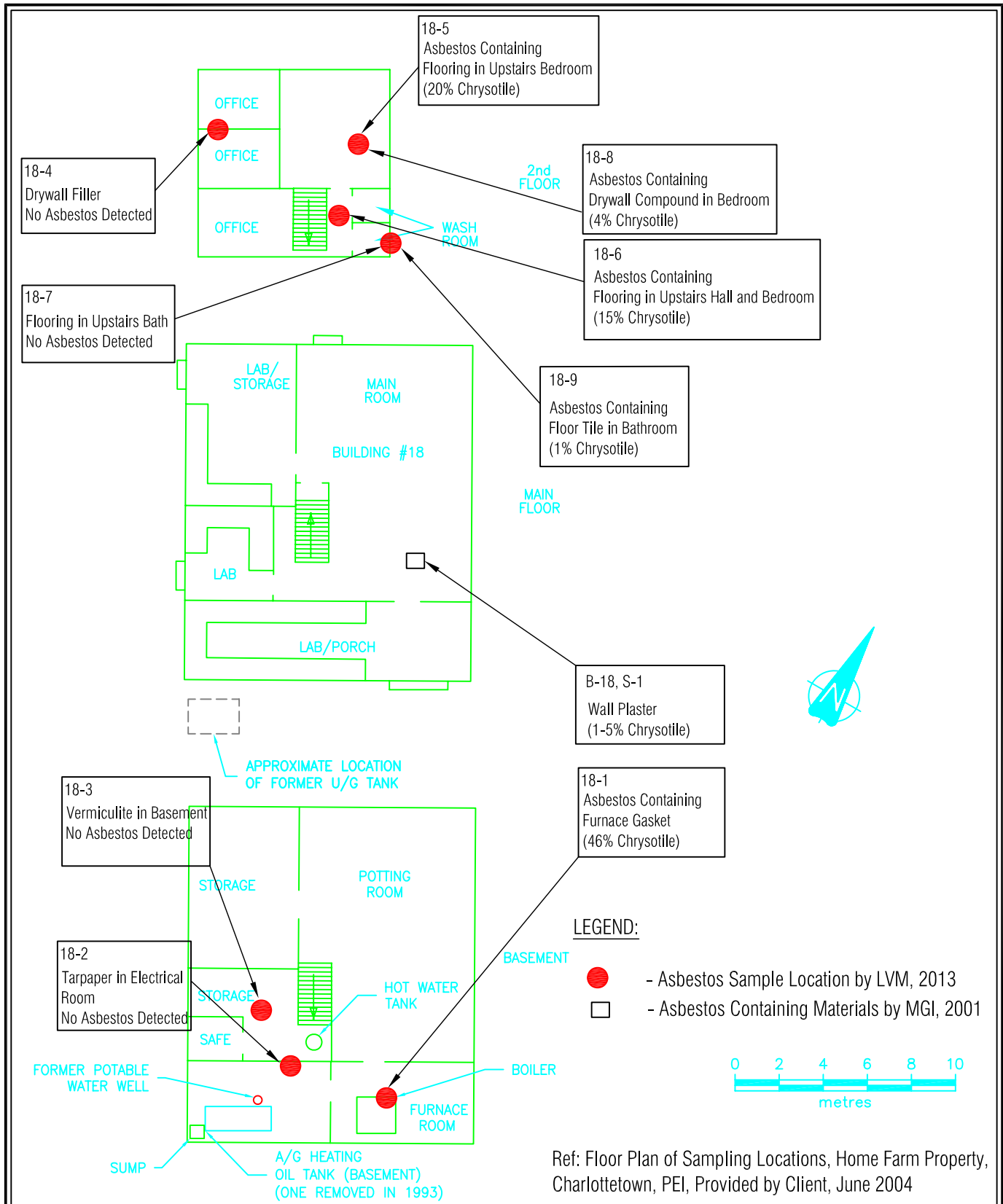
DRAWN BY: JJ

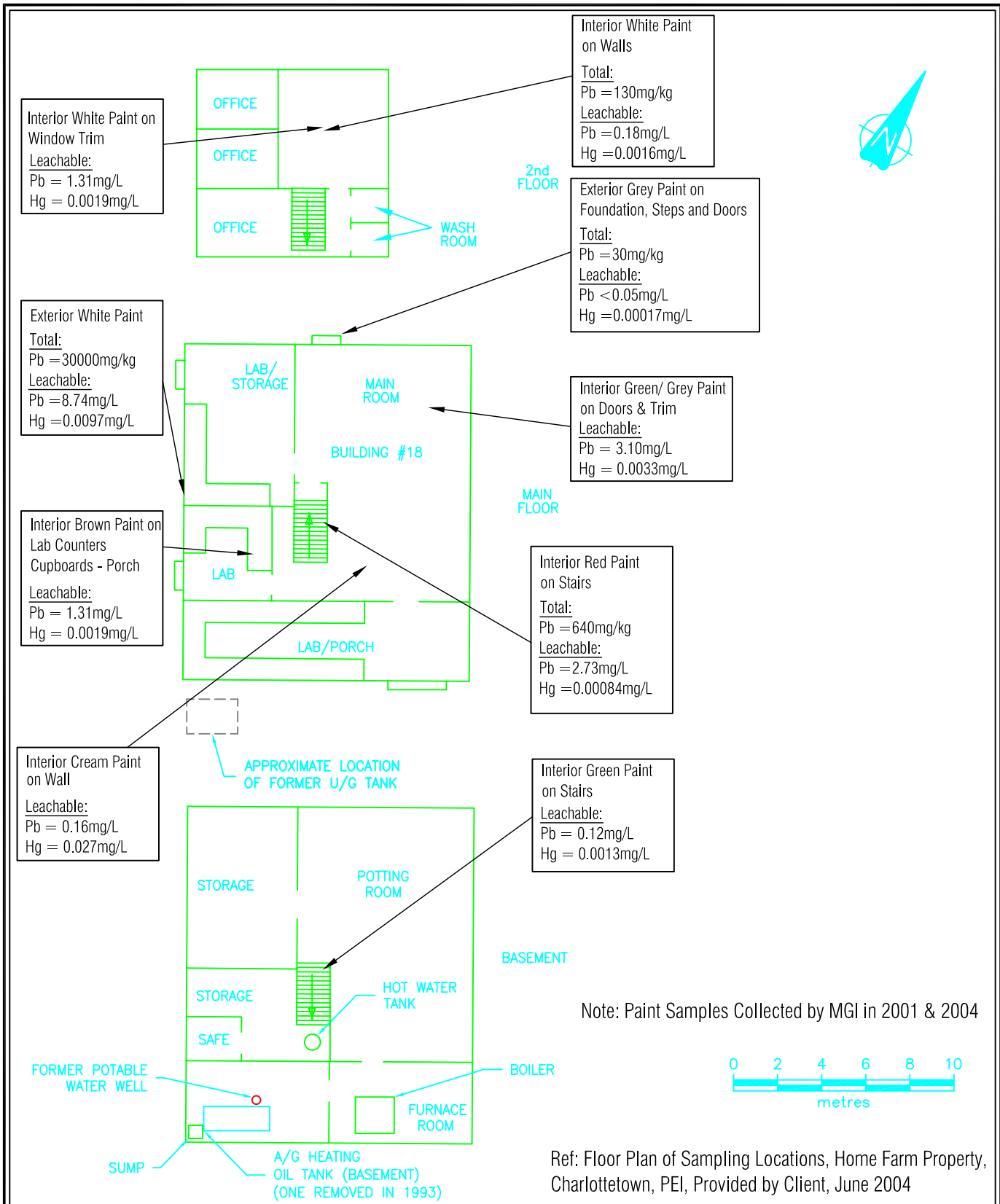
CKD BY: SF

JOB No. 16254

FIGURE 4







**LVM** | MARITIME TESTING

Floor Plan Showing Paint Sampling Locations  
Building 18, AAFC  
Charlottetown, Prince Edward Island

DATE: March 2013

SCALE: As Noted

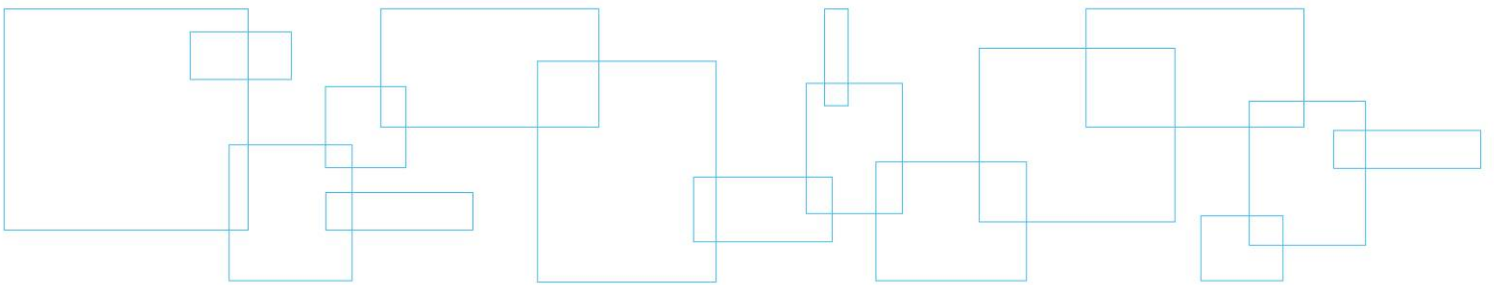
DRAWN BY: JJ

CKD BY: SF

JOB No. 16254

FIGURE 5B

## Appendix 2 Laboratory Certificates



Your Project #: 16254  
Your C.O.C. #: B078813

**Attention: Scott Fisher**

LVM Maritime Testing  
97 Troop Ave  
Dartmouth, NS  
B3B 2A7

**Report Date: 2013/01/11**

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B301495**

**Received: 2013/01/04, 13:08**

Sample Matrix: Soil  
# Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PCBs in Solid by GC/ECD (1)	1	2013/01/10	2013/01/11	ATL SOP 00105	Based on EPA8082

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

(1) Results reported on an as received basis. This data was generated using accepted laboratory practices and standard Quality Control procedures. However, due to the absence of a recognized reference method for PCBs in Solid Matrix, an in-house method was used. Quality control samples were analyzed, however certain QC elements may be unavailable.

**Encryption Key**

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

Mari Kenny, Project Manager  
Email: MKenny@maxxam.ca  
Phone# (902) 420-0203 Ext:291

=====

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

Total cover pages: 1

Maxxam Job #: B301495  
Report Date: 2013/01/11

LVM Maritime Testing  
Client Project #: 16254

Sampler Initials: KS

### POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		QD3769		
Sampling Date		2013/01/03		
COC Number		B078813		
	<b>Units</b>	<b>17-2</b>	<b>RDL</b>	<b>QC Batch</b>

<b>PCBs</b>				
Total PCB	mg/kg	0.69	0.50	3090094
<b>Surrogate Recovery (%)</b>				
Decachlorobiphenyl	%	57 (1)		3090094
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ( 1 ) Aroclor 1254.				

Maxxam Job #: B301495  
Report Date: 2013/01/11

LVM Maritime Testing  
Client Project #: 16254

Sampler Initials: KS

Package 1	16.3°C
-----------	--------

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

**GENERAL COMMENTS**

**Results relate only to the items tested.**

LVM Maritime Testing  
Attention: Scott Fisher  
Client Project #: 16254  
P.O. #:  
Site Location:

Quality Assurance Report  
Maxxam Job Number: DB301495

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3090094 KJO	Spiked Blank	Decachlorobiphenyl	2013/01/11		84	%	30 - 130
		Total PCB	2013/01/11		103	%	30 - 130
	Method Blank	Decachlorobiphenyl	2013/01/11		86	%	30 - 130
		Total PCB	2013/01/11	ND, RDL=0.50		mg/kg	
		Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy. Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination. Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.					

This column for lab use only:

Client Code **41009**

Maxxam Job #

**B301495**

Cooler ID	Seal Present	Seal Intact	Temp 1	Temp 2	Temp 3	Average Temp
			16	16	17	

Integrity YES **NO**

Integrity / Checklist by **JA**

Labelled by Location / Bin #

## INVOICE INFORMATION:

Company Name: **LVM Maritime Testing**

Contact Name: **Scott Fisher**

Address: **Ashley Zottanelli**

Postal Code

Email:

Ph:

Fax:

## REPORT INFORMATION (if differs from invoice):

Company Name:

Contact Name:

Address:

Postal Code

Email:

Ph:

Fax:

PO #

Project # / Phase #

Project Name / Site Location

Quote **M7L2012-2013**

Site #

Task Order #

Sampled by

**KS/JA**

## TURNAROUND TIME

Standard ☒

10 day ☐

If RUSH Specify Date:

Pre-schedule rush work

Charge for # Jars used but not submitted

## Guideline Requirements / Detection Limits / Special Instructions

\*Specify Matrix: Surface/Salt/Ground/Tapwater/Sewage/Effluent/  
Potable/NonPotable/Tissue/Soil/Sludge/Metal/Seawater

Field Sample Identification Matrix\* Date/Time Sampled # & type of bottles

1	17-2	tar	Jan 3/13	1 bag
2				
3				
4				
5				
6				
7				
8				
9				
10				

Field Filtered & Preserved

Lab Filtration Required

RCAP-30 Choose Total or Diss Metals

RCAP-MS Choose Total or Diss Metals

Total Digest (Default Method) for well water, surface water

Dissolved for ground water

Mercury

Metals & Mercury Default Available Digest Method

Metals Total Digest - for Ocean sediments (HNO3/HF/HClO4)

Mercury Low level by Cold Vapour AA

Selenium (low level) Recl'd for CCME Residential, Parklands, Agricultural

Hot Water soluble Boron (required for CCME Agricultural)

RBGA Hydrocarbons (BTEX, C6-C8)

Hydrocarbons Soil (Potable), NS Fuel Oil Soil Policy Low Level BTEX, C6-C8

NS Potable Water BTEX, VPH, Low level T.E.H.

TPH Fractionation

PAH's

PAH's with Acridine, Quinoline

PCBs

X

REQUISITIONED BY: (Signature/Print)

**Lisa Bodan**

Date

**4 Jan 13**

Time

**13h05**

Page 5 of 5

RECEIVED BY: (Signature/Print)

**ERIN FRASER**

Date

**2013 JAN 4 PM 1:00**

**2013 JAN 4 PM 3:44**



**EMSL Canada Inc.**

10 Falconer Drive, Unit #3, Mississauga, ON L5N 3L8

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

<http://www.emsl.com>[torontolab@emsl.com](mailto:torontolab@emsl.com)

EMSL Canada Or 551300070

CustomerID: 55MARI77

CustomerPO: 16254

ProjectID:

Attn: **Ashley Zottarelli**  
**LVM Maritime Testing**  
**97 Troop Avenue**

**Dartmouth, NS B3B 2A7**Project: **16254-BLDG. #7**

Phone: (902) 468-6486  
Fax: (902) 468-4919  
Received: 01/08/13 9:15 AM  
Analysis Date: 1/9/2013  
Collected:

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	<u>Non-Asbestos</u>		<u>Asbestos</u>
			% Fibrous	% Non-Fibrous	% Type
7-1	SHINGLE	Black		100% Non-fibrous (other)	None Detected
551300070-0001		Fibrous Heterogeneous			

Analyst(s)

Matthew Davis (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 01/14/2013 10:15:03

**EMSL Canada Inc.**

10 Falconer Drive, Unit #3, Mississauga, ON L5N 3L8

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

<http://www.emsl.com>[torontolab@emsl.com](mailto:torontolab@emsl.com)

EMSL Canada Or 551300071

CustomerID: 55MARI77

CustomerPO: 16245

ProjectID:

Attn: **Ashley Zottarelli**  
**LVM Maritime Testing**  
**97 Troop Avenue**

**Dartmouth, NS B3B 2A7**Project: **16245-BLDG. #10**

Phone: (902) 468-6486  
Fax: (902) 468-4919  
Received: 01/08/13 9:16 AM  
Analysis Date: 1/9/2013  
Collected:

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	<u>Non-Asbestos</u>		<u>Asbestos</u>
			% Fibrous	% Non-Fibrous	% Type
10-1	SHINGLE	Black		100% Non-fibrous (other)	None Detected
551300071-0001		Fibrous Heterogeneous			

Analyst(s)

Matthew Davis (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 01/14/2013 10:13:30

**EMSL Canada Inc.**

10 Falconer Drive, Unit #3, Mississauga, ON L5N 3L8

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

<http://www.emsl.com>[torontolab@emsl.com](mailto:torontolab@emsl.com)

EMSL Canada Or 551300069

CustomerID: 55MARI77

CustomerPO: 16254

ProjectID:

Attn: **Ashley Zottarelli**  
**LVM Maritime Testing**  
**97 Troop Avenue**

**Dartmouth, NS B3B 2A7**

Project: 16254-BLDG. 14

Phone: (902) 468-6486  
Fax: (902) 468-4919  
Received: 01/08/13 9:14 AM  
Analysis Date: 1/9/2013  
Collected:

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	<u>Non-Asbestos</u>		<u>Asbestos</u>
			% Fibrous	% Non-Fibrous	% Type
14-1	SHINGLE	Black		100% Non-fibrous (other)	None Detected
551300069-0001		Non-Fibrous Heterogeneous			

Analyst(s)

Matthew Davis (1)

Kevin Pang  
or other approved signatory

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

Initial report from 01/14/2013 10:17:59

**EMSL Canada Inc.**

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EMSL Canada Or 551300072

CustomerID: 55MARI77

CustomerPO: 16254

ProjectID:

Attn: **Ashley Zottarelli**  
**LVM Maritime Testing**  
**97 Troop Avenue**

**Dartmouth, NS B3B 2A7**

Project: 16254-BLDG. #17

Phone: (902) 468-6486  
Fax: (902) 468-4919  
Received: 01/08/13 9:07 AM  
Analysis Date: 1/9/2013  
Collected:

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	<u>Non-Asbestos</u>		<u>Asbestos</u>
			% Fibrous	% Non-Fibrous	% Type
17-1 551300072-0001	SHINGLE	Black Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected
17-2 551300072-0002	TAR	Black Fibrous Heterogeneous		80% Non-fibrous (other)	20% Chrysotile
17-3 551300072-0003	SHINGLE	Black Non-Fibrous Heterogeneous		100% Non-fibrous (other)	None Detected

Analyst(s)

Matthew Davis (3)

Kevin Pang  
or other approved signatory

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

Initial report from 01/14/2013 10:23:22

**EMSL Canada Inc.**

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EMSL Canada Or 551300073

CustomerID: 55MARI77

CustomerPO: 16254

ProjectID:

Attn: **Ashley Zottarelli**  
**LVM Maritime Testing**  
**97 Troop Avenue**

**Dartmouth, NS B3B 2A7**Project: **16254-BLDG. #18**

Phone: (902) 468-6486  
Fax: (902) 468-4919  
Received: 01/08/13 9:19 AM  
Analysis Date: 1/9/2013  
Collected:

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	<u>Non-Asbestos</u>		<u>Asbestos</u>
			% Fibrous	% Non-Fibrous	% Type
18-1 551300073-0001	GASKET	Tan Fibrous Heterogeneous		40% Non-fibrous (other)	<b>60% Chrysotile</b>
18-2 551300073-0002	TAR PAPER	Brown Fibrous Heterogeneous	80% Cellulose	20% Non-fibrous (other)	<b>None Detected</b>
18-3 551300073-0003	VERMICULITE	Brown/Tan Non-Fibrous Heterogeneous		100% Non-fibrous (other)	<b>None Detected</b>
Vermiculite and Soil are known problem matrices and negative results cannot be guaranteed. Additional analysis such as CARB 435 milling prep or ASTM Draft Soil Sieving is recommended for proper quantification of asbestos in vermiculite and soil.					
18-4 551300073-0004	DRYWALL FILLER	Beige Non-Fibrous Heterogeneous		100% Non-fibrous (other)	<b>None Detected</b>
18-5 551300073-0005	FLOORING	Gray/Various Fibrous Heterogeneous		80% Non-fibrous (other)	<b>20% Chrysotile</b>
18-6 551300073-0006	FLOORING	Brown/Various Fibrous Heterogeneous		85% Non-fibrous (other)	<b>15% Chrysotile</b>
18-7 551300073-0007	FLOORING	Tan Non-Fibrous Heterogeneous		100% Non-fibrous (other)	<b>None Detected</b>

Analyst(s)

Matthew Davis (10)

Kevin Pang  
or other approved signatory

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

Initial report from 01/14/2013 10:18:45

**EMSL Canada Inc.**

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EMSL Canada Or 551300073

CustomerID: 55MARI77

CustomerPO: 16254

ProjectID:

Attn: **Ashley Zottarelli**  
**LVM Maritime Testing**  
**97 Troop Avenue**

**Dartmouth, NS B3B 2A7**

Project: 16254-BLDG. #18

Phone: (902) 468-6486  
Fax: (902) 468-4919  
Received: 01/08/13 9:19 AM  
Analysis Date: 1/9/2013  
Collected:

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	<u>Non-Asbestos</u>		<u>Asbestos</u>
			% Fibrous	% Non-Fibrous	% Type
18-8 551300073-0008	DRYWALL COMPOUND	Tan Non-Fibrous Heterogeneous		96% Non-fibrous (other)	4% Chrysotile
18-9 551300073-0009	FLOOR TILE	Beige Non-Fibrous Heterogeneous		99% Non-fibrous (other)	1% Chrysotile
18-10 551300073-0010	DRYWALL COMPOUND	Tan Non-Fibrous Heterogeneous		97% Non-fibrous (other)	3% Chrysotile

Analyst(s)

Matthew Davis (10)

Kevin Pang  
or other approved signatory

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

Initial report from 01/14/2013 10:18:45