FINAL

PRE-DEMOLITION
HAZARDOUS BUILDING MATERIALS ASSESSMENT
FORMER CONSTRUCTION CAMP SITES
BAY D'ESPOIR – AVALON TRANSMISSION LINE (TL202/TL206)
NEWFOUNDLAND AND LABRADOR

Submitted to:

Newfoundland and Labrador Hydro,

a Nalcor Energy Company

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Wood Project #: TF18104243.2000

IMPORTANT NOTICE

EXECUTIVE SUMMARY

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood), was retained by Newfoundland and Labrador Hydro (Hydro), a Nalcor Energy Company, to conduct a Pre-Demolition Hazardous Building Materials Assessment (HBMA) of six (6) former construction camp sites (Camp #1, Camp #2, Mitchell's Pond Camp, Hungry Grove Camp, Camp 100 and Medonnegonik Lake Camp) located along the Bay d'Espoir – Avalon Transmission Line TL202 and TL206 and recently constructed TL267 (BDE – Avalon TL), herein referred to as the "sites". This assessment was required to provide Hydro with an evaluation of known and potential hazardous building materials in the cabins and other related infrastructure at the sites that are slated for demolition, herein referred to as the "site buildings".

During the construction of the BDE Hydroelectric Generating Station, which was developed the late 1960's/early 1970's, approximately 840 kilometres (km) of high-voltage transmission lines were built (running east to west) to facilitate a province-wide power network that connected St. John's, BDE, Grand Falls, Corner Brook and Stephenville. During the construction phase, six (6) camps were set-up along the right-of-way (RoW) of the transmission line and used as accommodations for construction personnel. Each camp site typically contained a cabin, an outhouse and a drum storage area.

A newly built 188-km, high voltage transmission line (TL267) was completed by Hydro between BDE and the Avalon Peninsula and placed into service in early December 2017. The new 230 kilovolt (kV) transmission line's route parallels two existing transmission lines between the BDE Generating Station and the Western Avalon Terminal Station near Chapel Arm. As the former construction camps have not been in use within the past 15 years, Hydro plans to decommission these sites and demolish and remove all associated camp infrastructure.

The former construction camp sites are situated throughout the Bay Du Nord Wilderness Reserve, between the communities of Conne River and Swift Current, near the southeastern coast of Newfoundland. The two eastern most camp sites (Camp #1 and Camp #2) are currently accessible by gravel access road from the Burin Peninsula Highway (Route 210) in the community of Swift Current (near Piper's Hole River). The other four camp sites (Mitchell's Pond Camp, Hungry Grove Camp, Camp 100 and Medonnegonik Lake Camp) are currently assessable by gravel access road from the BDE Highway (Route 360) in the community of Conne River, near the Jipujijkuei Kuespem Provincial Park.

The objectives of the Pre-Demolition HBMA were to determine if hazardous building materials are present in the site buildings and to identify the condition and approximate quantity of these materials. The scope of work for the Pre-Demolition HBMA was completed in accordance with Wood's workplan entitled, "*Professional Services for Six (6) Construction Camp Sites, Bay d'Espoir – Avalon Transmission Line, Newfoundland and Labrador – Workplan for Phase I/II Environmental Site Assessment and Pre-Demolition Hazardous Building Materials Assessment*". It is important to note that the Phase I/II Environmental Site Assessment is provided under separate report cover.

This HBMA report is structured in the following manner:

Table 1-1: Report Structure

Section	Description	Appendices
1.0	Introduction	A1 to B1
2.0	Findings - Camp #1 Site	A2 to D2
3.0	Findings - Camp #2 Site	A3 to D3
4.0	Findings - Mitchell's Pond Camp Site	A4 to D4
5.0	Findings - Hungry Grove Camp Site	A5 to D5
6.0	Findings - Camp 100 Site	A6 to D6
7.0	Findings - Medonnegonik Lake Camp Site	A7 to D7
8.0	Closure	A8 to D8
9.0	References	

For reporting purposes, the findings, conclusions and recommendations for future actions, where warranted, for each site has been provided in a separate section within the report. It is also important to note that the report has been structured such that each section includes a separate table of contents.

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LIST OF APPENDICES

1.0 INTRODUCTION

Wood Environment & Infrastructure Solutions, a Division of Wood Canada Limited (Wood), was retained by Newfoundland and Labrador Hydro (Hydro), a Nalcor Energy Company, to conduct a Pre-Demolition Hazardous Building Materials Assessment (HBMA) of six former construction camp sites (Camp 1, Camp 2, Camp 100, Hungry Grove Camp, Medonnegonik Lake Camp and Mitchell's Pond Camp) located along the Bay d'Espoir – Avalon Transmission Line TL202 and TL206 and recently constructed TL267 (BDE-Avalon TL), herein referred to as the "sites". This assessment was required to provide Hydro with an evaluation of known and potential hazardous building materials in cabins and other related infrastructure at the sites that are slated for demolition, herein referred to as the "site buildings".

1.1 Background

During the construction of the BDE Hydroelectric Generating Station, which was developed in the late 1960's/early 1970's, approximately 840 kilometres (km) of high-voltage transmission lines were built (running east to west) to facilitate a province-wide power network that connected St. John's, BDE, Grand Falls, Corner Brook and Stephenville. During the construction phase, six (6) camps were set-up along the right-of-way (RoW) of the transmission lines and used as accommodations for construction personnel. Each camp site typically contained a cabin, an outhouse and a drum storage area.

A newly built 188-km, high voltage transmission line (TL267) was completed by Hydro between BDE and the Avalon Peninsula and placed into service in early December 2017. The new 230 kilovolt (kV) transmission line's route parallels two existing transmission lines between the BDE Generating Station and the Western Avalon Terminal Station near Chapel Arm. As the former construction camps have not been in use within the past 15 years, Hydro plans to decommission these sites and demolish and remove all associated camp infrastructure.

1.2 Site Description

The six former construction camp sites are situated throughout the Bay Du Nord Wilderness Reserve, between the communities of Conne River and Swift Current, near the southeastern coast of Newfoundland (refer to Figure 1.1, Appendix A1). The two eastern most camp sites (Camp 1 and Camp 2) are currently accessible by gravel access road from the Burin Peninsula Highway (Route 210) near the community of Swift Current (near Piper's Hole River). The other four camp sites (Mitchell's Pond Camp, Hungry Grove Camp, Camp 100 and Medonnegonik Lake Camp) are currently assessable by gravel access road from the BDE Highway (Route 360) in the community of Conne River, near the Jipujijkuei Kuespem Provincial Park. Access bridges were scheduled to be removed, subsequently, access to the sites are limited to either all terrain vehicle (ATV) or a helicopter.

1.2.1 Camp #1

Camp #1 site is comprised of an accommodations cabin and an outhouse (refer to Photos 1 and 2, Appendix B1). The accommodations cabin is a one-storey, rectangular structure with a footprint area of approximately 61 m^2. The floor plan of the cabin consists of a kitchen, a bedroom and a washroom, with an attached generator shed. The outhouse is a one-storey, rectangular structure with a footprint area of approximately 3 m^2.

1.2.2 Camp #2

Camp #2 site is comprised of an accommodations cabin and an outhouse (refer to Photos 3 and 4, Appendix B1). The accommodations cabin is a one-storey, rectangular structure with a footprint area of approximately 61 m^2. The floor plan of the cabin consists of a kitchen, a bedroom and a washroom, with an attached generator shed. The outhouse is a one-storey, rectangular structure with a footprint area of approximately 4 m^2.

1.2.3 Mitchell's Pond Camp

Mitchell's Pond Camp site is comprised of an accommodations cabin and an outhouse (refer to Photos 5 and 6, Appendix B1). The accommodations cabin is a one-storey, rectangular structure with a footprint area of approximately 71 m^2. The floor plan of the cabin consists of a kitchen with a bunk area, a pantry and a washroom. The outhouse is a one-storey, rectangular structure with a footprint area of approximately 3 m^2.

1.2.4 Hungry Grove Camp

Hungry Grove Camp site is comprised of an accommodations cabin and an outhouse (refer to Photos 7 and 8, Appendix B1). The accommodations cabin is a one-storey, rectangular structure with a footprint area of approximately 67 m^2. The floor plan of the cabin consists of a kitchen with a bunk area and three other rooms. The northwest side of the cabin, which contains the three rooms, appears to be an add-on section (date of construction unknown). The outhouse is a one-storey, rectangular structure with a footprint area of approximately 3 m^2.

1.2.5 Camp 100

Camp 100 site is comprised of an accommodations cabin and an outhouse (refer to Photos 9 and 10, Appendix B1). The accommodations cabin is a one-storey, rectangular structure with a footprint area of approximately 66 m^2. The floor plan of the cabin consists of a kitchen with a bunk area, a pantry and a storage room. The outhouse is a one-storey, rectangular structure with a footprint area of approximately 3 m^2.

1.2.6 Medonnegonik Lake Camp

Medonnegonik Lake Camp site is comprised of an accommodations cabin, an outhouse and a helipad (refer to Photos 11, 12 and 13, Appendix B1). The accommodations cabin is a one-storey, rectangular structure with a footprint area of approximately 67 m^2. The floor plan of the cabin consists of a kitchen with a bunk area, a washroom, a porch and a bedroom. The east side of the cabin, which contains the washroom, porch and bedroom, appears to be an add-on section (date of construction unknown). The outhouse is a one-storey, rectangular structure with a footprint area of approximately 3 m^2. The helipad is a rectangular platform structure with a footprint area of approximately 15 m^2.

1.3 Report Structure

This HBMA report is structured in the following manner:

- Section 1.0: Introduction
- Section 2.0: Findings - Camp #1
- Section 3.0: Findings - Camp #2
- Section 4.0: Findings - Mitchell's Pond Camp
- Section 5.0: Findings - Hungry Grove Camp
- Section 6.0: Findings - Camp 100
- Section 7.0: Findings - Medonnegonik Lake Camp
- Section 8.0: Closure

For reporting purposes, the findings, conclusions and recommendations for future actions, where warranted, for each site has been provided in a separate section within the report. It is also important to note that the report has been structured such that each section includes a separate table of contents.

1.4 Objectives

The objectives of the Pre-Demolition HBMA were to determine if hazardous building materials are present in the site buildings and to identify the condition and approximate quantity of these materials.

1.5 Scope of Work

The scope of work for the HBMA, as per Wood's workplan[1] included:

- Preparing a site-specific Health and Safety Plan (HASP) and submitting the plan to Hydro.
- Conducting a site reconnaissance to visually inspect potential hazardous building materials within the site buildings, including:
  - Asbestos-containing materials (ACMs);
  - Lead-based paint (LBP) and other lead-containing materials or equipment;
  - Mercury-based paint (MBP) and other mercury-containing materials or equipment;
  - Polychlorinated biphenyl (PCB)-based paint and other PCB-containing materials;
  - Treated timber materials;
  - Urea formaldehyde foam insulation (UFFI);
  - Suspected visible mould growth (SVG); and
  - Other potentially hazardous building materials and equipment.

[1] Wood. June 19, 2018. Professional Services for Six (6) Construction Camp Sites, Bay d'Espoir – Avalon Transmission Line, Newfoundland and Labrador – Workplan for Phase I/II Environmental Site Assessment and Pre-Demolition Hazardous Building Materials Assessment. Prepared for Newfoundland and Labrador Hydro, Environmental Services.

- Inspecting all accessible thermostats to assess the presence or absence of mercury-containing switches.
- Documenting the number and type of fluorescent light fixtures identified during the assessment.
- Documenting the location of any fire-rated doors identified during the assessment.
- Documenting the location of ozone depleting substance (ODS)-containing appliances and equipment identified during the assessment.
- Performing cavity inspections to attempt to identify any hidden and potentially hazardous building materials that may be concealed by walls or ceiling systems.
- Sampling and laboratory testing of suspected ACMs to confirm the presence or absence of asbestos fibres.
- Sampling and laboratory testing of paint to determine the concentrations of lead and mercury, and if warranted based on the concentrations of lead and mercury, laboratory testing of paint for lead and mercury leachate using the Toxicity Characteristic Leaching Procedure (TCLP) to determine proper disposal options for painted materials.
- Sampling and laboratory testing of paint and other suspected PCB-containing materials to determine the concentrations of PCBs.
- Sampling and laboratory testing of suspected mould impacted materials to confirm the presence or absence of mould.
- Depending on the type of chemical treatment applied, sampling and laboratory testing of treated timber materials to determine the concentrations of "pressure treated" inorganic preservatives, creosote or chlorophenolic formulations using the TCLP to determine proper disposal options for treated timber materials.
- Preparing a written report documenting the methodologies and findings of the Pre-Demolition HBMA, with recommendations for handling and disposal of any identified hazardous materials.

The findings of the Pre-Demolition HBMA were based on the interpretation of data from the areas investigated and analytical results pertaining to specific samples collected and tested. It is possible that materials exist that could not be reasonably identified within the scope of the work or which were not apparent or accessible during the site visit.

Inspecting accessible fluorescent lights for PCB-containing light ballasts and sampling of potential PCB-containing electrical cables or equipment was not included in the scope of work for the Pre-Demolition HBMA.

1.6 Environmental Regulatory Framework

The federal and provincial governments in Canada have prepared and/or adopted numerous acts, regulations, guidelines, policies, and procedures related to the protection of the environment and the investigation of sites containing hazardous building materials. Regulations and guidelines that were used to evaluate analytical results for samples of suspected hazardous materials collected during this assessment are discussed in the following sections.

1.6.1 Asbestos-containing Materials

There are over 3,000 ACMs that are commercially available, which can be divided into two broad categories: friable and non-friable. Friable ACMs are defined as materials that can be crumbled, pulverized and reduced to powder when dry using hand pressure. Typical friable materials include acoustical or decorative spray applications, fireproofing and thermal insulation. Non-friable ACMs are hard or manufactured products such as floor tiles, fire blankets, pre-formed manufactured cementitious insulation and wallboards, pipes, and siding, wherein the asbestos fibres are bound to the substrate. Although a product may be considered non-friable when new, the product may release fine dust when disturbed (e.g., deterioration, removal, renovation) and the free dust is considered friable.

Asbestos products are subject to various prohibitions and restrictions under Provincial and Federal legislation. While ACMs are still manufactured globally and were available for limited use in Canada prior to 2019, the building products available since the late 1980s to early 1990s tend to be low risk, non-friable materials. Buildings constructed between 1986 and 1990 are unlikely to contain high risk ACMs such as mechanical or spray applied insulation and newer buildings (post-1992) are less likely to contain non-friable ACMs.

In October 2018, new and more stringent Federal regulations were finalized in Canada which prohibit the import, sale and use of asbestos, as well as the manufacture, import, sale and use of products containing asbestos, with a limited number of exclusions. These new regulations, entitled "*Prohibition of Asbestos and Asbestos Products Regulations*", officially came into force on December 30, 2018 and repeal the former *Asbestos Products Regulations*. However, these regulations do not apply to asbestos that is integrated into a structure or infrastructure if the integration occurred before the day on which these regulations came into force.

The legislative requirements for safe handling of ACMs in workplaces in the Province of NL are currently provided in the *NL Asbestos Abatement Regulations (Reg. 111/98)*, under the *NL Occupational Health and Safety Act*. In accordance with these Provincial regulations, all buildings constructed during the period when asbestos was readily used in construction must have a written assessment and management plan (where applicable) for potential ACMs. The *NL Asbestos Abatement Regulations* define materials containing greater than 1% asbestos by dry weight as ACMs. It is also important to consider, in the event that asbestos is detected in a material at a level less than 1%, while it is not considered a regulated ACM under these Provincial regulations, the material would be subject to control measures under the *NL Occupational Health and Safety Regulations*.

In addition to the *NL Asbestos Abatement Regulations (Reg. 111/98)*, there are Provincial guidance documents available for low risk (Type I) and moderate risk (Type II) asbestos abatement. These guidelines were issued by the NL Occupational Health and Safety (OHS) Division in July 2010 and are entitled, "*Low Risk Asbestos Abatement Projects*" and "*Moderate Risk Asbestos Abatement Projects*". High risk asbestos abatement activities or those outside the scope of these guidelines are still required to follow the *NL Asbestos Abatement Regulations (Reg. 111/98)*.

The NL OHS Division may also require additional controls than those included in these guidance documents. All asbestos abatement projects require the completion of a risk assessment by a competent individual and the work procedures must be modified accordingly.

1.6.2 Lead in Paint

Lead compounds have been used in paint as pigment and durability additives since the early 1800s. The *Surface Coating Material Regulations*, under the *Canada Consumer Product Safety Act*, state that a surface coating material must not contain more than 90 mg/kg total lead when a dried sample is tested in accordance with a method that conforms to good laboratory practices. These regulations define a surface coating material as a paint or other similar material, with or without pigment, that dries to a solid film after it is applied to a surface but does not include material that becomes a part of the substrate. It is important to consider, in the event that lead is detected in paint or other surface coating materials at a concentration less than 90 mg/kg, while it is not considered a LBP in accordance with the *Surface Coating Material Regulations*, the paint would be subject to control measures under the *NL Occupational Health and Safety Regulations*.

Prior to the *Canada Consumer Product Safety Act*, lead in surface coating materials was regulated under the *Federal Hazardous Products Act*. In 1976, the *Liquid Coating Materials Regulations*, under the *Hazardous Products Act*, restricted the lead content of paints and other liquid coatings on furniture, household products, children's products, and exterior and interior surfaces of any building frequented by children to 0.5% by weight (5,000 mg/kg). In order to determine disposal options, the former *Hazardous Products Act* criterion of 5,000 mg/kg lead in paint is typically used as a Provincial disposal guideline to determine whether or not paint samples should be submitted for leachate analysis. Paint samples that contain less than 5,000 mg/kg are not likely to be leachable, and therefore, may be disposed of at an approved landfill facility, pending landfill and Provincial regulatory approval. Paint samples with lead concentrations in excess of 5,000 mg/kg should be subjected to leachability testing.

The NL Department of Environment (currently the NL Department of Municipal Affairs and Environment (MAE)), 2003 Guidance Document for Leachable Toxic Waste, Testing and Disposal (GD-PPD-26.1) guideline of 5.00 mg/L lead should be used to assess the results of the leachability testing to determine disposal options for any lead-containing paint to be removed during renovation or demolition activities. Any paints that require disposal and exceed the lead leachate guideline are considered to be leachable toxic waste and must be disposed of at an approved hazardous waste disposal site and not a landfill disposal site.

1.6.3 Mercury in Paint

Mercury compounds have been used in paint as anti-microbial additives up until the 1990s. The *Surface Coating Material Regulations*, under the *Canada Consumer Product Safety Act*, state that a surface coating material must not contain more than 10 mg/kg total mercury when a dried sample is tested in accordance with a method that conforms to good laboratory practices. It is important to consider, in the event that mercury is detected in paint or other surface coating materials at a concentration less than 10 mg/kg, while it is not considered a MBP under the *Surface Coating Material Regulations*, the paint would be subject to control measures under the *NL Occupational Health and Safety Regulations*.

In order to determine disposal options, the Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guidelines (CSQG) criterion of 50 mg/kg for mercury in soil at an industrial site is typically used as a Provincial disposal guideline to determine whether or not paint samples should be submitted for leachate analysis. Paint samples with a mercury concentration of less than 50 mg/kg are not likely to be leachable, and therefore, may be disposed of at an approved landfill facility, pending landfill and Provincial regulatory approval. Paint samples with a mercury concentration in excess of 50 mg/kg should be subjected to leachability testing.

The NL Department of Environment (currently the NL MAE), 2003 Guidance Document for Leachable Toxic Waste, Testing and Disposal (GD-PPD-26.1) guideline of 0.10 mg/L mercury should be used to assess the results of the leachability testing to determine disposal options for any mercury-containing paint to be removed during renovation or demolition activities. Any paints that require disposal and exceed the mercury leachate guideline are considered to be leachable toxic waste and must be disposed of at an approved hazardous waste disposal site and not a landfill disposal site.

1.6.4 PCBs in Paint and Other Materials

PCBs were used in paint as plasticizers and corrosion resistance additives from the 1950s to the 1970s.

Analytical results for PCBs in paint and/or other materials (i.e., caulking, sealants, tar, etc.) were compared to the CCME CSQG criterion of 33 mg/kg for PCBs in soil at an industrial site. The Federal HPA does not include any assessment criteria for PCBs in paint.

In order to determine disposal options for paint and/or other suspected PCB-containing materials, concentrations of PCBs in building materials should be compared to the criterion of 50 mg/kg for PCB solid provided in the NL Department of MAE, 2003 Guidance Document for Leachable Toxic Waste, Testing and Disposal (GD-PPD-26.1) and the Federal Transportation of Dangerous Goods (TDG) Regulations. Any building materials (i.e., paints, caulking, etc.) that require disposal and exceed the PCB solid criterion must be disposed of at an approved hazardous waste disposal site and not a landfill disposal site.

1.6.5 Mould Impacted Materials

There are currently no regulations in Canada specifically covering exposure to mould, and there are no occupational exposure limits that define acceptable levels of mould exposure without adverse health effects. However, Section 4 of the *NL Occupational Health and Safety Act* states that an employer shall ensure, where it is reasonably practicable, the health, safety and welfare of his or her workers, and Section 42 of the *NL Occupational Health and Safety Regulations* states that an employer shall monitor the use or presence of substances at the workplace that may be hazardous to the health and safety of workers. This includes exposure to moulds and other biological matter. Since there are no clear regulatory limits for determining an acceptable exposure limit to moulds, there is no numerical guideline for determining safe or unsafe concentrations of surface mould growth. Therefore, interpretation of sampling results is subjective.

Although there are currently no regulations for mould remediation practices, there are mould assessment and remediation guidelines available in Canada. The Canadian Construction Association (CCA)[2] and the Environmental Abatement Council of Ontario (EACO)[3] have developed guidelines that are intended to provide safe work practices for workers involved in mould abatement/remediation. In recent years remediation strategies have been based (in part) on the quantity of mould observed, assuming that potential exposure increases with an

[2] CCA. 2018. Mould Guidelines for the Canadian Construction Industry.
[3] EACO. 2015. EACO Mould Abatement Guidelines, Edition 3.

increase in overall mould concentrations. The risk criteria used during this assessment was based on the 2015 EACO guidelines.

1.6.6 Treated Wood Chemicals

The chemicals that are used to protect and preserve wood products from insect attack and fungal decay may pose risks to human health and the environment. Depending on the wood treatment used, treated wood materials may be considered hazardous waste upon disposal.

In order to determine disposal options for treated wood materials, depending on the type of chemical treatment applied, treated wood samples should be subjected to leachability testing. The NL Department of MAE (formerly NL Department of Environment), 2015 Guidance Document for Treated Wood Waste Disposal (GD-PPD-075.1) landfill disposal standards should be used to assess the results of leachability testing to determine disposal options for any treated wood waste (TWW)to be removed during any disturbance, demolition or renovation activities. Any TWW that requires disposal and exceeds the applicable landfill disposal standards is considered to be leachable toxic waste and must be disposed of at an approved hazardous waste disposal site and not a landfill disposal site.

1.7 Methodology

The following sections present the methodology of the document review, visual inspection (intrusive and non-intrusive), bulk material and paint sampling, laboratory analytical program, and QA/QC program for the HBMA. Various site visits were conducted between July 30 and October 4, 2018 after regular working hours. Wood field personnel were accompanied at all times while on-site by building security personnel (Canadian Corps of Commissionaires).

The site inspection and sampling for the Pre-Demolition HBMA were conducted by Wood personnel on August 7, 8 and 13, 2018. Wood was accompanied by a representative of Hydro (Environmental Coordinator) during the site visit.

1.7.1 Visual Inspection

A site reconnaissance was conducted to visually inspect potential hazardous building materials, including potential ACMs, LBPs, MBPs, and other potential hazardous building materials and equipment. The inspection also included searching for visible signs or evidence of water staining/damage, excess moisture/infiltration and mould growth, and identifying potential sources of ODS. Thermostats (if present) were visually inspected by removing the casings and checking for the presence of mercury-containing switches. In addition, a survey of fire-rated doors was completed, which included searching for fire-rating labels located on the hinge side or top edge of doors and on the hinge side of door frames.

Intrusive cavity inspections were performed (where possible) at pre-selected locations throughout the site buildings by removing ceiling and floor panels, opening wall/ceiling access hatches, and where necessary, by cutting holes in the drywall surfaces of walls/ceilings to create openings for visual inspection and to allow access to sample any suspected hazardous building materials, if identified.

1.7.2 Bulk Material Sampling and Laboratory Analytical Program

Building materials suspected of containing asbestos or suspected of being impacted by mould growth were sampled by removing a 2.0 cm by 2.0 cm piece of material (where possible) and placing the sampled materials into Glad® or Ziploc® plastic bags. Building materials suspected of containing PCBs (e.g., caulking) were sampled by cutting and removing a 2.0 cm long piece of material (where possible) and placing the sampled materials into Glad® or Ziploc® plastic bags. Building materials suspected of containing wood preservatives were sampled by cutting off a 2.5 cm thick section of the material (where possible) using a reciprocating saw and placing the sampled materials into Glad® or Ziploc® plastic bags.

Bulk material samples suspected of containing asbestos were submitted to the EMSL Canada Inc. (EMSL) laboratory located in Mississauga, Ontario (ON) for the analysis of asbestos using Polarized Light Microscopy (PLM) with dispersion staining. The analysis was conducted in accordance with the United States Environmental Protection Agency (USEPA) Method EPA 600/R-93/116 (Method for the Determination of Asbestos in Bulk Building Materials). EMSL is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) and the American Industrial Hygiene Association (AIHA) for bulk asbestos fibre analysis by PLM.

Bulk material samples suspected of being impacted by mould growth were submitted to the EMC Scientific Inc. (EMC) laboratory located in Mississauga, ON for direct microscopic examination (DME) to identify the type of mould to the genus level. EMC is an AIHA Environmental Microbiology Proficiency Analytical Testing (EMPAT) program participant.

Bulk material samples suspected of containing PCBs were submitted to the AGAT Laboratories (AGAT) branch located in St. John’s, NL for the analysis of PCBs. The analysis of PCBs was conducted in accordance with EPA Method 8082A (SW-846) using gas chromatography (GC).

Bulk material samples suspected of containing wood preservatives were submitted to the AGAT laboratory branch located in St. John’s, NL for the analysis of TCLP analyses of arsenic, chromium, benzo(a)pyrene and pentachlorophenol.

1.7.3 Paint Sampling and Laboratory Analytical Program

Paint samples were collected from painted surfaces by cutting out a section of painted drywall paper or by scraping areas of flaking paint from hard surfaces using clean knives and scrapers. Samples were collected down to bare substrate (e.g., drywall, concrete and wood) and in some instances included the substrate (e.g., wood and drywall paper). A minimum of 15 grams (where possible) of paint was obtained from each sampling location and the samples were placed in Glad® or Ziploc® plastic bags.

Paint samples were submitted to the AGAT Laboratories (AGAT) laboratory located in Dartmouth, Nova Scotia (NS) for the analysis of lead and mercury. The lead analysis was conducted in accordance with the EPA 6020A/3050B (SW-846), method analysis for metals using inductively coupled plasma – mass spectrometry (ICP-MS) and acid digestion. The mercury analysis was conducted in accordance with EPA methods 245.5 and SM3112B using cold vapour atomic absorption spectroscopy (CV/AAS). AGAT is accredited under the Standards Council of Canada (SCC) to perform analysis of lead and mercury in paint.

Paint samples were also submitted to the AGAT branch located in St. John's, NL for the analysis of lead, mercury, leachable lead, leachable mercury and PCBs. The analyses of lead, mercury and leachable lead was conducted in accordance with EPA 6020A using inductively coupled plasma – mass spectrometry (ICP-MS). The analysis of leachable mercury was conducted in accordance with EPA 245.1 using cold vapor atomic absorption (CVAA). The analysis of PCBs was conducted in accordance with EPA Method 8082A (SW-846) using GC. Maxxam is accredited under the Standards Council of Canada (SCC) to perform analysis of lead, mercury and PCBs in paint samples.

1.8 Quality Assurance / Quality Control Program

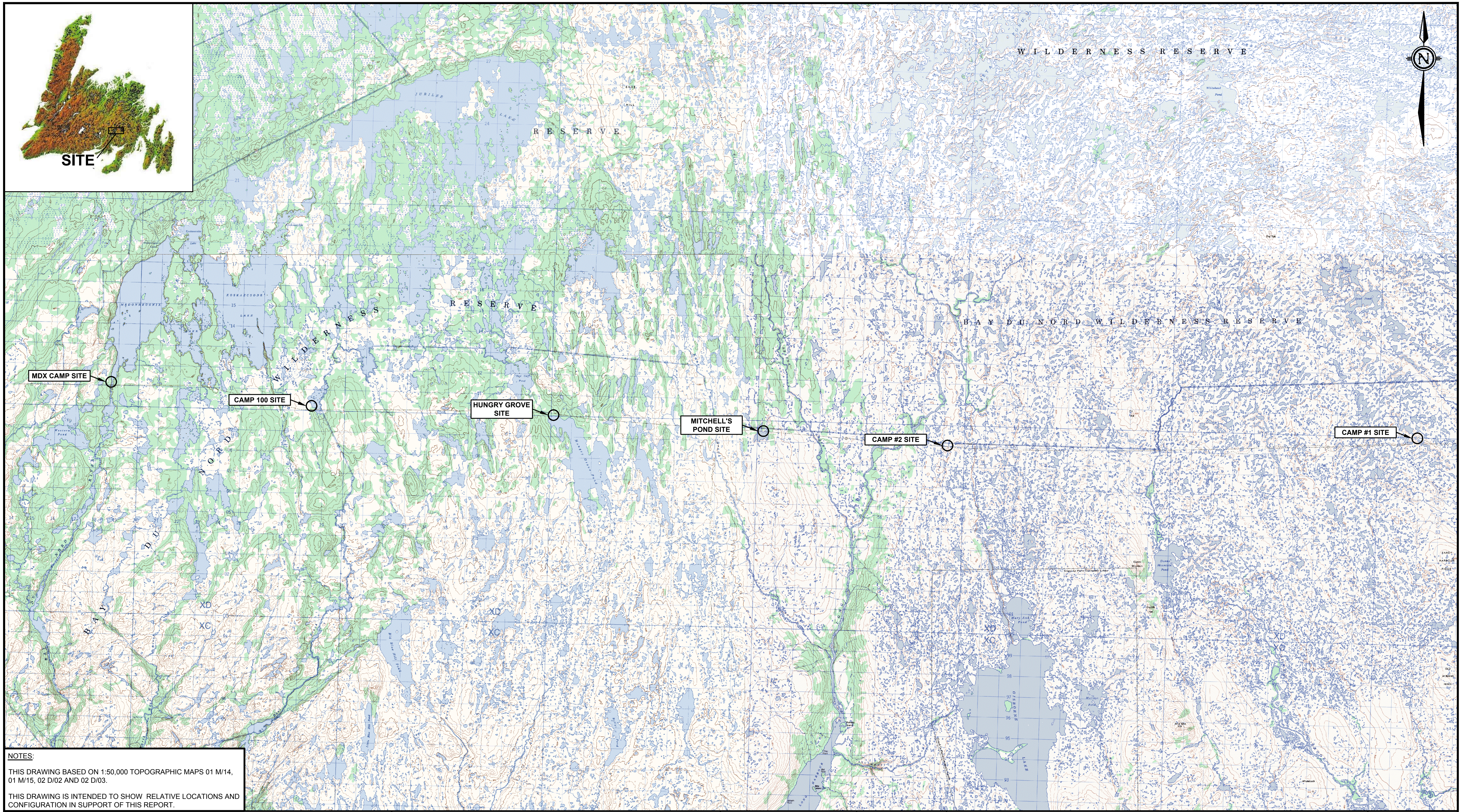
Laboratory blanks, duplicates and quality control (QC) standard samples were analyzed to assess the reliability of the analyses. In order to minimize cross contamination during sampling, a field quality assurance / quality control (QA/QC) program was implemented, which included the following measures:

- Latex or nitrile gloves were worn during sampling (i.e., new pair of gloves used for each sample).
- All sampling equipment was thoroughly cleaned prior to sampling to ensure that samples were unaffected by cross-contamination from previous samples.
- Each sample was photographed, given a unique sample ID and logged onto a chain of custody form before shipment to the laboratory.

The laboratories utilized have extensive QA/QC programs in place to ensure that reliable results are consistently obtained. Some of the specific laboratory QA/QC measures include:

- Chain of Custody and sample integrity inspection.
- Strict documentation control and files.
- Trained personnel prepare and analyze samples according to Standard Operating Procedures (SOPs).
- All analytical methods are based on accepted procedures and are fully validated prior to use.
- Precision is monitored by performing replicate analysis of samples.
- Accuracy is verified by analyzing spiked samples and reference materials.
- Instrument calibration integrity is ensured by analyzing calibration check standards within each run sequence.
- Extensive use is made of reference material for routine procedure evaluation.
- Highest available purity analytical standards.
- Predefined analytical sequences ensure all results are traceable to calibration and QC data.
- Hard copy reports displaying all of the required data are generated for each instrument.
- Analytical results are determined only from instrument responses that fall within the calibration range.
- Acceptable QC performance must be demonstrated prior to data authorization.
- On-going method and instrument performance records are maintained for all analysis.
- A full-time QA Scientist evaluates the QA program on an on-going basis.

APPENDIX A1: FIGURES



NOTES:

1. ALL DIMENSIONS ARE IN METERS.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF NEWFOUNDLAND LABRADOR HYDRO AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.

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Project: Pre-Demolition Hazardous Building Materials Assessment, Former Construction Camp Sites, Bay d'Espoir - Avalon Transmission Line, NL

Title: Site Location Plan

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APPENDIX B1: PHOTOGRAPHIC RECORD


Photo 1: View of accomodations cabin at Camp #1.


Photo 2: View of the outhouse at Camp #1.


Photo 3: View of accomodations cabin at Camp #2.


Photo 4: View of the outhouse at Camp #2.


Photo 5: View of accomodations cabin at Camp 100.


Photo 6: View of the outhouse at Camp 100.


Photo 7: View of accomodations cabin at Hungry Grove Camp.


Photo 8: View of the outhouse at Hungry Grove Camp.

Photo 9: View of accomodations cabin at Medonnegonik Camp.

Photo 10: View of the outhouse at Medonnegonik Camp.

Photo 11: View of accomodations cabin at Mitchell's Pond Camp.

Photo 12: View of the outhouse at Mitchell's Pond Camp.

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APPENDICES

2.0 CAMP # 1 SITE

Camp #1 site is located approximately 10 km (along a gravel access road) from the Burin Peninsula Highway (Route 210) near the community of Swift Current (near Piper's Hole River) (refer to Figure 2.1, Appendix A2 and Photos 1 to 4, Appendix B2). Camp #1 site is comprised of an accommodations cabin and an outhouse.

2.1 BUILDING DESCRIPTION

The accommodations cabin is a one-storey, rectangular structure with a footprint area of approximately 61 m^2 (refer to Photos 5 to 14, Appendix B2). The floor plan of the cabin consists of a kitchen, a bedroom and a washroom, with an attached generator shed (refer to Figure 2.2, Appendix A2). The foundation of the accommodations cabin consists of concrete footings, with a concrete slab for the generator shed. The structure of the accommodations cabin and generator shed consists of concrete block and wood framing. The exterior walls on the accommodations cabin is finished with metal siding and the roof is finished with asphalt shingles. The window and exterior door openings on the accommodations cabin are barricaded with metal covers for security purposes. Interior wall and ceiling finishes in the accommodations cabin consists of painted plywood. Floors/floor finishes consist of plywood. Incandescent lighting was observed on the interior and exterior of the building. The accommodations cabin is not currently heated. The accommodations cabin consists of a kitchen (Room 1), bedroom (Room 2) and a washroom (Room 3).

The outhouse is a one-storey, rectangular structure with a footprint area of approximately 3 m^2 (refer to Figure 2.2, Appendix A2). The foundation and structure of the outhouse consists of wood framing. The exterior walls on the outhouse are finished with plywood and the roof is finished with asphalt shingles. Interior wall and ceiling finishes in the outhouse consist of painted plywood. Floor finishes consist of plywood. The outhouse does not contain any lighting or heating (refer to Photos 15 and 16, Appendix B2).

A description of the accommodations cabin is outlined in Table 2-1 and a description of the outhouse is outlined in Table 2-2. Photographs of the site buildings are provided in Appendix B2.

Table 2-1: Site Building Description – Accommodations Cabin

Building Name	Accommodations Cabin	Photo No. (Appendix B2)
Date of Construction	Approximately late 1960's/early 1970's (exact date not known)	-
Date of Renovations	Unknown	-
No. of Stories	One	5 and 6
Crawl Space (Yes/No)	No	-
Attic (Yes/No)	Yes	-
Type of Structure	Concrete blocks and Wood Frame	5 and 6
Type of Foundation	Wood Beams on concrete and concrete blocks	19 and 23
Exterior	Metal Siding	5 and 6
Window/Door Frames	Painted Metal and Wood	5
Exterior Doors	Painted Metal	5
Roofing Materials	Asphalt Shingles	6 and 22
Interior Walls Finishes	Painted Plywood	7 to 11
Interior Ceiling Finishes	Plywood	7
Floor Finishes	Plywood	8 to 11

Table 2-1: Site Building Description – Accommodations Cabin

Building Name	Accommodations Cabin	Photo No. (Appendix B2)
Interior Doors	NA	-
Interior Lighting	Incandescent	7
Exterior Lighting	Incandescent	5
Heating	Previously Oil	9

Table 2-2: Site Building Description – Outhouse

Building Name	Outhouse	Photo No. (Appendix B2)
Date of Construction	Approximately late 1960's/early 1970's (exact date not known)	-
Date of Renovations	Unknown	-
No. of Stories	One	15
Crawl Space (Yes/No)	No	-
Attic (Yes/No)	No	-
Type of Structure	Wood Frame	15 and 16
Type of Foundation	Wood Frame	15 and 16
Exterior	Plywood	15
Window/Door Frames	Wood	-
Exterior Doors	NA	-
Roofing Materials	Asphalt Shingles	15
Interior Walls Finishes	Painted Plywood	16 and 29
Interior Ceiling Finishes	Plywood	-
Floor Finishes	Plywood	15
Interior Doors	NA	-
Interior Lighting	NA	-
Exterior Lighting	NA	-
Heating	NA	-

2.2 ROOM DESIGNATION

Each room at Camp #1 was assigned a specific room name. The designated room names are presented in Table 2-3 and graphically illustrated on the sample location plan (refer to Figure 2.2, Appendix A2).

Table 2-3: Assigned Rooms

Level No.	Room Name – Accommodations Cabin	Room Number
1	Kitchen	Room 1
1	Bedroom	Room 2
1	Bathroom	Room 3
1	Outhouse	Outhouse

2.3 FINDINGS

The findings documented in this section are based on observations made by Wood personnel at the time of the site visit on August 13, 2018 and the results of laboratory analyses of samples collected from Camp #1. During the Pre-Demolition HBMA site visit, Wood personnel were accompanied by a representative of Hydro (Mr. Wayne Lidster). Copies of room-by-room inspection sheets for the accommodations building and outhouse are provided in Appendix D2. Photos of the samples collected from the accommodations building and outhouse during the site visits are provided in Appendix B2.

2.3.1 Asbestos-Containing Materials (ACMs)

There are over 3,000 ACMs that are commercially available, which can be divided into two broad categories: friable and non-friable. ACMs were discontinued from use in Canada in the late 1970s/early 1980s, although non-friable asbestos is still found in many more recent buildings.

During the Pre-Demolition HBMA site visit, a total of five (5) building material samples (C1-AS-1 to C1-AS-5) were collected from the accommodations cabin and 1 building material sample (C1-PP-AS1) from the outhouse (refer to Photos 17 to 22, Appendix B2) and analyzed for asbestos content. Bulk sample descriptions and asbestos analytical results are summarized in Table C2-1, Appendix C2. Sample locations and analytical results are graphically illustrated in Figure 2.2, Appendix A2.

2.3.1.1 Friable Materials

Friable ACMs are defined as materials that can be crumbled, pulverized and reduced to powder when dry using hand pressure. Typical friable materials include acoustical or decorative spray applications, fireproofing and thermal insulation.

2.3.1.1.1 Spray-Applied Fireproofing, Insulation and Texture Finishes

There were no spray-applied fireproofing, insulation or texture finishes observed in the accommodations cabin or outhouse during the Pre-Demolition HBMA site visit; therefore, no samples of these materials were collected for analysis.

2.3.1.1.2 Building and Thermal System Insulation

During the Pre-Demolition HBMA site visit, fiberglass batt insulation was observed in the attic and walls of the accommodations cabin (refer to Photos 12, 17 and 18, Appendix B2). Thermal system insulation was not observed at Camp #1.

Two (2) samples of building insulation (C1-AS-1 and C1-AS-2) were collected from the attic and wall of the accommodations cabin and analyzed for asbestos content. Sample C1-AS-1 was collected from the interior wall and consisted of black paper backing and pink fiberglass insulation. Sample C1-AS-2 was collected from the attic and consisted of black paper backing and yellow fiberglass insulation. Asbestos was not detected in the insulation samples.

2.3.1.2 Non-Friable and Potentially Friable Materials

Non-friable ACMs are hard or manufactured products such as floor tiles, fire blankets, pre-formed manufactured cementitious insulation and wallboards, pipes, and siding, wherein the asbestos fibres are bound to the substrate. Note that although a product may be considered non-friable when new, the product may release fine dust when disturbed (e.g., deterioration, removal, renovations) and the free dust is considered friable.

2.3.1.2.1 Ceiling Tile

There were no ceiling tiles observed at Camp #1 during the Pre-Demolition HBMA site visit; therefore, no samples of ceiling tile were collected for analysis.

2.3.1.2.2 Drywall Joint Compound

There was no drywall joint compound observed at Camp #1 during the Pre-Demolition HBMA site visit; therefore, no samples of drywall joint compound were collected for analysis.

2.3.1.2.3 Vinyl Flooring Products and Mastics

There was no vinyl flooring or products observed at Camp #1 during the Pre-Demolition HBMA site visit; therefore, no samples of vinyl flooring or products were collected for analysis.

2.3.1.2.4 Baseboard, Carpet and Stair Tread Adhesives/Mastics

There were no baseboard, carpet or stair tread adhesives/mastics observed at Camp #1 during the Pre-Demolition HBMA site visit; therefore, no samples of these types of adhesives/mastics were collected for analysis.

2.3.1.2.5 Roofing Products

During the Pre-Demolition HBMA site visit, one (1) sample of black asphalt shingle and tar (C1-AS-5) was collected from the roof of the accommodations cabin and one (1) sample of black asphalt shingle and tar (C1-PP-AS-1) was collected from the roof of the outhouse and analyzed for asbestos content (refer to Photos 21 and 22, Appendix B2). Asbestos was not detected in the roofing product samples analyzed.

It is important to note that, due to height constraints, no samples of building materials around roof penetrations (e.g., caulking or sealants around vents or electrical conduit) or roof seams were collected for analysis (refer to Photo 6, Appendix B2).

2.3.1.2.6 Caulking/Sealant

There were caulking/sealants observed at Camp #1 during the Pre-Demolition HBMA site visit; therefore, no samples of caulking/sealants were collected for analysis.

2.3.1.2.7 Mortar, Grout and Other Cementitious Materials

During the Pre-Demolition HBMA site visit, one (1) sample of concrete (C1-AS-3) was collected from the concrete foundation of the accommodations cabin and one (1) sample of concrete block and mortar (C1-AS-4) was collected from the foundation of the accommodations cabin and analyzed for asbestos content (refer to Photos 19 and 20, Appendix B2). Asbestos was not detected in the concrete and concrete block and mortar samples analyzed.

2.3.1.2.8 Fire-Rated Doors

Fire-rated doors and door frames were not observed during the Pre-Demolition HBMA site visit.

2.3.1.2.9 Other Potential ACMs

Other potential ACMs were observed (or suspected to be present) and were not sampled due to the nature of the materials and/or hazards associated with sampling these materials. These materials included, but are not limited to, electrical and mechanical components and insulators such as wiring and gaskets, heat shields inside incandescent light fixtures, and caulking or sealants around or along roof seams, vent pipes, electrical conduits or other penetrations.

Other possible hidden and inaccessible ACMs have the potential to be present within the accommodations building but were not identified during the Pre-Demolition HBMA site visit. These possible ACMs could include concrete leveling compound (existing concrete foundation), possible fireproofing materials in the wall or ceiling cavities, piping/pipe joint sealants/gaskets and packing associated with cast iron pipe joints, fire rated structures or building materials, vapour barriers in walls, undercoatings on sinks, interior heat resistant components or gaskets inside appliances, concrete lining the interior of hot water boiler tanks, and underground infrastructure or piping.

2.3.2 Paint Additives

Lead compounds have been used in paint as pigment and durability additives since the early 1800s. Mercury compounds have been used in paint as anti-microbial additives up until the 1990s. PCBs have been used in paint as plasticizers and corrosion resistance additives from the 1950s to the 1970s.

During the Pre-Demolition HBMA site visit, six (6) samples (C1-PS1 to C1-PS6) were collected from painted surfaces of the accommodations cabin and three (3) samples (C1-PP-PS1 to C1-PP-PS3) were collected from painted surfaces of the outhouse and analyzed for lead, mercury and PCB content (refer to Photos 23 to 31, Appendix B2). Paint sample descriptions and lead, mercury and PCBs analytical results are summarized in Tables C2-2 to C2-4, Appendix C2. Sample locations and analytical results are graphically illustrated in Figure 2.1, Appendix A2.

2.3.2.1 Lead in Paint

Concentrations of lead in the six (6) samples (C1-PS1 to C1-PS6) collected from painted surfaces of the accommodations cabin and three (3) samples (C1-PP-PS1 to C1-PP-PS3) collected from the painted surfaces of the outhouse ranged from 36 mg/kg to 319 mg/kg (refer to Table C2-2, Appendix C2). Five (5) paint samples (C1-PS4, C1-PS5, C1-PS6, C1-PP-PS1 and C1-PP-PS2) contained lead at concentrations above the Federal HPA criterion of 90 mg/kg and below the former Federal HPA criterion of 5,000 mg/kg (refer to Photos 26 to 30, Appendix B2). The concentrations of lead in the other four (4) samples were below the Federal HPA criterion (90 mg/kg).

2.3.2.2 Mercury in Paint

The concentrations of mercury in the six (6) samples (C1-PS1 to C1-PS6) collected from painted surfaces of the accommodations cabin and three (3) samples (C1-PP-PS1 to C1-PP-PS3) collected from the painted surfaces of the outhouse ranged from non-detect (<0.05 mg/kg) to 1.8 mg/kg, and therefore were below the Federal HPA criterion (10 mg/kg) (refer to Table C2-3, Appendix C2).

2.3.2.3 PCBs in Paint

PCBs were not detected (<0.5 mg/kg) in any of the paint samples analyzed, and therefore were below the CCME CSQG for PCBs in soil at an industrial site (33 mg/kg) and the applicable criterion for PCB solid (50 mg/kg) (refer to Table C2-4, Appendix C2).

2.3.3 Urea Formaldehyde Foam Insulation (UFFI)

Visual indicators suggesting the potential presence of UFFI were not observed at Camp #1. The nature of the insulation in the walls and ceilings throughout the accommodations cabin consisted of fiberglass batt insulation (refer to Photos 12, 17 and 18, Appendix B2).

Since the original date of construction of Camp #1 (assumed construction commenced the same timeframe as the original transmission line, late 1960’s/early 1970’s) is unknown, it is possible that UFFI may be present.

In the event that UFFI is present, the CMHC state that “tests show that UFFI is not a source of over-exposure to formaldehyde after the initial curing and release of excess gas”. The general view based on studies concerning formaldehyde emissions is that as a product ages, the amount of formaldehyde off-gassed from the product decreases over time. The amount of formaldehyde released is reportedly dependent on temperature, humidity and whether or not the product is exposed to excessive moisture or water.

2.3.4 Suspected Visible Mould Growth (SVG)

Wood inspected the interior areas of the accommodations cabin and outhouse for visual or olfactory evidence of suspected mould. No SVG was noted during the Pre-Demolition HBMA site visit, however, water staining and peeling paint was observed in Rooms 1 (Kitchen) and 2 (Bedroom) of the accommodations cabin (refer to Photos 7 and 32, Appendix B2).

2.3.5 Mercury-Containing Thermostats

Thermostats were not identified inside the accommodations cabin at Camp #1 during the Pre-Demolition HBMA site visit.

2.3.6 PCB-Containing Light Ballasts

Incandescent light fixtures were observed on the exterior and interior of the accommodations cabin during the Pre-Demolition HBMA site visit (refer to Photos 5, 7, and 32, Appendix B2). There are no florescent lights present inside the site building.

2.3.7 Potential Sources of ODS and Halocarbons

During the Pre-Demolition HBMA, a potential source of ODS was identified within the accommodations cabin. Results of the ODS inspection is summarized in Table 2-4.

Table 2-4: Potential Sources of ODSs

Item	Manufacturer	Model (Serial No.)	Location Observed	Photo No. (Appendix B2)	Refrigerant	Potential ODS
Freezer	General	GC-7L-1	Room 1	33	R12	Yes

Based on observations made during the site visit, ODSs are present in the accommodations cabin in the form of refrigerant R12 contained in a freezer located in Room 1 (refer to Photo 33, Appendix B2). This refrigerant (R12) is a hydrochlorofluorocarbon (HCFC) and is regulated under the Federal Halocarbon Regulations.

Fire extinguishers were not observed at Camp #1 during the Pre-Demolition HBMA site visit.

2.3.8 Other Potentially Hazardous Building Materials or Substances

Other potentially hazardous building materials or substances identified during this assessment are presented in the following sections.

2.3.8.1 Lead-Containing Materials and Equipment

Lead is typically associated with plumbing solder and older pipe materials (e.g., cast iron pipe joints), as well as products such as radiation protective shielding and lead-acid batteries. Lead can also be present in steel and iron primer, industrial electrical jacketing, roof flashing and tank linings.

Since the actual date that Camp #1 was constructed is unknown (assumed to be 1966/1969), it is possible that lead solder is present in plumbing and piping (i.e., cast iron and copper piping) in this section of the building, as lead solder for use in potable water distribution pipes was not banned until the late 1980s (refer to Photos 34 and 35, Appendix B2).

2.3.8.2 Mercury-Containing Materials and Equipment

The light tubes and bulbs in HID and fluorescent light fixtures often contain limited quantities of mercury in a powder or vapour form. Incandescent light fixtures were observed on the exterior and the interior of the accommodations cabin during the Pre-Demolition HBMA site visit. There are no florescent lights present inside the site building.

2.3.8.3 PCB-Containing Materials and Equipment

According to the USEPA, PCBs may be present in caulking used in windows, door frames, masonry columns and other building materials in buildings built or renovated between 1950 and 1979. In addition, and as mentioned previously, insulating fluids and cooling oils in electrical equipment (i.e., transformers, fluorescent light ballasts, capacitors, etc.) often contained PCBs until around 1980.

2.3.8.4 Treated Wood Chemicals

The chemicals that are used to protect and preserve wood products from insect attack and fungal decay may pose risks to human health and the environment. Depending on the wood treatment used, treated wood may be considered a hazardous waste upon disposal. The NL Department of Environment and Conservation (currently the NL MAE), 2015 Guidance Document for Treated Wood Waste Disposal (GD-PPD-075.1) provides landfill disposal standards for "pressure treated" inorganic preservatives (i.e., arsenic and chromium) and creosote (i.e., total cresol and benzo(a)pyrene) and chlorophenolic (i.e., pentachlorophenol) formulations used to preserve wood. These landfill disposal standards for treated wood waste (TWW) are used to assess the results of leachability testing to determine disposal options for treated wood to be removed during renovation or demolition activities.

Treated wood was not identified during the Pre-Demolition HBMA site visit.

2.3.8.5 Silica

According to the CPWR – The Center for Construction Research and Training, many common construction materials contain silica including, asphalt, brick, cement, concrete, drywall, grout, mortar, stone, sand and tile. The dust created by cutting, grinding, drilling or otherwise disturbing these materials can contain crystalline silica particles.

Based on the Pre-Demolition HBMA site visit, silica is expected to be present in concrete used in the construction of the foundation for the accommodations building. Silica may also be present in the asphalt shingles used in the construction of the accommodations building.

2.3.8.6 Radioactive Materials

Smoke detectors were not observed during the Pre-Demolition HBMA site visit. Smoke detectors observed may contain very small amounts of radioactive material (i.e., Americium 241). Smoke alarms that use radioactive material incorporated in an ionization chamber are called "ion chamber smoke alarms".

2.4 CONCLUSIONS AND RECOMMENDATIONS

Based on observations made and information gathered during the Pre-Demolition HBMA, the following conclusions and recommendations are made with respect to the potential and actual presence of hazardous building materials at Camp #1.

2.4.1 ACMs

Results of the asbestos sampling and analytical program revealed that all building materials sampled at the time of the Pre-Demolition HBMA were non-detect for asbestos.

Other potential ACMs were observed (or suspected to be present) and were not sampled due to the nature of the materials and/or hazards associated with sampling these materials. These materials included, but are not limited to:

- Electrical and mechanical components and insulators such as wiring and gaskets.

- Heat shields inside incandescent light fixtures.
- Caulking or sealants around or along roof seams, vent pipes, electrical conduits or other penetrations.

Other possible hidden and inaccessible ACMs have the potential to be present within the buildings at Camp #1 but were not identified during the Pre-Demolition HBMA site visit. These possible ACMs could include concrete leveling compound (existing concrete foundation), possible fireproofing materials in the wall or ceiling cavities, piping/pipe joint sealants/gaskets and packing associated with cast iron pipe joints, fire rated structures or building materials, vapour barriers in walls, undercoatings on sinks, interior heat resistant components, concrete lining the interior of hot water boiler tanks, and underground infrastructure or piping.

If other potential ACMs that were not sampled as part of this assessment are encountered in the future, these materials should be treated as ACMs or samples should be collected and tested to verify asbestos content. This should be done as soon as these materials are encountered and before these materials are disturbed. This includes materials that are currently concealed by walls and ceiling systems.
In accordance with the NL Asbestos Abatement Regulations (Reg. 111/98), which provide the legislative requirements for safe handling of ACMs in workplaces in the Province of NL, the following is recommended:

- Safe work procedures shall be established.
- All buildings constructed during the period when asbestos was readily used in construction (generally prior to the early 1980s) or any buildings that are suspected as having asbestos must have a written assessment and management plan (where applicable) for potential ACMs.
- Materials suspected of containing asbestos are required to be handled as ACMs, until analysis by a competent laboratory determines whether or not it does contain asbestos.
- Prior to general demolition, all ACMs must be safely removed from the building and disposed of in accordance with appropriate environmental guidelines by an asbestos abatement contractor registered with the Occupational Health and Safety (OHS) Division of Service NL.
- Most work involving ACMs (i.e., disturbance, removal and encapsulation) must be conducted by a contractor registered with the OHS Division of Service NL.
- ACMs in good condition should be inspected on an annual basis.
- ACMs in poor condition should be removed from the building and transported off-site for proper disposal.
- Workers should don adequate respiratory protection and personal protective equipment (PPE) when working with ACMs.

Prior to the removal and/or abatement of any identified ACMs (or any other hazardous building materials), an abatement plan including technical specifications should be designed, prepared and supervised by a qualified professional and should be undertaken by qualified trades, in accordance with applicable standards. Activities involving the disturbance and/or removal of ACMs should be carried out in a manner that ensures asbestos fiber concentrations do not exceed the applicable American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV). ACMs can be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility.

2.4.2 Lead, Mercury and PCBs in Paint

Results of the paint sampling and analytical program revealed the following:

- **Lead and Leachable Lead in Paint**
  - The concentrations of lead in the six (6) samples (C1-PS1 to C1-PS6) collected from painted surfaces of the accommodations cabin and three (3) samples (C1-PP-PS1 to C1-PP-PS3) collected from paint surfaces of the outhouse ranged from non-detect (<5.0 mg/kg) to 319 mg/kg.
  - Five (5) paint samples (C1-PS4, C1-PS5, C1-PS6 C1-PP-PS1, and C1-PP-PS2) contained lead at concentrations above the Federal HPA criterion of 90 mg/kg and below the former Federal HPA criterion of 5,000 mg/kg; therefore, these paints are considered to be LBPs but are not likely to be leachable for lead.
  - The concentrations of lead in the other four (4) samples were below the Federal HPA criterion (90 mg/kg); therefore, these paints are not considered to be LBPs and are not likely to be leachable for lead.
- **Mercury and Leachable Mercury in Paint**
  - The concentrations of mercury in the six (6) samples (C1-PS1 to C1-PS6) collected from painted surfaces of the accommodations cabin and three (3) samples (C1-PP-PS1 to C1-PP-PS3) from the outhouse ranged from non-detect (<0.05 mg/kg) to 1.8 mg/kg; below the Federal HPA criterion (10 mg/kg). These paints are not considered to be MBPs and are not likely to be leachable for mercury.

- **PCBs in Paint**
  - PCBs were not detected (<0.5 mg/kg) in the six (6) samples (C1-PS1 to C1-PS6) collected from painted surfaces of the accommodations cabin and three (3) samples (C1-PP-PS1 to C1-PP-PS3) collected from paint surfaces of the outhouse analyzed, and therefore, below the CCME CSQG for PCBs in soil at an industrial site (33 mg/kg) and the applicable criterion for PCB solid (50 mg/kg).

Based on the paint sample analytical results, the paint samples collected from accommodations cabin and outhouse are not likely to be leachable for lead or mercury, and do not contain PCBs. Should disposal be required (e.g., renovation or demolition activities), the paints analyzed for lead, mercury and PCB content may be disposed of at an approved landfill facility, pending landfill and Provincial regulatory approval.

It is important to note that the red paint on the door, window/door covers, window/door trims and plywood of outhouse exterior appear to be the same as the red paint sampled at Camp 2, where a concentration (10, 400 mg/kg) of lead was detected in paint sample PP-PS6 (red paint on the exterior door of the accommodations cabin) above the former Federal HPA criterion of 5,000 mg/kg. Therefore, lead leachate analysis is required to determine whether or not the painted surfaces of the door, window/door covers and window/door trims can be disposed of at a landfill. Alternatively, the metal door and associated trim may be sent to a metal recycling facility, provided the facility is informed about the concentration of lead in the paint. Given the nature of the paint on the exterior door (thin layer of paint on metal), it may not be possible to collect enough volume of paint for leachate analysis.

There are potential adverse human health impacts associated with disturbing (e.g., scraping, sanding, burning, etc.) lead-containing paint finishes, due to the potential for dust, mist or fumes to be released and inhaled or ingested by workers. As a precautionary measure, Wood recommends handling these paint finishes, as follows:

- In areas of minor peeling or flaking, the paint should be removed using wet scraping techniques.
- In areas of extensive peeling and flaking, the paint should be removed and more extensive particulate control measures may be required.
- In areas where lead-containing paint finishes are present and in poor condition, an experienced contractor should be utilized for renovating, decommissioning or demolition activities.
- Prior to renovation, dismantling or demolition activities, all areas of extensive peeling and flaking of lead-containing paint finishes and paint debris/dust should be removed and/or remediated to ensure that building occupants/workers are protected from associated dust/particulate.
- Procedures should be implemented to ensure that workers and anyone present in and around areas being renovated, dismantled or demolished are protected. The contractor should also ensure that dust generation and migration is minimized.
- Precautions should be taken to prevent/reduce exposure to paint dust during any disturbance of lead-containing paint finishes, such as wetting the surface of the materials to prevent dust emissions, donning respiratory protection, and cleaning tools and clothing prior to exiting work areas.
- Where possible, lead-containing paint finishes should be removed from metal surfaces prior to welding or cutting these materials.

If potential lead, mercury or PCB containing paint finishes that were not sampled during this assessment are encountered in future, prior to any disturbance or removal, samples should be obtained and tested to verify concentrations of lead, mercury and PCBs. This includes materials that are currently concealed by walls and ceiling systems.

Any disturbance or removal of lead, mercury or PCB-containing paint finishes that may generate dust or respirable aerosols must conform to the Federal and Provincial OHS Regulations. All work should be carried out by individuals wearing proper PPE. The type of respiratory protection and control measures to be implemented during the removal of these types of paint finishes should be determined by a qualified person and based on the risk level of a particular work activity (i.e., scraping, sanding, abrasive blasting, etc.). Activities involving the disturbance and/or removal of lead, mercury or PCB-containing paint finishes should be carried out in a manner that ensures paint dust concentrations do not exceed the applicable ACGIH TLVs.

2.4.3 Potential UFFI

The sale and installation of UFFI was banned in 1980; since the original date of construction is unknown, it is possible that UFFI may be present in the building. Visual indicators suggesting the potential presence of UFFI were not observed in the building. It can be inferred that any UFFI present within the building is unlikely to affect the indoor air quality due to the amount of time that has passed since the insulation was likely installed (i.e., pre-1980) along with the likelihood that formaldehyde has off-gassed over this period of time. It should be noted that, the presence and concentration of formaldehyde cannot be determined or quantified without conducting site-specific testing for formaldehyde.

Although there is currently no Provincial regulations requiring that the removal of UFFI be conducted by a licensed/registered abatement contractor, based on discussions with representatives of the OHS Division of Service NL, it is strongly recommended that this material be abated using similar methods as required for asbestos abatement and that the insulation must be removed in a dry condition. Based on discussions with representatives of the NL MAE, for the purposes of disposal of UFFI, this material is permitted to be bagged and transported to an approved WDS and disposed in the special waste area (unlined area) of the site.

2.4.4 Mould

The ceiling of Room 1 in the accommodations cabin is peeling and contains some water staining. Existing conditions in the building (e.g., suspected water infiltration due to leaks) may potentially contribute to or enhance mould growth inside the building.

Mould spores are present in all indoor environments and cannot be completely eliminated. Cellulose based building materials provide a nutrient base for many mould species; however, mould cannot grow unless an adequate amount of excess moisture is present. The most effective way to prevent mould growth within a building is the prompt removal of any porous building materials with water damage or mould growth and repairing the building components that lead to the water infiltration.

2.4.5 Potential ODS

Based on observations made during the site visit, ODSs are present in the accommodations cabin in the form of refrigerant R12 contained in a freezer located in Room 1. This refrigerant (R12) is a hydrochlorofluorocarbon (HCFC) and is regulated under the Federal Halocarbon Regulations.

Ozone depleting substances (ODS), if present, should be removed by an approved contractor prior to disposing of any cooling and/or refrigeration equipment from the building. The use, storage, operation, maintenance, decommissioning, and disposal of ODS containing equipment, in general, is regulated at both a Provincial and Federal level and must comply with the most recent NL Halocarbon Regulations and the Federal Halocarbon Regulations. The status of the potential ODS containing equipment should be confirmed through a mechanical contractor or consultant.

2.4.6 Potential Lead-Containing Materials/Equipment

Lead solder is likely to be present in plumbing and piping (e.g., cast iron and copper piping) in the accommodations cabin.

The disturbance, control or disposal of lead-containing material/equipment should be carried out in accordance with applicable criteria/regulations (refer to Section 1.6 of this report). The presence/absence of lead in these materials should be confirmed through a contractor or consultant prior to disturbance or disposal of these materials. Typically, these materials are sent to a metal recycling facility and not a landfill. Removal of lead-containing batteries should be completed in a manner that ensures structural integrity and no loss of fluid from the batteries. Should disposal be required, disposal of lead-containing batteries should be completed in accordance with hazardous waste procedures/guidelines (i.e., at an approved facility).

Sampling drinking water for the analysis of lead was not included in the scope of work for the Pre-Demolition HBMA.

2.4.7 Potential Mercury-Containing Materials/Equipment

Should disposal be required, mercury-containing equipment should be removed intact and returned to the manufacturer for recycling or disposed of at an approved hazardous waste disposal facility. The disturbance, control or disposal of mercury-containing materials/equipment should be carried out in accordance with applicable criteria/regulations (refer to Section 1.6 of this report). The presence/absence of mercury in these materials should be confirmed through a contractor or consultant prior to disturbance or disposal of these materials. Typically, these materials are sent to a recycling or hazardous waste disposal facility and not a landfill.

2.4.8 Potential PCB-Containing Materials/Equipment

According to the USEPA, PCBs may be present in caulking used in windows, door frames, masonry columns and other building materials in buildings built or renovated between 1950 and 1979. In addition, insulating fluids and cooling oils in electrical equipment (i.e., transformers, fluorescent light ballasts, capacitors, etc.) often contained PCBs until around 1980.

If PCB-containing materials or equipment are encountered in the future, and should disposal be required, the PCB content in the materials or equipment should be confirmed prior to disposal.

Any PCB-containing equipment (if present) should be handled, decontaminated, transported and disposed of as per current Federal and Provincial acts and regulations. Any PCB-containing equipment requiring removal from the building should be transported and disposed of at an approved hazardous waste disposal site, and not a landfill disposal site, by a registered hazardous waste transporter in accordance with applicable regulations.

2.4.9 Silica Containing Materials

Silica is expected to be present in concrete used in the construction of the foundation for the accommodations cabin. Silica may also be present in asphalt shingles used in the construction of accommodations cabin. Precautions should be taken to prevent/reduce exposure to silica dust during any disturbance/ demolition of silica-containing products, such as wetting the surface of the materials to prevent dust emissions, donning respiratory protection, and cleaning tools and clothing prior to exiting work areas. Activities involving the disturbance and/or demolition of silica-containing materials should be carried out in a manner that ensures silica dust concentrations do not exceed the applicable ACGIH TLV.

2.4.10 Potential Radioactive Materials

Smoke detectors were not observed during the Pre-Demolition HBMA site visit. Smoke detectors observed may contain very small amounts of radioactive material (i.e., Americium 241). Smoke alarms that use radioactive material incorporated in an ionization chamber are called "ion chamber smoke alarms".

2.4.11 Summary of Findings

Hazardous building materials identified at Camp #1 during this Pre-Demolition HBMA and disposal options, if required, are summarized in Table 2-4. Conclusions and recommendations made with respect to the potential and actual presence of hazardous building materials within the accommodations cabin and outhouse are provided in Section 2.4 and should be reviewed in conjunction with Table 2-5.

Table 2-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
ACMs	NL Asbestos Abatement Regulations (Reg. 111/98)	None identified Note that other possible hidden and inaccessible ACMs have the potential to be present within the accommodations building but were not identified during the Pre-Demolition HBMA site visit.	ACMs cannot be disposed of at a Construction & Demolition Site; however, these materials can be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility. The transportation and disposal of asbestos should be conducted in accordance with the NL Asbestos Abatement Regulations (Reg. 111/98) and with Standard Operating Procedures (SOPs) for disposal of ACMs at the landfill.
LBPs	Guidance Document for Leachable Toxic Waste and Disposal (GD-PPD-26.1) Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Surface Coating Materials Regulations (SOR/2016-193)	LBP (white on green) on plywood in Room 1 of accommodations cabin. LBP (red) on concrete on exterior of accommodations cabin. LBP (red over light green over white) on wood trim on exterior of accommodations cabin. LBP (grey) on plywood on interior of outhouse. LBP (red) on plywood on exterior of outhouse.	Paints that were analyzed for lead and contained <5,000 mg/kg lead, may be disposed of at a Regional Solid Waste Disposal Facility (landfill), provided permission is obtained from the landfill. Red paint on the door, window/door covers, window/door trims and plywood of outhouse exterior appear to be the same as the red paint sampled at Camp 2, where a concentration (10, 400 mg/kg) of lead was detected in paint sample PP-PS6 (red paint on the exterior door of the accommodations cabin) above the former Federal HPA criterion of 5,000 mg/kg. Therefore, lead leachate analysis is required to determine whether or not the painted surfaces of the door, window/door covers and window/door trims can be disposed of at a landfill. Alternatively, the metal door and associated trim may be sent to a metal recycling facility, provided the facility is informed about the concentration of lead in the paint. Given the nature of the paint on the exterior door (thin layer of paint on metal), it may not be possible to collect enough volume of paint for leachate analysis.
Potential UFFI	Federal HPA (R.S.1985, c. H-3)	None Identified	UFFI is permitted to be bagged and transported to an approved WDS and disposed in the special waste area of the site.

Table 2-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
Mould	Mould Guidelines for the Canadian Construction Industry, Canadian Construction Industry (CCI), 2004; Mould Abatement Guidelines, Environmental Abatement Council of Ontario (EACO), 2010	Some water staining noted on the ceiling in the accommodations trailer.	All mould impacted materials may be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility.
Potential ODS	Federal Halocarbon Regulations (SOR/2003-289)	R12 refrigerant in freezer in Room 1.	Materials containing ODS should be received by a contractor or facility that has the proper approvals to remove, handle and/or dispose of ODS. The remaining materials can be disposed of at a recycling facility, provided permission is obtained from the facility.
Potential Lead-Containing Materials/ Equipment	Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149) Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301)	Potential lead-containing solder (piping and plumbing)	Lead-containing materials and equipment can be disposed of at a metal recycling or hazardous waste disposal facility, in accordance with applicable regulations. The transportation and disposal of hazardous lead-containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.
Potential Mercury-Containing Materials/ Equipment	Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Products Containing Mercury Regulations (SOR/2014-254)	None identified	Mercury-containing materials and equipment can be disposed of at a recycling or hazardous waste disposal facility, in accordance with applicable regulations. The transportation and disposal of hazardous mercury-containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.

Table 2-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
Potential PCB-Containing Materials/ Equipment	Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149) Federal TDG Act (1992, c. 34) Guidance Document for Leachable Toxic Waste and Disposal (GD-PPD-26.1) Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301) PCB Regulations (SOR/2008-273) PCB Waste Export Regulations (SOR/97-109) Regulations Amending the PCB Regulations (SOR/2010-57)	None identified	Any PCB-containing materials and equipment should be handled, decontaminated, transported and disposed of as per current Federal and Provincial acts and regulations. Any PCB-containing materials and equipment requiring removal from the building should be transported and disposed of by a registered hazardous waste transporter in accordance with applicable regulations. The transportation and disposal of PCB containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.
Silica-Containing Materials	NL OHS Act (RSNL1990 Chapter O-3) NL OHS Regulations (5/12)	Asphalt shingles and concrete.	These materials can be disposed of at a Regional Solid Waste Disposal Facility (landfill).
Potential Radioactive Materials	Federal TDG Act (1992, c. 34)	None identified	Smoke detectors that contain low level radioactive materials must be transported, as per Federal TDG Regulations, to a licensed disposal facility.

APPENDIX A2

FIGURES

NOTES:

1. ALL DIMENSIONS ARE IN METERS.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF NEWFOUNDLAND LABRADOR HYDRO AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.

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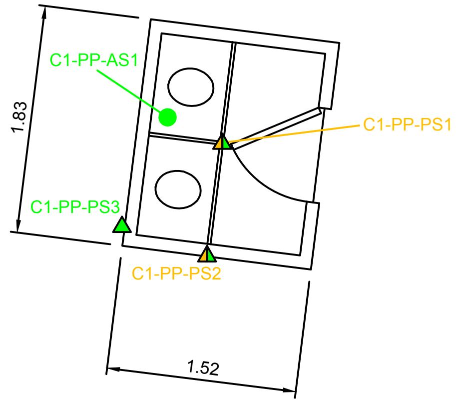
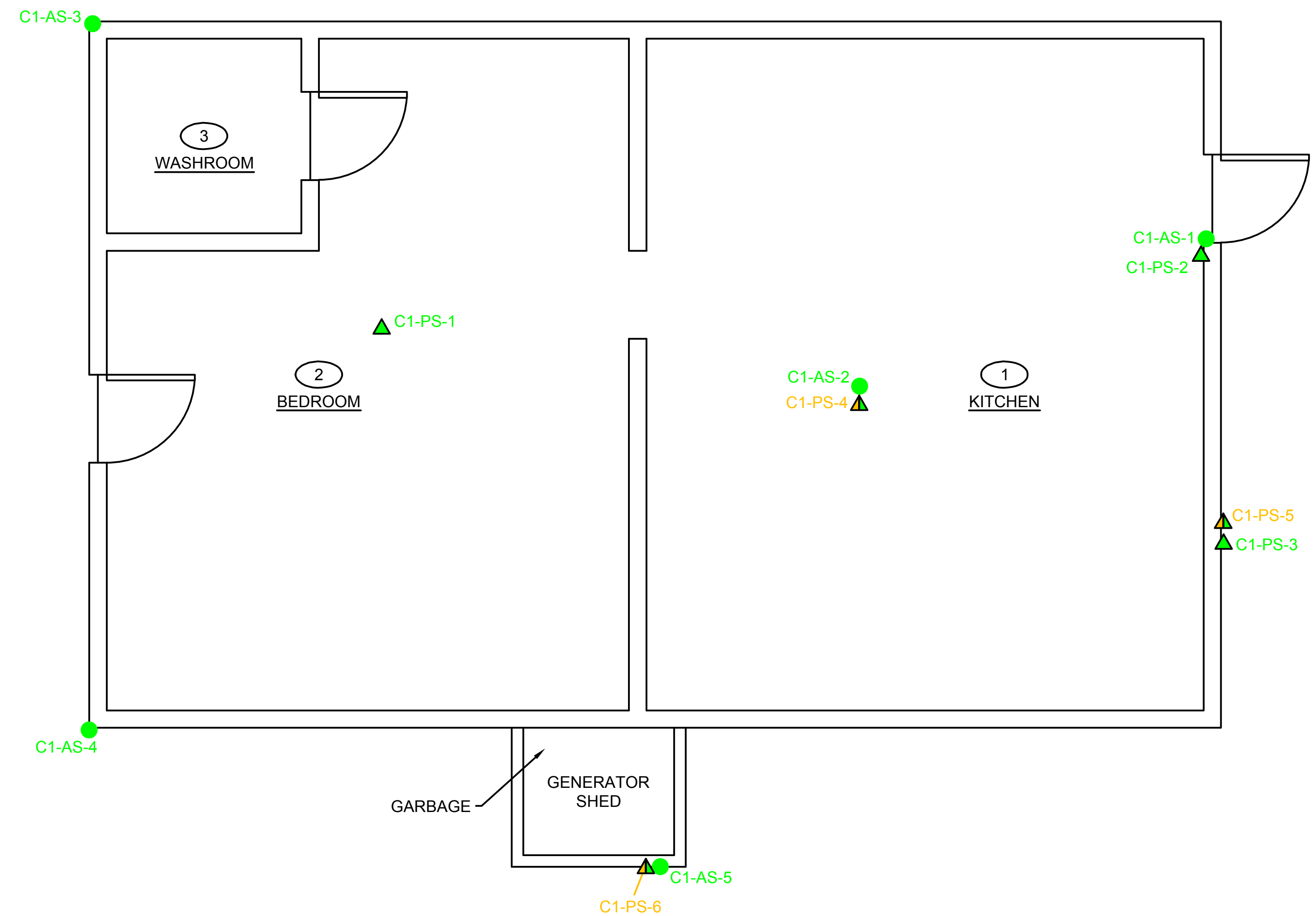
wood.

Drawn by:	T. Rideout
Approved by:	C. Finney
Scale:	As Shown
Project:	Pre-Demolition Hazardous Building Materials Assessment, Former Construction Camp Sites, Bay d'Espoir - Avalon Transmission Line, NL
Title:	Site Location Plan (Aerial) - Camp #1 Site
Date:	April 2019
Project No.	TF18104243.2000
Rev. No.	0
Figure No.	2.1



OUTHOUSE



ACCOMMODATIONS CABIN

LEGEND:

- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED
- PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY OR PCBs WHERE APPLICABLE
- PAINT SAMPLE LOCATION - NO CRITERIA EXCEEDANCES FOR LEAD OR MERCURY OR PCBs WHERE APPLICABLE

NOTES:

1. ALL DIMENSIONS ARE IN METERS.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
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wood.

Drawn by: T. Rideout

Approved by: C. Finney

Scale: As Shown

Project: Pre-Demolition Hazardous Building Materials Assessment, Former Construction Camp Sites, Bay d'Espoir - Avalon Transmission Line, NL

Title: Sample Location Plan - Camp #1 Site

Date: April 2019

Project No. TF18104243.2000

Rev. No. 0

Figure No. 2.2

APPENDIX B2

PHOTOGRAPHIC RECORD

Photo 1: View of the gravel access road at Camp #1 site, looking northeast.

Photo 2: View of transmission lines near Camp #1 site, looking east.

Photo 3: View of pond and transmission lines near Camp #1 site, looking south.

Photo 4: View of the gravel access road at Camp #1 site, looking southwest.

Photo 5: View of the accommodations cabin at Camp #1 site, looking northwest (Note: attached generator shed).

Photo 6: View of the accommodations cabin at Camp #1 site, looking northeast (Note: attached generator shed).

Photo 7: View of the kitchen (Room 1) inside the accommodations cabin at Camp #1.

Photo 8: View of the kitchen (Room 1) inside the accommodations cabin at Camp #1.

Photo 9: View of the kitchen (Room 1) inside the accommodations cabin at Camp #1.

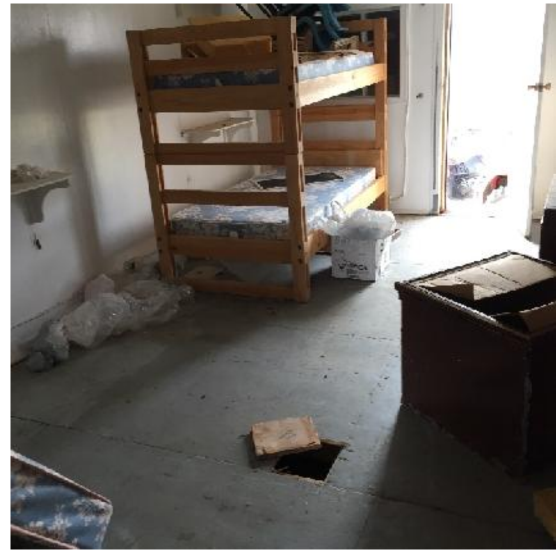

Photo 10: View of the bedroom (Room 2) inside the accommodations cabin at Camp #1.

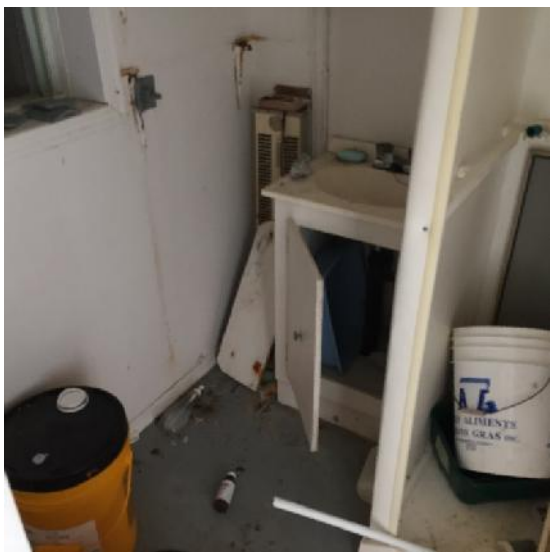

Photo 11: View of the washroom (Room 3) inside the accommodations cabin at Camp #1.

Photo 12: View of the attic inside the accommodations cabin at Camp #1 (Note: attic hatch in the ceiling of Room 1).


Photo 13: View of interior of the generator shed (attached to the accommodations cabin) at Camp #1.


Photo 14: View of cavity inspection location in anexterior wall of the accommodations cabin at Camp #1.


Photo 15: View of the outhouse at Camp #1, looking northeast.


Photo 16: View of interior of the outhouse at Camp #1.

Photo 17: View of bulk material sample C1-AS-1, black paper backing and pink fibreglass insulation, cabin interior.

Photo 18: View of bulk material sample C1-AS-2, black paper backing and yellow fibreglass insulation, cabin interior.

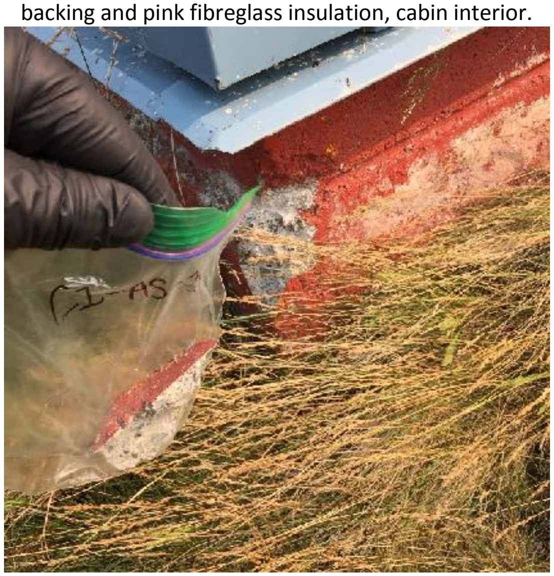

Photo 19: View of bulk material sample C1-AS-3, concrete, cabin exterior.

Photo 20: View of bulk material sample C1-AS-4, concrete block and mortar, cabin exterior.


Photo 21: View of bulk material sample C1-AS-5, black shingle and tar, cabin exterior.

Photo 22: View of bulk material sample C1-PP-AS1, black shingle and tar, outhouse exterior.


Photo 23: View of paint sample C1-PS1, floor, cabin interior.


Photo 24: View of paint sample C1-PS2, wall, cabin interior.

Photo 25: View of paint sample C1-PS3, wall, cabin exterior.

Photo 26: View of paint sample C1-PS4, ceiling, cabin interior.

Photo 27: View of paint sample C1-PS5, wall, cabin exterior.

Photo 28: View of paint sample C1-PS6, wall, cabin exterior.

Photo 29: View of paint sample C1-PP-PS1, wall, outhouse interior.

Photo 30: View of paint sample C1-PP-PS2, wall, outhouse exterior.

Photo 31: View of paint sample C1-PP-PS3, wall, outhouse exterior.


Photo 32: View of incandescent lighting inside accomodations cabin.

Photo 33: View of freezer inside the accomodations cabin, containing R12 refridgerant.

Photo 34: View of propane hot water tank inside the accomodations cabin.

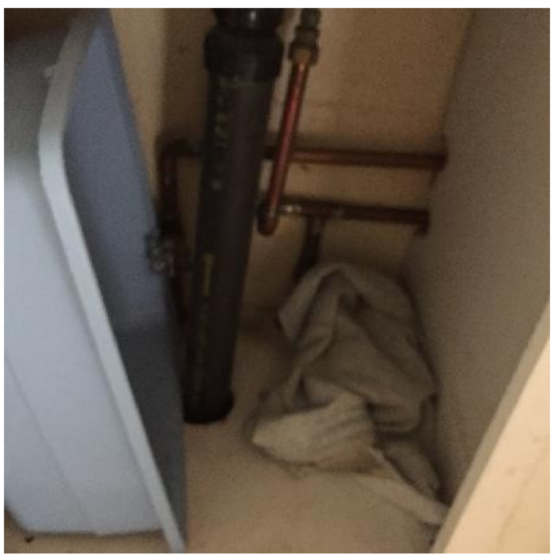

Photo 35: View of copper piping under the sink in kitchen of the accomodations cabin.

Photo 36: View of propane canisters located on the interior of the accomodations cabin.

Photo 37: View of kerosene located on the interior of the accomodations cabin.

APPENDIX C2

SAMPLE AND ANALYTICAL SUMMARY TABLES

Table C2-1: Bulk Sample Descriptions and Asbestos Analytical Results (Camp #1)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Sample Description	Layers Analyzed	Analytical Result
C1-AS-1	1	Kitchen	17	Interior Wall	Black paper backing over pink fibreglass insulation	Black paper and insulation	ND
C1-AS-2	1	Kitchen	18	Ceiling	Black paper backing over yellow fibreglass insulation	Black paper and insulation	ND
C1-AS-3	Exterior	Exterior - Cabin	19	Foundation	Concrete	concrete	ND
C1-AS-4	Exterior	Exterior - Cabin	20	Foundation	Concrete block and mortar	Concrete and mortar	ND
C1-AS-5	Exterior	Exterior - Cabin	21	Roof	Black shingle and black tar	Shingle and tar	ND
C1-PP-AS-1	Exterior	Exterior - Outhouse	22	Roof	Black shingle and black tar	Shingle and tar	ND

Notes:

Bold and underlined value indicates asbestos was detected but is below 1% by dry weight.

ACM: Asbestos containing material

Shaded value exceeds 1% asbestos by dry weight and is considered to be an ACM as outlined in the Newfoundland and Labrador Asbestos Abatement Regulations (Reg. 111/98).

Table C2-2: Paint Sample Descriptions and Lead Analytical Results (Camp #1)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Lead (mg/kg)
C1-PS1	2	Bedroom	23	Floor	Plywood	Grey on plywood (sample includes plywood)	5.0	60
C1-PS2	1	Kitchen	24	Wall	Plywood	White on plywood (sample includes loose paint and paint on wood)	5.0	57
C1-PS3	Exterior	Exterior - Cabin	25	Wall	Metal	Blue (sample includes metal siding)	5.0	36
C1-PS4	1	Kitchen	26	Ceiling	Plywood	White on green on plywood (sample includes loose paint and paint on wood)	5.0	**<u>194</u>**
C1-PS5	Exterior	Exterior - Cabin	27	Exterior	Concrete	Red on concrete (sample includes paint on concrete)	5.0	**<u>300</u>**
C1-PS6	Exterior	Exterior - Cabin	28	Wall	Wood Trim	Red over light green over white (sample includes paint on wood)	5.0	**<u>259</u>**
C1-PP-PS1	1	Outhouse	29	Wall	Plywood	Grey on plywood (sample includes plywood)	5.0	**<u>319</u>**
C1-PP-PS2	Exterior	Outhouse	30	Wall	Plywood	Red on plywood (sample includes plywood)	5.0	**<u>122</u>**
C1-PP-PS3	Exterior	Outhouse	31	Wall	Wood Trim	White on wood trim (sample includes wood)	5.0	40

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

HPA: Hazardous Products Act

<u>Bold and underlined value exceeds Federal HPA criterion (90 mg/kg).</u>

Shaded value exceeds former Federal HPA criterion (5,000 mg/kg).

Table C2-3: Paint Sample Descriptions and Mercury Analytical Results (Camp #1)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Mercury (mg/kg)
C1-PS1	2	Bedroom	23	Floor	Plywood	Grey on plywood (sample includes plywood)	0.05	0.11
C1-PS2	1	Kitchen	24	Wall	Plywood	White on plywood (sample includes loose paint and paint on wood)	0.05	1.04
C1-PS3	Exterior	Exterior - Cabin	25	Wall	Metal	Blue (sample includes metal siding)	0.05	<0.05
C1-PS4	1	Kitchen	26	Ceiling	Plywood	White on green on plywood (sample includes loose paint and paint on wood)	0.05	1.8
C1-PS5	Exterior	Exterior - Cabin	27	Exterior	Concrete	Red on concrete (sample includes paint on concrete)	0.05	<0.05
C1-PS6	Exterior	Exterior - Cabin	28	Wall	Wood Trim	Red over light green over white (sample includes paint on wood)	0.05	0.34
C1-PP-PS1	1	Outhouse	29	Wall	Plywood	Grey on plywood (sample includes plywood)	0.05	<0.05
C1-PP-PS2	Exterior	Outhouse	30	Wall	Plywood	Red on plywood (sample includes plywood)	0.05	<0.05
C1-PP-PS3	Exterior	Outhouse	31	Wall	Wood Trim	White on wood trim (sample includes wood)	0.05	<0.05

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

HPA: Hazardous Products Act

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guideline

Bold and underlined value exceeds Federal HPA criterion (10 mg/kg).

Shaded value exceeds CCME CSQG for an industrial site (50 mg/kg).

Table C2-4: Paint Sample Descriptions and PCB Analytical Results (Camp #1)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Total PCB (mg/kg)
C1-PS1	2	Bedroom	23	Floor	Plywood	Grey on plywood (sample includes plywood)	0.5	<0.5
C1-PS2	1	Kitchen	24	Wall	Plywood	White on plywood (sample includes loose paint and paint on wood)	0.5	<0.5
C1-PS3	Exterior	Exterior - Cabin	25	Wall	Metal	Blue (sample includes metal siding)	0.5	<0.5
C1-PS4	1	Kitchen	26	Ceiling	Plywood	White on green on plywood (sample includes loose paint and paint on wood)	0.5	<0.5
C1-PS5	Exterior	Exterior - Cabin	27	Exterior	Concrete	Red on concrete (sample includes paint on concrete)	0.5	<0.5
C1-PS6	Exterior	Exterior - Cabin	28	Wall	Wood Trim	Red over light green over white (sample includes paint on wood)	0.5	<0.5
C1-PP-PS1	1	Outhouse	29	Wall	Plywood	Grey on plywood (sample includes plywood)	0.5	<0.5
C1-PP-PS2	Exterior	Outhouse	30	Wall	Plywood	Red on plywood (sample includes plywood)	0.5	<0.5
C1-PP-PS3	Exterior	Outhouse	31	Wall	Wood Trim	White on wood trim (sample includes wood)	0.5	<0.5

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guideline

NL MAE: Newfoundland and Labrador Department of Municipal Affairs and Environment

TDG: Transportation of Dangerous Goods

#Sample collected by Hydro on May 5, 2018.

Bold and underlined value exceeds CCME CSQG for an industrial site (33 mg/kg).

Shaded value exceeds the criterion for PCB solid provided in the NL MAE Leachable Toxic Waste, Testing and Disposal Guidance Document and the TDG Regulations (50 mg/kg).

APPENDIX D2

ROOM-BY-ROOM INSPECTION SHEETS

Building	Room #	Floor #	Room Description	Dimensions
Camp 1	1	1	Kitchen	L = 16' W = 16' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Wood			
Walls (include window caulking)	Wood			
Ceiling	Wood			
Paint (and substrate)	Walls: White Ceiling: White/grey Floor: Grey Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	Pink Fibre Paper backing Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	4 incandescent			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted — Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	Copper water & propane lines.			
Mould / Water Staining	Area impacted Ceiling.			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials General Freezer GC-7L-1, R-12 Propane Hotwater tank, Model - RO30-32P			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
Camp 1	2	1	Bunk Room	L = 18' W = 16' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	WOOD			
Walls (include window caulking)	WOOD			
Ceiling	WOOD			
Paint (and substrate)	Walls: White Ceiling: white Floor: grey Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment				
Fluorescent Lighting	Ballast Manufacturer: Serial #:	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	incandescent			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	Copper pipes for propane			
Mould / Water Staining	Area impacted paint peeling.			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
Camp 1	3	1	Bathroom	L = 6' W = 6' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Wood			
Walls (include window caulking)	Wood			
Ceiling	Wood			
Paint (and substrate)	Walls: White Ceiling: White Floor: grey Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	incandescent			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	Copper pipes.			
Mould / Water Staining	Area impacted Paint peeling off ~~wall~~ ceiling			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext —			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials 20 L of kerosene.			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
Camp 1	Exterior	1	Exterior	L = 32' W = 18' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor				
Walls (include window caulking)	Concrete foundation Cinder block walls, blue metal siding,			
Ceiling	Shingles			
Paint (and substrate)	Walls: Blue on siding Ceiling: Red on small metal Floor: Security covers Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	Fire Door Manufacturer: — Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	—			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted — Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	—			
Mould / Water Staining	Area impacted —			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext —			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
Camp 1			Outhouse	L = 6' W = 5' H = 7'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Wood			
Walls (include window caulking)	Wood			
Ceiling	Wood Black Shingles			
Paint (and substrate)	Walls: Red (Ext) ~~Ceiling~~: Grey (Int) ~~Floor~~: Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	Fire Door Manufacturer: — Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)				
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	—			
Mould / Water Staining	Area impacted —			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext —			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1' x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

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APPENDICES

3.0 CAMP #2 SITE

Camp #2 is currently accessible by a gravel access road from the Burin Peninsula Highway (Route 210) in the community of Swift Current, NL (near Piper's Hole River) and is located approximately 23 km west of Camp #1 (refer to Figure 3.1, Appendix A3 and Photos 1 to 4, Appendix B3). Camp #2 site is comprised of an accommodation cabin and an outhouse.

3.1 BUILDING DESCRIPTIONS

The accommodations cabin is a one-storey, rectangular structure with a footprint area of approximately 61 m^2 (refer to Photos 5 to 12, Appendix B3). The floor plan of the cabin consists of a kitchen, a bedroom and a washroom, with an attached generator shed (refer to Figure 3.2, Appendix A3). The foundation of the accommodations cabin consists of concrete footings, with a concrete slab for the attached generator shed. The structure of the accommodations cabin and generator shed consists of concrete block and wood framing. The exterior walls on the accommodations cabin is finished with metal siding and the roof is finished with asphalt shingles. The window and exterior door openings on the accommodations cabin are barricaded with metal covers for security purposes. Interior wall and ceiling finishes in the accommodations cabin consists of painted plywood. Floors/floor finishes consist of plywood. Incandescent lighting was observed on the interior and exterior of the building. The accommodations cabin is not currently heated. The accommodations cabin consists of a kitchen (Room 1), bedroom (Room 2) and a washroom (Room 3).

The outhouse is a one-storey, rectangular structure with a former footprint area of approximately 3 m^2 (refer to Figure 3.2, Appendix A3). The outhouse structure has been damaged and removed from the former foundation and is currently tipped over onto the ground (refer to Photos 13 and 14, Appendix B3). The outhouse consists of wood framing, the exterior walls are finished with plywood and the roof is finished with asphalt shingles. Interior walls, floors and ceiling finishes in the outhouse consist of painted plywood. The outhouse does not contain any lighting or heating.

A description of accommodations cabin is outlined in Table 3-1 and a description of the outhouse is outlined in Table 3-2. Photographs of the buildings are provided in Appendix B3.

Table 3-1: Site Building Description – Accommodations Cabin

Building Name	Accommodations cabin	Photo No. (Appendix B3)
Date of Construction	Approximately late 1960's/early 1970's (exact date not known)	-
Date of Renovations	Unknown	-
No. of Stories	One	5 to 7
Crawl Space (Yes/No)	No	-
Attic (Yes/No)	Yes	-
Type of Structure	Concrete blocks and Wood Frame	5 to 7 and 15
Type of Foundation	Wood Beams on concrete footing	7 and 16
Exterior	Metal Siding	5 to 7
Window/Door Frames	Painted Metal and Wood	5 to 7 and 12
Exterior Doors	Painted Metal	5 to 7
Roofing Materials	Asphalt Shingles	19

Table 3-1: Site Building Description – Accommodations Cabin

Building Name	Accommodations cabin	Photo No. (Appendix B3)
Interior Walls Finishes	Painted Plywood	8 to 12
Interior Ceiling Finishes	Plywood	8, 10 and 11
Floor Finishes	Plywood	33
Interior Doors	NA	-
Interior Lighting	Incandescent and propane lantern	8, 10 and 11
Exterior Lighting	Incandescent	5 and 6
Heating	Propane Stove	36

Table 3-2: Site Building Description – Outhouse

Building Name	Outhouse	Photo No. (Appendix B3)
Date of Construction	Approximately late 1960's/early 1970's (exact date not known)	-
Date of Renovations	Unknown	-
No. of Stories	One	13
Crawl Space (Yes/No)	No	-
Attic (Yes/No)	No	-
Type of Structure	Wood Frame	13
Type of Foundation	Wood Frame	14
Exterior	Plywood	13
Window/Door Frames	NA	-
Exterior Doors	NA	-
Roofing Materials	Asphalt Shingles	13
Interior Walls Finishes	Painted Plywood	13
Interior Ceiling Finishes	Plywood	-
Floor Finishes	NA	-
Interior Doors	NA	-
Interior Lighting	NA	-
Exterior Lighting	NA	-
Heating	NA	-

3.2 ROOM DESIGNATION

Each room at Camp #2 was assigned a specific room name. The designated room names are presented in Table 3-3 and graphically illustrated on the sample location plan (refer to Figure 3.2, Appendix A3).

Table 3-3: Assigned Rooms

Level No.	Room Name – Accommodations Cabin	Room Number
1	Kitchen	Room 1
1	Bedroom	Room 2
1	Bathroom	Room 3
1	Outhouse	Outhouse

3.3 FINDINGS

The findings documented in this section are based on observations made by Wood personnel at the time of the site visit on August 13, 2018 and the results of laboratory analyses of samples collected from Camp #2. During the Pre-Demolition HBMA site visit, Wood personnel were accompanied by a representative of Hydro (Mr. Wayne Lidster). Copies of room-by-room inspection sheets for the accommodations building and outhouse are provided in Appendix D3. Photos of the samples collected from the accommodations building and outhouse during the site visit are provided in Appendix B3.

3.3.1 Asbestos-Containing Materials (ACMs)

There are over 3,000 ACMs that are commercially available, which can be divided into two broad categories: friable and non-friable. ACMs were discontinued from use in Canada in the late 1970s/early 1980s, although non-friable asbestos is still found in many more recent buildings.

During the Pre-Demolition HBMA site visit, a total of five (5) building material samples (PP-AS-1 to PP-AS-5) were collected from the accommodations cabin and one (1) building material sample (PP-PP-AS1) was collected from the outhouse (refer to Photos 13 to 18, Appendix B2) and analyzed for asbestos content. Bulk sample descriptions and asbestos analytical results are summarized in Table C3-1, Appendix C3. Sample locations and analytical results are graphically illustrated in Figure 3.2, Appendix A3.

3.3.1.1 Friable Materials

Friable ACMs are defined as materials that can be crumbled, pulverized and reduced to powder when dry using hand pressure. Typical friable materials include acoustical or decorative spray applications, fireproofing and thermal insulation.

3.3.1.1.1 Spray-Applied Fireproofing, Insulation and Texture Finishes

There were no spray-applied fireproofing, insulation or texture finishes observed in the accommodations cabin or outhouse during the Pre-Demolition HBMA site visit; therefore, no samples of these materials were collected for analysis.

3.3.1.1.2 Building and Thermal System Insulation

During the Pre-Demolition HBMA site visit, fiberglass insulation was observed in the attic and walls of the accommodations cabin (refer to Photos 17 and 18, Appendix B3). Thermal system insulation was not observed at Camp #2.

Two (2) samples of building insulation (PP-AS-1 and PP-AS-2) were collected from the wall of the accommodations cabin and analyzed for asbestos content. Sample PP-AS-1 was collected from the interior wall and consisted of black paper backing and pink fiberglass insulation. Sample PP-AS-2 was collected from the interior wall and consisted of tar paper. Asbestos was not detected in the insulation samples.

3.3.1.2 Non-Friable and Potentially Friable Materials

Non-friable ACMs are hard or manufactured products such as floor tiles, fire blankets, pre-formed manufactured cementitious insulation and wallboards, pipes, and siding, wherein the asbestos fibres are bound to the substrate. Note that although a product may be considered non-friable when new, the product may release fine dust when disturbed (e.g., deterioration, removal, renovations) and the free dust is considered friable.

3.3.1.2.1 Ceiling Tile

There were no ceiling tiles observed at Camp #2 during the Pre-Demolition HBMA site visit; therefore, no samples of ceiling tile were collected for analysis.

3.3.1.2.2 Drywall Joint Compound

There was no drywall joint compound observed at Camp #2 during the Pre-Demolition HBMA site visit; therefore, no samples of drywall joint compound were collected for analysis.

3.3.1.2.3 Vinyl Flooring Products and Mastics

There was no vinyl flooring or products observed at Camp #2 during the Pre-Demolition HBMA site visit; therefore, no samples of vinyl flooring or products were collected for analysis.

3.3.1.2.4 Baseboard, Carpet and Stair Tread Adhesives/Mastics

There were no baseboard, carpet or stair tread adhesives/mastics observed at Camp #2 during the Pre-Demolition HBMA site visit; therefore, no samples of these types of adhesives/mastics were collected for analysis.

3.3.1.2.5 Roofing Products

During the Pre-Demolition HBMA site visit, one (1) sample of black asphalt shingle (PP-AS-3) was collected from the roof of the accommodations cabin and one (1) sample of black asphalt shingle and tar (PP-PP-AS-1) was collected from the roof of the outhouse and analyzed for asbestos content (refer to Photos 19 and 22, Appendix B3). Asbestos was detected in PP-AS-3 containing 2.2 % chrysotile asbestos and in PP-PP-AS1 containing 1.1% chrysotile asbestos. According to the NL asbestos abatement regulations (Reg. 111/98), both materials are considered asbestos-containing materials.

It is important to note that, due to height constraints, no samples of building materials around roof penetrations (e.g., caulking or sealants around vents or electrical conduit) or roof seams were collected for analysis (refer to Photo 7, Appendix B3).

3.3.1.2.6 Caulking/Sealant

There were no caulking/sealants observed at Camp #2 during the Pre-Demolition HBMA site visit; therefore, no samples of caulking/sealants were collected for analysis.

3.3.1.2.7 Mortar, Grout and Other Cementitious Materials

During the Pre-Demolition HBMA site visit, one (1) sample of concrete (PP-AS-4) was collected from the concrete foundation footing of the accommodation cabin and one (1) sample of concrete block and mortar (PP-AS-5) was collected from the exterior wall of the accommodation cabin and analyzed for asbestos content (refer to Photos 20 and 21, Appendix B3). Asbestos was not detected in the concrete or the concrete block and mortar samples analyzed.

3.3.1.2.8 Fire-Rated Doors

Fire-rated doors and door frames were not observed during the Pre-Demolition HBMA site visit.

3.3.1.2.9 Other Potential ACMs

Other potential ACMs were observed (or suspected to be present) and were not sampled due to the nature of the materials and/or hazards associated with sampling these materials. These materials included, but are not limited to, electrical and mechanical components and insulators such as wiring and gaskets, heat shields inside incandescent light fixtures, and caulking or sealants around or along roof seams, vent pipes, electrical conduits or other penetrations (refer to Photos 7, 8, 10, 11, 33 and 34, Appendix B2).

Other possible hidden and inaccessible ACMs have the potential to be present within the accommodations cabin but were not identified during the Pre-Demolition HBMA site visit. These possible ACMs could include concrete leveling compound (existing concrete foundation), possible fireproofing materials in the wall or ceiling cavities, piping/pipe joint sealants/gaskets and packing associated with cast iron pipe joints, fire rated structures or building materials, vapour barriers in walls, undercoatings on sinks, interior heat resistant components or gaskets inside appliances, concrete lining the interior of hot water tanks, and underground infrastructure or piping.

3.3.2 Paint Additives

Lead compounds have been used in paint as pigment and durability additives since the early 1800s. Mercury compounds have been used in paint as anti-microbial additives up until the 1990s. PCBs have been used in paint as plasticizers and corrosion resistance additives from the 1950s to the 1970s.

During the Pre-Demolition HBMA site visit, six (6) samples (PP-PS1 to PP-PS6) were collected from painted surfaces of the accommodations cabin and one (1) sample (PP-PP-PS1) was collected from the painted surfaces of the outhouse and analyzed for lead, mercury and PCB content (refer to Photos 23 to 29, Appendix B3). Paint sample descriptions and lead, mercury and PCBs analytical results are summarized in Tables C3-2 to C3-4, Appendix C3. Sample locations and analytical results are graphically illustrated in Figure 3.1, Appendix A3.

3.3.2.1 Lead in Paint

The concentrations of lead in the six (6) samples (PP-PS1 to PP-PS6) collected from painted surfaces of the accommodations cabin and one (1) sample (PP-PP-PS1) collected from the outhouse ranged from non-detect (<5.0 mg/kg) to 10,400 mg/kg (refer to Table C3-2, Appendix C3). One (1) paint sample (PP-PS6), red paint collected from the exterior door of the accommodations cabin, contained lead at a concentration (10, 400 mg/kg) above both the Federal HPA criterion of 90 mg/kg and the former Federal HPA criterion of 5,000 mg/kg (refer to Photo 28, Appendix B3). Two (2) paint samples (PP-PS1 and PP-PS3) contained lead at concentrations above the Federal HPA criterion of 90 mg/kg and below the former Federal HPA criterion of 5,000 mg/kg (refer to Photos 23 and 25, Appendix B2). The concentrations of lead in the other four (4) samples were below the Federal HPA criterion (90 mg/kg).

There was insufficient sample available to conduct a lead leachate analysis for PP-PS6.

3.3.2.2 Mercury in Paint

The concentrations of mercury in the six (6) samples (PP-PS1 to PP-PS6) collected from painted surfaces of the accommodations cabin and one (1) sample (PP-PP-PS1) collected from the outhouse ranged from non-detect (<0.05 mg/kg) to 2.35 mg/kg and therefore, were below the Federal HPA criterion (10 mg/kg) (refer to Table C3-3, Appendix C3).

3.3.2.3 PCBs in Paint

PCBs were not detected in any of the paint samples analyzed (<0.5 mg/kg), and therefore, were below the CCME CSQG for PCBs in soil at an industrial site (33 mg/kg) and the applicable criterion for PCB solid (50 mg/kg) (refer to Table C3-4, Appendix C3).

3.3.3 Urea Formaldehyde Foam Insulation (UFFI)

Visual indicators suggesting the potential presence of UFFI were not observed at Camp #2. The nature of the insulation in the walls and ceilings throughout the accommodations cabin consisted of fiberglass insulation (refer to Photos 17 and 18, Appendix B3).

Since the original date of construction of Camp #2 (assumed construction commenced the same timeframe as the original transmission line, late 1960's/early 1970's) is unknown, it is possible that UFFI may be present.

In the event that UFFI is present, the CMHC state that "tests show that UFFI is not a source of over-exposure to formaldehyde after the initial curing and release of excess gas". The general view based on studies concerning formaldehyde emissions is that as a product ages, the amount of formaldehyde off-gassed from the product decreases over time. The amount of formaldehyde released is reportedly dependent on temperature, humidity and whether or not the product is exposed to excessive moisture or water.

3.3.4 Suspected Visible Mould Growth (SVG)

Wood inspected the interior areas of the accommodations cabin and outhouse for visual or olfactory evidence of suspected mould. SVG was noted on much of the ceiling and wall surfaces inside the accommodations cabin during the Pre-Demolition HBMA site visit. A sample (PP-MS-1) of the suspect mould material was collected from Room 1 for laboratory analysis to confirm the presence/absence of mould (refer to Figure 3.2, Appendix A3 and refer to Photo 30, Appendix B3).

The results of mould analysis determined that bulk sample PP-MS1 contained Cladosporium mould with abundant growth (refer to Table C3-6, Appendix C3).

3.3.5 Mercury-Containing Thermostats

Thermostats were not identified inside the accommodations cabin at Camp #2 during the Pre-Demolition HBMA site visit.

3.3.6 PCB-Containing Light Ballasts

Incandescent light fixtures were observed on the exterior and interior of the accommodations cabin and propane lanterns in Room 2 during the Pre-Demolition HBMA site visit (refer to Photos 5, 10, 11, and 35, Appendix B3). No fluorescent lights were observed.

3.3.7 Potential Sources of ODS and Halocarbons

During the Pre-Demolition HBMA site visit, a potential source of ODS was identified within the accommodations cabin. Results of the ODS inspection is summarized in Table 3-4.

Table 3-4: Potential Sources of ODSs

Item	Manufacturer	Model (Serial No.)	Location Observed	Photo No. (Appendix B2)	Refrigerant	Potential ODS
Freezer	Kelvinator	CA08-4D	Room 1	31	R12	Yes
Refrigerator	Danby	DPR-2260-1	Room 1	32	NA	No

Based on observations made during the site visit, ODSs are present in the accommodations cabin in the form of refrigerant R12 contained within the freezer located in Room 1 (refer to Photo 31, Appendix B3). This refrigerant (R12) is a hydrochlorofluorocarbon (HCFC) and is regulated under the Federal Halocarbon Regulations.

Fire extinguishers were not observed at Camp #2 during the Pre-Demolition HBMA site visit.

3.3.8 Other Potentially Hazardous Building Materials or Substances

Other potentially hazardous building materials or substances identified during this assessment are presented in the following sections.

3.3.8.1 Lead-Containing Materials and Equipment

Lead is typically associated with plumbing solder and older pipe materials (e.g., cast iron pipe joints), as well as products such as radiation protective shielding and lead-acid batteries. Lead can also be present in steel and iron primer, industrial electrical jacketing, roof flashing and tank linings.

Since the actual date that Camp #2 was constructed is unknown (assumed to be late 1960's/early 1970's), it is possible that lead solder is present in plumbing and piping (i.e., cast iron and copper piping) in the accommodations cabin, as lead solder for use in potable water distribution pipes was not banned until the late 1980s (refer to Photos 33 and 34, Appendix B2).

3.3.8.2 Mercury-Containing Materials and Equipment

The light tubes and bulbs in HID and fluorescent light fixtures often contain limited quantities of mercury in a powder or vapour form. Incandescent light fixtures and propane lanterns were observed on the exterior and the interior of the accommodations cabin during the Pre-Demolition HBMA site visit (Photos 5, 10, 11, and 35, Appendix B2). No fluorescent lights were observed.

3.3.8.3 PCB-Containing Materials and Equipment

According to the USEPA, PCBs may be present in caulking used in windows, door frames, masonry columns and other building materials in buildings built or renovated between 1950 and 1979. In addition, and as mentioned previously, insulating fluids and cooling oils in electrical equipment (i.e., transformers, fluorescent light ballasts, capacitors, etc.) often contained PCBs until around 1980.

3.3.8.4 Treated Wood Chemicals

The chemicals that are used to protect and preserve wood products from insect attack and fungal decay may pose risks to human health and the environment. Depending on the wood treatment used, treated wood may be considered a hazardous waste upon disposal. The NL Department of Environment and Conservation (currently the NL MAE), 2015 Guidance Document for Treated Wood Waste Disposal (GD-PPD-075.1) provides landfill disposal standards for “pressure treated” inorganic preservatives (i.e., arsenic and chromium) and creosote (i.e., total cresol and benzo(a)pyrene) and chlorophenolic (i.e., pentachlorophenol) formulations used to preserve wood. These landfill disposal standards for treated wood waste (TWW) are used to assess the results of leachability testing to determine disposal options for treated wood to be removed during renovation or demolition activities.

During the Pre-Demolition HBMA site visit, suspected “creosote treated” inorganic (i.e., chromated copper arsenate (CCA)) preservatives appear to have been applied to wood that was used as the foundation of the outhouse. One (1) sample of treated wood (PP-TW1) was collected from the foundation and analyzed for leachable benzo(a)pyrene and leachable cresols to determine whether or not the treated wood would be considered hazardous waste upon removal from the site, if required. The bulk sample description and leachable treated wood parameter analytical results are summarized in Table C3-5, Appendix C3. The sample location and analytical results are graphically illustrated in Figure 3.2, Appendix A3.

Leachable benzo(a)pyrene and leachable cresols were not detected above the RDLs in the treated wood sample PP-TW1; therefore, the concentrations of these leachable treated wood parameters were below the TCLP landfill disposal standards for leachable benzo(a)pyrene (1 µg/L) and leachable cresols (20,000 µg/L) provided in the NL Department of Environment and Conservation (currently the NL MAE), 2015 Guidance Document for Treated Wood Waste Disposal (GD-PPD-075.1).

3.3.8.5 Silica

According to the CPWR – The Center for Construction Research and Training, many common construction materials contain silica including, asphalt, brick, cement, concrete, drywall, grout, mortar, stone, sand and tile. The dust created by cutting, grinding, drilling or otherwise disturbing these materials can contain crystalline silica particles.

Based on the Pre-Demolition HBMA site visit, silica is expected to be present in concrete used in the construction of the foundation for the accommodations cabin. Silica may also be present in the asphalt shingles used in the construction of the accommodations cabin.

3.3.8.6 Radioactive Materials

A smoke detector was observed in Room 1 of the accommodations cabin during the Pre-Demolition HBMA site visit (refer to Photo 35, Appendix B3). Smoke detectors observed may contain very small amounts of radioactive material (i.e., Americium 241). Smoke alarms that use radioactive material incorporated in an ionization chamber are called "ion chamber smoke alarms".

3.4 CONCLUSIONS AND RECOMMENDATIONS

Based on observations made and information gathered during the Pre-Demolition HBMA, the following conclusions and recommendations are made with respect to the potential and actual presence of hazardous building materials at Camp #2.

3.4.1 ACMs

Results of the asbestos sampling and analytical program revealed building materials containing greater than 1% asbestos by dry weight, which are considered to be ACMs, are present in the form of non-friable black asphalt shingles on the roof of the accommodations cabin and non-friable black asphalt shingles and tar on the roof of the outhouse.

The asbestos-containing black asphalt shingles visible on the roof of the accommodations cabin (covering an area of approximately 55 m^2), as observed from the ground surface, appeared to be generally intact and in fair condition. The asbestos-containing black shingle and tar visible on the on the roof of the outhouse (covering an area of approximately 3 m^2) also appeared to be generally intact and in fair condition.

Other potential ACMs were observed (or suspected to be present) and were not sampled due to the nature of the materials and/or hazards associated with sampling these materials. These materials included, but are not limited to:

- Electrical and mechanical components and insulators such as wiring and gaskets.
- Heat shields inside incandescent/ propane light fixtures.
- Caulking or sealants around or along roof seams, vent pipes, electrical conduits or other penetrations.

Other possible hidden and inaccessible ACMs have the potential to be present within the buildings at Camp #2 but were not identified during the Pre-Demolition HBMA site visit. These possible ACMs could include concrete leveling compound (existing concrete foundation), possible fireproofing materials in the wall or ceiling cavities, piping/pipe joint sealants/gaskets and packing associated with cast iron pipe joints, fire rated structures or building materials, vapour barriers in walls, undercoatings on sinks, interior heat resistant components, concrete lining the interior of hot water tanks, and underground infrastructure or piping.

If other potential ACMs that were not sampled as part of this assessment are encountered in the future, these materials should be treated as ACMs or samples should be collected and tested to verify asbestos content. This should be done as soon as these materials are encountered and before these materials are disturbed. This includes materials that are currently concealed by walls and ceiling systems.

In accordance with the NL Asbestos Abatement Regulations (Reg. 111/98), which provide the legislative requirements for safe handling of ACMs in workplaces in the Province of NL, the following is recommended:

- Safe work procedures shall be established.
- All buildings constructed during the period when asbestos was readily used in construction (generally prior to the early 1980s) or any buildings that are suspected as having asbestos must have a written assessment and management plan (where applicable) for potential ACMs.
- Materials suspected of containing asbestos are required to be handled as ACMs, until analysis by a competent laboratory determines whether or not it does contain asbestos.
- Prior to general demolition, all ACMs must be safely removed from the building and disposed of in accordance with appropriate environmental guidelines by an asbestos abatement contractor registered with the Occupational Health and Safety (OHS) Division of Service NL.
- Most work involving ACMs (i.e., disturbance, removal and encapsulation) must be conducted by a contractor registered with the OHS Division of Service NL.
- ACMs in good condition should be inspected on an annual basis.
- ACMs in poor condition should be removed from the building and transported off-site for proper disposal.
- Workers should don adequate respiratory protection and personal protective equipment (PPE) when working with ACMs.

Prior to the removal and/or abatement of any identified ACMs (or any other hazardous building materials), an abatement plan including technical specifications should be designed, prepared and supervised by a qualified professional and should be undertaken by qualified trades, in accordance with applicable standards. Activities involving the disturbance and/or removal of ACMs should be carried out in a manner that ensures asbestos fiber concentrations do not exceed the applicable American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV). ACMs can be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility.

3.4.2 Lead, Mercury and PCBs in Paint

Results of the paint sampling and analytical program revealed the following:

- **<u>Lead and Leachable Lead in Paint</u>**
  - Concentrations of lead in the six (6) samples (PP-PS1 to PP-PS6) collected from painted surfaces of the accommodations cabin and one (1) sample (PP-PP-PS1) collected from the outhouse ranged from non-detect (<15.0 mg/kg) to 10,400 mg/kg.
  - One paint sample (PP-PS6) contained lead at a concentration (10, 400 mg/kg) above the Federal HPA criterion of 90 mg/kg and the former Federal HPA criterion of 5,000 mg/kg. There was

insufficient sample available to conduct a lead leachate analysis to determine disposal option for this paint (red paint on exterior door of the accommodations building).

- Two paint samples (PP-PS1 and PP-PS3) contained lead at concentrations above the Federal HPA criterion of 90 mg/kg and below the former Federal HPA criterion of 5,000 mg/kg; and therefore, these paints are considered to be LBPs but are not likely to be leachable for lead.
- The concentrations of lead in the other four (4) paint samples were below the Federal HPA criterion (90 mg/kg); and therefore, these paints are not considered to be LBPs and are not likely to be leachable for lead.

- **Mercury and Leachable Mercury in Paint**
  - The concentrations of mercury in six (6) samples (PP-PS1 to PP-PS6) collected from painted surfaces of the accommodations cabin and one (1) sample (PP-PP-PS1) collected from the outhouse ranged from non-detect (<0.05 mg/kg) to 2.35 mg/kg; below the Federal HPA criterion (10 mg/kg). These paints are not considered to be MBPs and are not likely to be leachable for mercury.

- **PCBs in Paint**
  - PCBs were not detected in the six (6) samples (PP-PS1 to PP-PS6) collected from painted surfaces of the accommodations cabin and one (1) sample (PP-PP-PS1) collected from the outhouse were non-detect for PCBs (<0.5 mg/kg) and contained PCBs at concentrations below the CCME CSQG for PCBs in soil at an industrial site (33 mg/kg) and the applicable criterion for PCB solid (50 mg/kg).

Given that the concentration of lead detected in paint sample PP-PS6 (red paint on the exterior door (also potentially on metal window/door covers and window/door trims) of the accommodations cabin) contains lead at a concentration (10, 400 mg/kg) above the former Federal HPA criterion of 5,000 mg/kg, lead leachate analysis is required to determine whether or not the painted surfaces of painted surfaces of the door, window/door covers and window/door trims can be disposed of at a landfill. Alternatively, the metal door and associated trim may be sent to a metal recycling facility, provided the facility is informed about the concentration of lead in the paint. Given the nature of the paint on the exterior door (thin layer of paint on metal), it may not be possible to collect enough volume of paint for leachate analysis.

Based on the paint sample analytical results, the other paint samples collected from accommodations cabin and outhouse are not likely to be leachable for lead, mercury and PCBs; and therefore, should disposal be required (e.g., renovation or demolition activities), the paints analyzed for lead and mercury content may be disposed of at an approved landfill facility, pending landfill and Provincial regulatory approval.

There are potential adverse human health impacts associated with disturbing (e.g., scraping, sanding, burning, etc.) lead-containing paint finishes, due to the potential for dust, mist or fumes to be released and inhaled or ingested by workers. As a precautionary measure, Wood recommends handling these paint finishes, as follows:

- In areas of minor peeling or flaking, the paint should be removed using wet scraping techniques.
- In areas of extensive peeling and flaking, the paint should be removed and more extensive particulate control measures may be required.
- In areas where lead-containing paint finishes are present and in poor condition, an experienced contractor should be utilized for renovating, decommissioning or demolition activities.

- Prior to renovation, dismantling or demolition activities, all areas of extensive peeling and flaking of lead-containing paint finishes and paint debris/dust should be removed and/or remediated to ensure that building occupants/workers are protected from associated dust/particulate.
- Procedures should be implemented to ensure that workers and anyone present in and around areas being renovated, dismantled or demolished are protected. The contractor should also ensure that dust generation and migration is minimized.
- Precautions should be taken to prevent/reduce exposure to paint dust during any disturbance of lead-containing paint finishes, such as wetting the surface of the materials to prevent dust emissions, donning respiratory protection, and cleaning tools and clothing prior to exiting work areas.
- Where possible, lead-containing paint finishes should be removed from metal surfaces prior to welding or cutting these materials.

If potential lead, mercury or PCB containing paint finishes that were not sampled during this assessment are encountered in future, prior to any disturbance or removal, samples should be obtained and tested to verify concentrations of lead, mercury and PCBs. This includes materials that are currently concealed by walls and ceiling systems.

Any disturbance or removal of lead, mercury or PCB-containing paint finishes that may generate dust or respirable aerosols must conform to the Federal and Provincial OHS Regulations. All work should be carried out by individuals wearing proper PPE. The type of respiratory protection and control measures to be implemented during the removal of these types of paint finishes should be determined by a qualified person and based on the risk level of a particular work activity (i.e., scraping, sanding, abrasive blasting, etc.). Activities involving the disturbance and/or removal of lead, mercury or PCB-containing paint finishes should be carried out in a manner that ensures paint dust concentrations do not exceed the applicable ACGIH TLVs.

3.4.3 Potential UFFI

The sale and installation of UFFI was banned in 1980; since the original date of construction is unknown, it is possible that UFFI may be present in the building. Visual indicators suggesting the potential presence of UFFI were not observed in the building. It can be inferred that any UFFI present within the building is unlikely to affect the indoor air quality due to the amount of time that has passed since the insulation was likely installed (i.e., pre-1980) along with the likelihood that formaldehyde has off-gassed over this period of time. It should be noted that, the presence and concentration of formaldehyde cannot be determined or quantified without conducting site-specific testing for formaldehyde.

Although there is currently no Provincial regulations requiring that the removal of UFFI be conducted by a licensed/registered abatement contractor, based on discussions with representatives of the OHS Division of Service NL, it is strongly recommended that this material be abated using similar methods as required for asbestos abatement and that the insulation must be removed in a dry condition. Based on discussions with representatives of the NL MAE, for the purposes of disposal of UFFI, this material is permitted to be bagged and transported to an approved WDS and disposed in the special waste area (unlined area) of the site.

3.4.4 Mould

SVG was noted on much of the ceiling and wall surfaces inside the accommodations cabin during the Pre-Demolition HBMA site visit. The results of mould analysis determined that bulk sample PP-MS1 contained Cladosporium mould with abundant growth.

Mould spores are present in all indoor environments and cannot be completely eliminated. Cellulose based building materials provide a nutrient base for many mould species; however, mould cannot grow unless an adequate amount of excess moisture is present. The most effective way to prevent mould growth within a building is the prompt removal of any porous building materials with water damage or mould growth and repairing the building components that lead to the water infiltration.

3.4.5 Potential ODS

Based on observations made during the site visit, ODSs are present in the accommodations cabin in the form of refrigerant R12 contained in a freezer located in Room 1. This refrigerant (R12) is a hydrochlorofluorocarbon (HCFC) and is regulated under the Federal Halocarbon Regulations.

Ozone depleting substances (ODS), if present, should be removed by an approved contractor prior to disposing of any cooling and/or refrigeration equipment from the building. The use, storage, operation, maintenance, decommissioning, and disposal of ODS containing equipment, in general, is regulated at both a Provincial and Federal level and must comply with the most recent NL Halocarbon Regulations and the Federal Halocarbon Regulations. The status of the potential ODS containing equipment should be confirmed through a mechanical contractor or consultant.

3.4.6 Potential Lead-Containing Materials/Equipment

Lead solder is likely to be present in plumbing and piping (e.g., cast iron and copper piping) in the accommodations cabin.

The disturbance, control or disposal of lead-containing material/equipment should be carried out in accordance with applicable criteria/regulations (refer to Section 1.6 of this report). The presence/absence of lead in these materials should be confirmed through a contractor or consultant prior to disturbance or disposal of these materials. Typically, these materials are sent to a metal recycling facility and not a landfill. Removal of lead-containing batteries should be completed in a manner that ensures structural integrity and no loss of fluid from the batteries. Should disposal be required, disposal of lead-containing batteries should be completed in accordance with hazardous waste procedures/guidelines (i.e., at an approved facility).

Sampling drinking water for the analysis of lead was not included in the scope of work for the Pre-Demolition HBMA.

3.4.7 Potential Mercury-Containing Materials/Equipment

Should disposal be required, mercury-containing equipment should be removed intact and returned to the manufacturer for recycling, or disposed of at an approved hazardous waste disposal facility. The disturbance, control or disposal of mercury-containing materials/equipment should be carried out in accordance with applicable criteria/regulations (refer to Section 1.5 of this report). The presence/absence of mercury in these materials should be confirmed through a contractor or consultant prior to disturbance or disposal of these materials. Typically, these materials are sent to a recycling or hazardous waste disposal facility and not a landfill.

3.4.8 Potential PCB-Containing Materials/Equipment

According to the USEPA, PCBs may be present in caulking used in windows, door frames, masonry columns and other building materials in buildings built or renovated between 1950 and 1979. In addition, insulating fluids and cooling oils in electrical equipment (i.e., transformers, fluorescent light ballasts, capacitors, etc.) often contained PCBs until around 1980.

If PCB-containing materials or equipment are encountered in the future, and should disposal be required, the PCB content in the materials or equipment should be confirmed prior to disposal.

Any PCB-containing equipment (if present) should be handled, decontaminated, transported and disposed of as per current Federal and Provincial acts and regulations. Any PCB-containing equipment requiring removal from the building should be transported and disposed of at an approved hazardous waste disposal site, and not a landfill disposal site, by a registered hazardous waste transporter in accordance with applicable regulations.

3.4.9 Silica Containing Materials

Silica is expected to be present in concrete used in the construction of the foundation for the accommodations cabin. Silica may also be present in asphalt shingles used in the construction of accommodations cabin. Precautions should be taken to prevent/reduce exposure to silica dust during any disturbance/ demolition of silica-containing products, such as wetting the surface of the materials to prevent dust emissions, donning respiratory protection, and cleaning tools and clothing prior to exiting work areas. Activities involving the disturbance and/or demolition of silica-containing materials should be carried out in a manner that ensures silica dust concentrations do not exceed the applicable ACGIH TLV.

3.4.10 Potential Radioactive Materials

One smoke detector was observed during the Pre-Demolition HBMA site visit (refer to Photo 35, Appendix B3). Smoke detectors observed may contain very small amounts of radioactive material (i.e., Americium 241). Smoke alarms that use radioactive material incorporated in an ionization chamber are called "ion chamber smoke alarms".

3.4.11 Summary of Findings

Hazardous building materials identified at Camp #2 during this Pre-Demolition HBMA and disposal options, if required, are summarized in Table 3-5. Conclusions and recommendations made with respect to the potential and actual presence of hazardous building materials within the accommodations cabin and outhouse are provided in Section 3.4 and should be reviewed in conjunction with Table 3-5.

Table 3-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
ACMs	NL Asbestos Abatement Regulations (Reg. 111/98)	Non-friable black shingle (asbestos containing) on the roof of the accommodations cabin (~55m^2). Non-friable black shingle and tar (asbestos containing) on the roof of the outhouse (~3m^2). Note that other possible hidden and inaccessible ACMs have the potential to be present within the accommodations building, but were not identified during the Pre-Demolition HBMA site visit.	ACMs cannot be disposed of at a Construction & Demolition Site; however, these materials can be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility. The transportation and disposal of asbestos should be conducted in accordance with the NL Asbestos Abatement Regulations (Reg. 111/98) and with Standard Operating Procedures (SOPs) for disposal of ACMs at the landfill.
LBPs	Guidance Document for Leachable Toxic Waste and Disposal (GD-PPD-26.1) Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Surface Coating Materials Regulations (SOR/2016-193)	LBP (white) on plywood in Room 1 of accommodations cabin. LBP (red) on concrete on exterior of accommodations cabin. LBP (red) on exterior door and door trim (also potentially on metal window/door covers and window/door trims) of the accommodations cabin (Potentially leachable).	Paints that were analyzed for lead and contained <5,000 mg/kg lead, may be disposed of at a Regional Solid Waste Disposal Facility (landfill), provided permission is obtained from the landfill owner/operator. Given that the concentration of lead detected in paint sample PP-PS6 (red paint on the exterior door of the accommodations building) contains lead at a concentration (10,400 mg/kg) above the former Federal HPA criterion of 5,000 mg/kg, lead leachate analysis is required to determine whether or not the door can be disposal of at a landfill. Alternatively, the door and associated trim may be sent to a metal recycling facility, provided the facility is informed about the concentration of lead in the paint. Given the nature of the paint on the exterior door (thin layer of paint on metal), it may not be possible to collect enough volume of paint for leachate analysis.

Table 3-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
Potential UFFI	Federal HPA (R.S.1985, c. H-3)	None Identified	UFFI is permitted to be bagged and transported to an approved WDS and disposed in the special waste area of the site.
Mould	Mould Guidelines for the Canadian Construction Industry, Canadian Construction Industry (CCI), 2004; Mould Abatement Guidelines, Environmental Abatement Council of Ontario (EACO), 2010	Bulk Sample PP-MS1 contained Cladosporium mould with abundant growth in the accommodations cabin. Quantity unknown.	All mould impacted materials may be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility.
Potential ODS	Federal Halocarbon Regulations (SOR/2003-289)	R12 refrigerant in freezer in Room 1.	Materials containing ODS should be received by a contractor or facility that has the proper approvals to remove, handle and/or dispose of ODS. The remaining materials can be disposed of at a recycling facility, provided permission is obtained from the facility.
Potential Lead-Containing Materials/ Equipment	Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149) Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301)	Potential lead-containing solder (piping and plumbing)	Lead-containing materials and equipment can be disposed of at a metal recycling or hazardous waste disposal facility, in accordance with applicable regulations. The transportation and disposal of hazardous lead-containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.
Potential Mercury-Containing Materials/ Equipment	Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Products Containing Mercury Regulations (SOR/2014-254)	None identified	Mercury-containing materials and equipment can be disposed of at a recycling or hazardous waste disposal facility, in accordance with applicable regulations. The transportation and disposal of hazardous mercury-containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.

Table 3-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
Potential PCB-Containing Materials/ Equipment	Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149) Federal TDG Act (1992, c. 34) Guidance Document for Leachable Toxic Waste and Disposal (GD-PPD-26.1) Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301) PCB Regulations (SOR/2008-273) PCB Waste Export Regulations (SOR/97-109) Regulations Amending the PCB Regulations (SOR/2010-57)	None identified	Any PCB-containing materials and equipment should be handled, decontaminated, transported and disposed of as per current Federal and Provincial acts and regulations. Any PCB-containing materials and equipment requiring removal from the building should be transported and disposed of by a registered hazardous waste transporter in accordance with applicable regulations. The transportation and disposal of PCB containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.
Silica-Containing Materials	NL OHS Act (RSNL1990 Chapter O-3) NL OHS Regulations (5/12)	Asphalt shingles and concrete.	These materials can be disposed of at a Regional Solid Waste Disposal Facility (landfill).
Potential Radioactive Materials	Federal TDG Act (1992, c. 34)	Smoke detector – Room 2	Smoke detectors that contain low level radioactive materials must be transported, as per Federal TDG Regulations, to a licensed disposal facility.

APPENDIX A3

FIGURES

NOTES:

1. ALL DIMENSIONS ARE IN METERS.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF NEWFOUNDLAND LABRADOR HYDRO AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.

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Approved by: C. Finney

Scale: As Shown

Project: Pre-Demolition Hazardous Building Materials Assessment, Former Construction Camp Sites, Bay d'Espoir - Avalon Transmission Line, NL

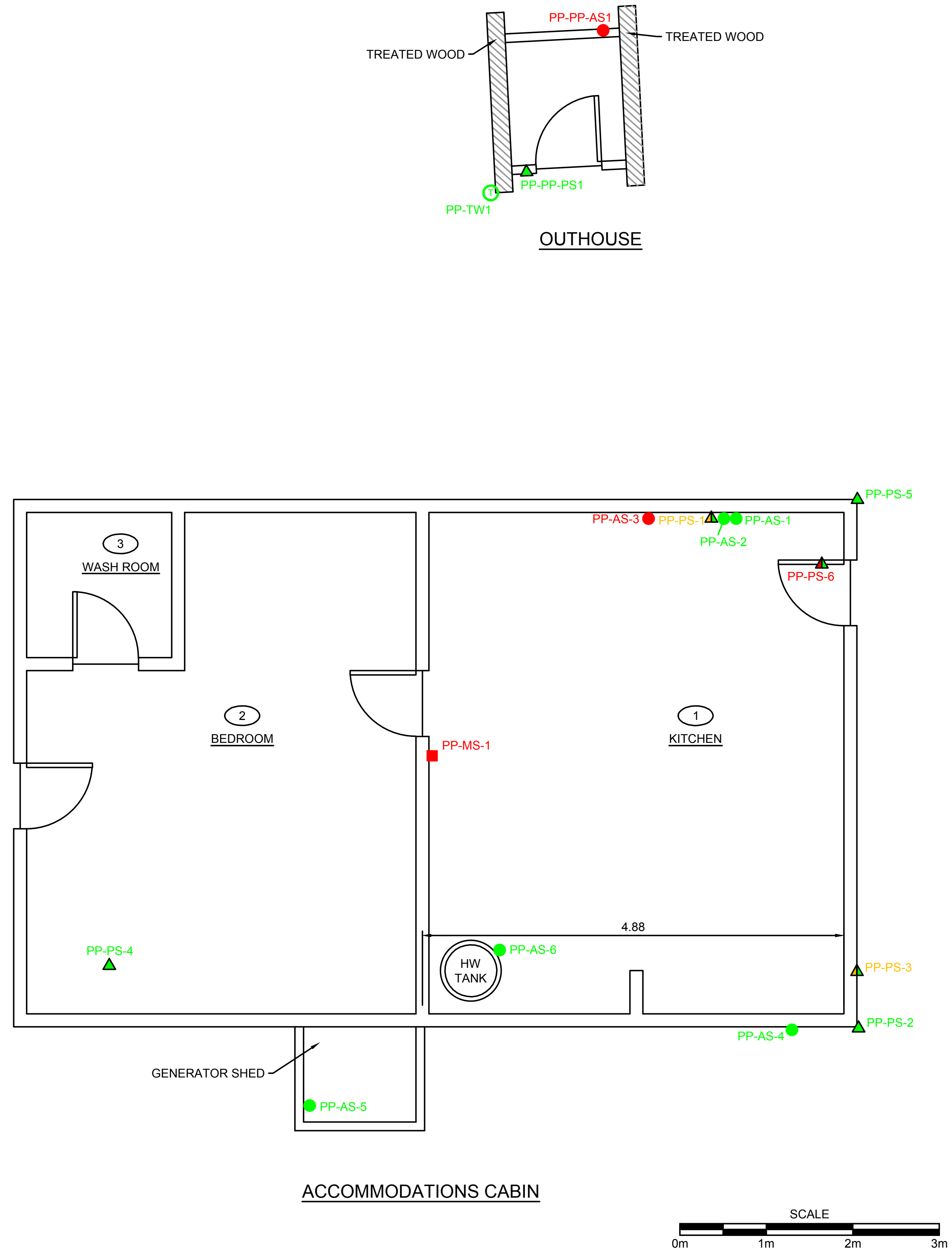
Title: Site Location Plan (Aerial) - Camp #2 Site

Date: April 2019

Project No. TF18104243.2000

Rev. No. 0

Figure No. 3.1



LEGEND:

- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED
- ASBESTOS SAMPLE LOCATION - RESULTS > 1% FOR ASBESTOS
- PAINT SAMPLE LOCATION - NO CRITERIA EXCEEDANCES FOR LEAD OR MERCURY OR PCBs WHERE APPLICABLE
- PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY OR PCBs WHERE APPLICABLE
- PAINT SAMPLE LOCATION - RESULTS EXCEED 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY OR PCBs WHERE APPLICABLE
- ABUNDANT MOULD GROWTH DETECTED
- TREATED WOOD SAMPLE LOCATION - NO CRITERIA EXCEEDANCES

NOTES:

1. ALL DIMENSIONS ARE IN METERS.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
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Approved by:	C. Finney
Scale:	As Shown
Project:	Pre-Demolition Hazardous Building Materials Assessment, Former Construction Camp Sites, Bay d'Espoir - Avalon Transmission Line, NL
Title:	Sample Location Plan - Camp #2 Site
Date:	April 2019
Project No.	TF18104243.2000
Rev. No.	0
Figure No.	3.2

APPENDIX B3

PHOTOGRAPHIC RECORD


Photo 1: View of the transmission lines near Camp #2, looking south.


Photo 2: View of the gravel access road at Camp #2, looking northeast.


Photo 3: View of the land west of the accomodations cabin at Camp #2.


Photo 4: View of the land east of the accomodations cabin at Camp #2.

Photo 5: View of the accommodations cabin at Camp #2, looking northwest.

Photo 6: View of the accomodations cabin at Camp #2, looking north.

Photo 7: View of the land north of the accomodations cabin at Camp #2, looking north.

Photo 8: View of the kitchen inside the accomodations cabin at Camp #2.

Photo 9: View of the kitchen of the accomodations cabin at Camp #2.

Photo 10: View of the bedroom of the accomodations cabin at Camp #2.

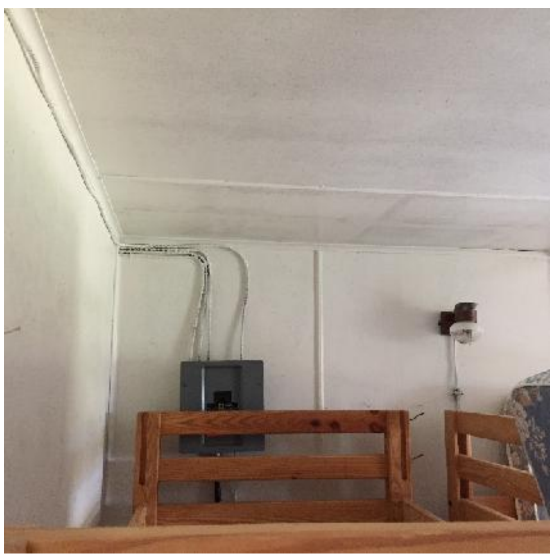

Photo 11: View of the bedroom of the accomodations cabin at Camp #2.

Photo 12: View of the bathroom in the accommodations cabin at Camp #2.


Photo 13: View of outhouse, looking northeast.


Photo 14: View of outhouse foundation, looking southwest.


Photo 15: View of cavity inspection on the exterior of cabin.


Photo 16: View of cavity inspection in the floor of cabin.

Photo 17: View of bulk material sample PP-AS-1, black paper backing and pink fibreglass insulation, cabin interior.

Photo 18: View of bulk material sample PP-AS-2, tar paper, cabin interior.

Photo 19: View of bulk material sample PP-AS-3, black shingle, cabin exterior. **2.2 % Crysotile Asbestos**

Photo 20: View of bulk material sample PP-AS-4, concrete, cabin exterior.

Photo 21: View of bulk material sample PP-AS-5, concrete block and mortar, cabin exterior.

Photo 22: View of bulk material sample PP-PP-AS1, black shingle and tar, outhouse exterior. **1.1 % Crysotile Asbestos**

Photo 23: View of paint sample PP-PS1, floor, cabin interior.

Photo 24: View of paint sample PP-PS2, wall, cabin exterior.

Photo 25: View of paint sample PP-PS3, wall, cabin exterior.

Photo 26: View of paint sample PP-PS4, ceiling, cabin interior.

Photo 27: View of paint sample PP-PS5, wall, cabin exterior.

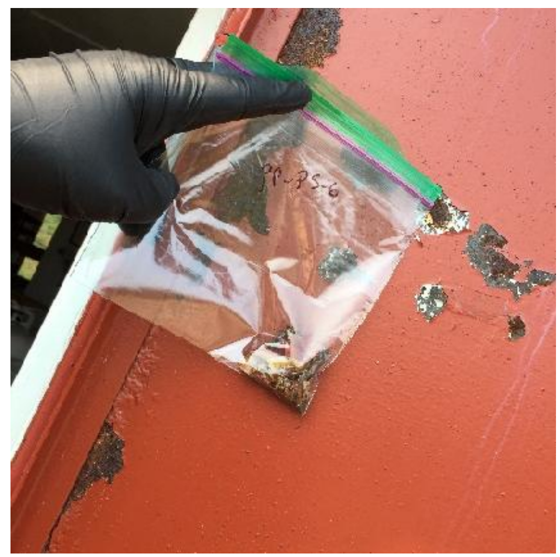

Photo 28: View of paint sample PP-PS6, wall, cabin exterior.
Lead concentration = 10,400 mg/kg

Photo 29: View of location of paint sample PP-PP-PS1,
wall of outhouse exterior.

Photo 30: View of bulk mould sample PP-MS1,
wall of cabin interior.

Photo 31: View of kelvinator freezer (R12 refridgerant containing),
cabin interior.

Photo 32: View of propane fired refridgerator,
cabin interior.

Photo 33: View of propane fired hot water tank and copper pipes, cabin interior.

Photo 34: View of copper piping under bathroom sink, cabin interior.

Photo 35: View of incandescent lighting and smoke detector, cabin interior.

Photo 36: View of ducting from propane stove, cabin interior.

APPENDIX C3

SAMPLE AND ANALYTICAL SUMMARY TABLES

Table C3-1: Bulk Sample Descriptions and Asbestos Analytical Results (Camp #2)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Sample Description	Layers Analyzed	Analytical Result
PP-AS-1	1	Kitchen	13	Ceiling	Black paper backing over pink fibreglass insulation	insulation	ND
PP-AS-2	1	Kitchen	14	Ceiling	Tar paper	tar paper	ND
PP-AS-3	Exterior	Exterior	15	Roof	Black shingle	shingle	**2.20%**
PP-AS-4	Exterior	Exterior	16	Foundation	Concrete	concrete	ND
PP-AS-5	Exterior	Exterior	17	Foundation	Concrete block and mortar	concrete and mortar	ND
PP-PP-AS1	Exterior	Exterior - Outhouse	18	Roof	Black shingle and black tar	shingle and tar	**1.10%**

Notes:

ACM: Asbestos-Containing Material

DJC: Drywall Joint Compound

VFT: Vinyl Floor Tile

VSF: Vinyl Sheet Flooring

ND: Non-Detect (<0.1%)

*Brown paper and tar analyzed as one layer because the laboratory could not separate these materials.

Bold and underlined value indicates asbestos was detected but is below 1% by dry weight.

Shaded value exceeds 1% asbestos by dry weight and is considered to be an ACM as outlined in the Newfoundland and Labrador Asbestos Abatement Regulations (Reg. 111/98).

Table C3-2: Paint Sample Descriptions and Lead Analytical Results (Camp #2)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Lead (mg/kg)
PP-PS1	1	Kitchen	19	Ceiling	Plywood	White on plywood (sample includes plywood)	15.0	**<u>103</u>**
PP-PS2	Exterior	Exterior - Cabin	20	Wall	Metal	Blue on metal siding (sample includes metal siding)	15.0	64
PP-PS3	Exterior	Exterior - Cabin	21	Wall	Concrete block	Red on concrete (sample includes paint on concrete)	15.0	**<u>122</u>**
PP-PS4	2	Bedroom	22	Floor	Plywood	Grey on plywood (sample includes wood)	15.0	<15
PP-PS5	Exterior	Exterior - Cabin	23	Wall	Wood Trim	White on wood trim (sample includes wood)	15.0	<15
PP-PS6	Exterior	Exterior - Cabin	24	Exterior Door	Door	Red on door	15.0	**<u>10,400*</u>**
PP-PP-PS1	Exterior	Outhouse	25	Wall	Plywood	Grey on plywood (sample includes plywood)	15.0	<15

Notes:

<X: Non-Detect

* Insufficient sample to analyze for leachable lead

RDL: Reportable Detection Limit

HPA: Hazardous Products Act

<u>Bold and underlined value exceeds Federal HPA criterion (90 mg/kg).</u>

Shaded value exceeds former Federal HPA criterion (5,000 mg/kg).

Table C3-3: Paint Sample Descriptions and Mercury Analytical Results (Camp #2)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Mercury (mg/kg)
PP-PS1	1	Kitchen	19	Ceiling	Plywood	White on plywood (sample includes plywood)	0.05	2.35
PP-PS2	Exterior	Exterior - Cabin	20	Wall	Metal	Blue on metal siding (sample includes metal siding)	0.05	<0.05
PP-PS3	Exterior	Exterior - Cabin	21	Wall	Concrete block	Red on concrete (sample includes paint on concrete)	0.05	0.78
PP-PS4	2	Bedroom	22	Floor	Plywood	Grey on plywood (sample includes wood)	0.05	0.19
PP-PS5	Exterior	Exterior - Cabin	23	Wall	Wood Trim	White on wood trim (sample includes wood)	0.05	<0.05
PP-PS6	Exterior	Exterior - Cabin	24	Exterior Door	Door	Red on door	0.05	0.81
PP-PP-AS1	Exterior	Outhouse	25	Wall	Plywood	Grey on plywood (sample includes plywood)	0.05	0.16

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

HPA: Hazardous Products Act

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guideline

Bold and underlined value exceeds Federal HPA criterion (10 mg/kg).

Shaded value exceeds CCME CSQG for an industrial site (50 mg/kg).

Table C3-4: Paint Sample Descriptions and PCB Analytical Results (Camp #2)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Total PCB (mg/kg)
PP-PS1	1	Kitchen	19	Ceiling	Plywood	White on plywood (sample includes plywood)	0.5	<0.5
PP-PS2	Exterior	Exterior - Cabin	20	Wall	Metal	Blue on metal siding (sample includes metal siding)	0.5	<0.5
PP-PS3	Exterior	Exterior - Cabin	21	Wall	Concrete block	Red on concrete (sample includes paint on concrete)	0.5	<0.5
PP-PS4	2	Bedroom	22	Floor	Plywood	Grey on plywood (sample includes wood)	0.5	<0.5
PP-PS5	Exterior	Exterior - Cabin	23	Wall	Wood Trim	White on wood trim (sample includes wood)	0.5	<0.5
PP-PS6	Exterior	Exterior - Cabin	24	Exterior Door	Door	Red on door	0.5	<0.5
PP-PP-AS1	Exterior	Outhouse	25	Wall	Plywood	Grey on plywood (sample includes plywood)	0.5	<0.5

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guideline

NL MAE: Newfoundland and Labrador Department of Municipal Affairs and Environment

TDG: Transportation of Dangerous Goods

[#]Sample collected by Hydro on May 5, 2018.

Bold and underlined value exceeds CCME CSQG for an industrial site (33 mg/kg).

Shaded value exceeds the criterion for PCB solid provided in the NL MAE Leachable Toxic Waste, Testing and Disposal Guidance Document and the TDG Regulations (50 mg/kg).

Table C3-5: Bulk Sample Descriptions and Leachable Treated Wood Parameter Analytical Results (Camp #2)

		Data	Guidelines		
Sample ID		PP-TW1	ENVC Guidance Document Treated Wood Waste Disposal Amended September 2015 (GD-PPD-075.1)		ENVC Guidance Document Leachable Toxic Waste, Testing and Disposal Revised November 2003 (GD-PPD-26.1)
Sample Location and Room No.		Outhouse			
Detailed Material Description		Crosote Wood			
Location (Photo No.)		Under Outhouse			
Parameters	**RDL (µg/L)**	(µg/L)	Column 2: TCLP Limits (CEPA) (µg/L)	Column 3: Double TCLP Limits (µg/L)	Schedule II (Interprovincial Movement of Hazardous Waste Regulations (pending)) (µg/L)
Leachable Benzo(a)pyrene	0.001	<0.001	1	2	1
Leachable m/p-Cresol	0.0	<0.008	-	-	200,000
Leachable o-Cresol	0.0	<0.004	-	-	200,000
Leachable Cresol Total	0.0	<0.012	200,000	400,000	200,000

Notes:

RDL: Reportable detection limit

ENVC: Newfoundland and Labrador Department of Environment and Conservation

TCLP: Toxicity Characteristic Leaching Procedure

CEPA: Canadian Environmental Protection Act

TWW: Treated Wood Waste

-: Value Not Established

Shaded results indicate that TCLP concentration exceeds Column 2 TCLP limits provided in the TWW Disposal Guidance Document.

Bold results indicate that TCLP concentration exceeds Schedule II TCLP limits provided in the Leachable Toxic Waste Guidance Document.

Underlined results indicate that TCLP concentration exceeds Column 3 TCLP limits provided in the TWW Disposal Guidance Document.

Table C3-6: Bulk Sample Descriptions and Mould Analytical Results (Camp #2)

Sample ID	Detailed Material Description	Sample Location	Mould Identified	Analytical Result
PP-MS-1	Bulk sample (including wood)	Room 1	*Cladosporium*	Abundant

Notes:

1. Mould growth is subjectively assessed with description terms sparse, moderate and abundant.
2. The presence of spores (lacking other fungal structures associated) is assessed as following: a few spores (< 10 spores average per microscopic field at 400X), some spores (10 - 100 spores average per microscopic field at 400X), many spores (> 100 spores average per microscopic field at 400X).
3. The presence of a few spores generally represents settled spores on the surface of the sample rather than indicating mould growth.

APPENDIX D3

ROOM-BY-ROOM INSPECTION SHEETS

Building	Room #	Floor #	Room Description	Dimensions
Pynns (Camp 2)	Exterior		Exterior	L = 32' W = 18' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
~~Floor~~ Foundation	Concrete			
Walls (~~include window caulking~~)	Metal siding / Cinderblock			
Ceiling	black shingles			
Paint (and substrate)	Walls: blue on siding + Red on Cinderblock Ceiling: Floor: Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	— Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	2 → incandescent			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	—			
Mould / Water Staining	Area impacted —			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext —			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials —			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
Pynns (Camp 2)	1	1	Kitchen	L = 16' W = 16' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Wood			
Walls (include window caulking)	Wood			
Ceiling	Wood			
Paint (and substrate)	Walls: White Ceiling: White Floor: Grey Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment				
Fluorescent Lighting	Ballast Manufacturer: Serial #:	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	4 incandesent			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	Copper pipe on water + propane lines.			
Mould / Water Staining	Area impacted Ceiling + walls			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext Danby Propane + DPR-2260-1 Kelvinator CA [illegible] model) R12.			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials Propane Stove, oven, fridge			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
Pynns (Camp 2)	2		Bunk	L = 18' W = 16' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Wood			
Walls (include window caulking)	Wood			
Ceiling	Wood			
Paint (and substrate)	Walls: Ceiling: Some Floor: Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	— Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: incandescent.	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	—			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	Copper lines for propane			
Mould / Water Staining	Area impacted On Ceiling			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext —			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials —			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
Pynns (Camp2)	3	1	Bathroom	L = 6' W = 6' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	WooD			
Walls (include window caulking)	WooD			
Ceiling	WooD			
Paint (and substrate)	Walls: White Ceiling: White Floor: Grey Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	— Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	1 incandescent.			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted — Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	Copper pipes.			
Mould / Water Staining	Area impacted Ceiling			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext —			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials —			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
Camp 2			Outhouse	L = 6' W = 5' H = 7'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	—			
Walls (include window caulking)	Wood (Int + Ext)			
Ceiling	Wood black shingles			
Paint (and substrate)	Walls: Ceiling: Grey Floor: Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	— Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)				
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,				
Mould / Water Staining	Area impacted			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials Creosote timber Building blown away from foundation			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

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APPENDICES

4.0 MITCHELL'S POND CAMP

Mitchell's Pond Camp is located on Mitchell's Pond, approximately 36 km northwest of the Town of Terrenceville, NL (refer to Figure 4.1, Appendix A4), and was accessed via a gravel access road. Mitchell's Pond Camp is comprised of an accommodations cabin and an outhouse.

4.1 BUILDING DESCRIPTION

The accommodations cabin is a one-storey, rectangular structure with a footprint area of approximately 71 m^2. The floor plan of the cabin consists of a kitchen with sleeping areas, a pantry and a washroom (refer to Figure 4.2, Appendix A4). The foundation of the accommodations cabin consists of concrete block footings. The structure of the accommodations cabin consists of brick. The exterior walls on the accommodations cabin are finished with brick and the roof is finished with asphalt shingles. The window and exterior door openings on the accommodations cabin are barricaded with metal covers for security purposes (refer to Photos 1 to 3, Appendix B2). Interior wall and ceiling finishes in the accommodations cabin consists of painted plywood. Floors/floor finishes consist of plywood (refer to Photos 4 to 7, Appendix B2). Incandescent and fluorescent lighting was observed on the interior of the cabin. The accommodations cabin is not currently heated.

The outhouse is a one-storey, rectangular structure with a footprint area of approximately 3 m^2. The foundation and structure of the outhouse consists of wood framing and concrete. The exterior walls on the outhouse are finished with plywood and the roof is finished with asphalt shingles (refer to Photos 8 and 9, Appendix B4). Interior wall and ceiling finishes in the outhouse consist of painted plywood. Floor finishes consist of plywood. The outhouse does not contain any lighting or heating.

A description of accommodations cabin is outlined in Table 4-1 and a description of the outhouse is outlined in Table 4-2. Photographs of the buildings are provided in Appendix B4.

Table 4-1: Site Building Description – Accommodations Cabin

Building Name	Accommodations cabin	Photo No. (Appendix B4)
Date of Construction	Approximately late 1960's/early 1970's	-
Date of Renovations	Unknown	-
No. of Stories	One	1 to 3
Crawl Space (Yes/No)	No	-
Attic (Yes/No)	Yes	11
Type of Structure	Wood Frame and bricks	12
Type of Foundation	Concrete blocks	17 to 20
Exterior	Red and Brown brick	1 to 3
Window/Door Frames	Painted Metal and Wood	1 to 3
Exterior Doors	Painted Metal	1 and 4
Roofing Materials	Asphalt Shingles	1 and 21
Interior Walls Finishes	Painted Plywood	4 to 7
Interior Ceiling Finishes	Plywood	4 to 6
Floor Finishes	Plywood	4 and 5
Interior Doors	NA	-
Interior Lighting	Fluorescent and Incandescent	4 to 6
Exterior Lighting	Incandescent	1
Heating	Oil fired heater	32

Table 4-2: Site Building Description – Outhouse

Building Name	Outhouse	Photo No. (Appendix B4)
Date of Construction	Approximately late 1960's/early 1970's	-
Date of Renovations	Unknown	-
No. of Stories	One	8
Crawl Space (Yes/No)	No	-
Attic (Yes/No)	No	-
Type of Structure	Wood Frame and plywood	8 and 9
Type of Foundation	Wood and concrete	8
Exterior	Plywood	8
Window/Door Frames	NA	-
Exterior Doors	NA	-
Roofing Materials	Asphalt Shingles	8 and 24
Interior Walls Finishes	Painted Plywood	9
Interior Ceiling Finishes	Plywood	-
Floor Finishes	NA	-
Interior Doors	NA	-
Interior Lighting	NA	-
Exterior Lighting	NA	-
Heating	NA	-

4.2 ROOM DESIGNATION

Each room at Mitchell's Pond Camp was assigned a specific room name. The designated room names are presented in Table 4-3 and graphically illustrated on the sample location plan (refer to Figure 4.2, Appendix A4).

Table 4-3: Assigned Rooms

Level No.	Room Name – Accommodations Cabin	Room Number
1	Kitchen/Bunk Area	Room 1
1	Pantry	Room 2
1	Washroom	Room 3
1	Outhouse	Outhouse

4.3 FINDINGS

The findings documented in this section are based on observations made by Wood personnel at the time of the site visit on August 8, 2018 and the results of laboratory analyses of samples collected from Mitchell's Pond Camp. During the Pre-Demolition HBMA site visit, Wood personnel were accompanied by a representative of Hydro (Mr. Wayne Lidster). Copies of room-by-room inspection sheets for the accommodations building and outhouse are provided in Appendix D4. Photos of the samples collected from the accommodations building and outhouse during the site visits are provided in Appendix B4.

4.3.1 Asbestos-Containing Materials (ACMs)

There are over 3,000 ACMs that are commercially available, which can be divided into two broad categories: friable and non-friable. ACMs were discontinued from use in Canada in the late 1970s/early 1980s, although non-friable asbestos is still found in many more recent buildings.

During the Pre-Demolition HBMA site visit, a total of 10 building material samples (MP-AS1 to MP-AS10) were collected from the accommodations cabin and two building material samples (MP-PP-AS1 and MP-PP-AS2) were collected from the outhouse (refer to Photos 14 to 25, Appendix B4) and analyzed for asbestos content. Bulk sample descriptions and asbestos analytical results are summarized in Table C4-1, Appendix C4. Sample locations and analytical results are graphically illustrated on Figure 4.2, Appendix A4.

4.3.1.1 Friable Materials

Friable ACMs are defined as materials that can be crumbled, pulverized and reduced to powder when dry using hand pressure. Typical friable materials include acoustical or decorative spray applications, fireproofing and thermal insulation.

4.3.1.1.1 Spray-Applied Fireproofing, Insulation and Texture Finishes

There were no spray-applied fireproofing, insulation or texture finishes observed in the accommodations cabin or outhouse during the Pre-Demolition HBMA site visit; therefore, no samples of these materials were collected for analysis.

4.3.1.1.2 Building and Thermal System Insulation

During the Pre-Demolition HBMA site visit, pink fiberglass insulation was observed between the particle board and plywood in the walls of the accommodations cabin. During the Pre-Demolition HBMA site visit, one (1) sample of foil with paper backing (collected from the pink fiberglass insulation) (MP-AS1) was collected from within the wall cavity of the accommodations cabin and analyzed for asbestos content (refer to Photo 14, Appendix B4). Asbestos was not detected in the insulation sample collected from the accommodations cabin.

4.3.1.1.3 Non-Friable and Potentially Friable Materials

Non-friable ACMs are hard or manufactured products such as floor tiles, fire blankets, pre-formed manufactured cementitious insulation and wallboards, pipes, and siding, wherein the asbestos fibres are bound to the substrate. Note that although a product may be considered non-friable when new, the product may release fine dust when disturbed (e.g., deterioration, removal, renovations) and the free dust is considered friable.

4.3.1.1.4 Ceiling Tile

There were no ceiling tiles observed at Mitchell's Pond Camp during the Pre-Demolition HBMA site visit; therefore, no samples of ceiling tile were collected for analysis.

4.3.1.1.5 Drywall Joint Compound

There was no drywall joint compound observed at Mitchell's Pond Camp during the Pre-Demolition HBMA site visit; therefore, no samples of drywall joint compound were collected for analysis.

4.3.1.1.6 Vinyl Flooring Products and Mastics

There was no vinyl flooring or products observed at Mitchell's Pond Camp during the Pre-Demolition HBMA site visit; therefore, no samples of vinyl flooring or products were collected for analysis.

4.3.1.1.7 Baseboard, Carpet and Stair Tread Adhesives/Mastics

There were no baseboard, carpet or stair tread adhesives/mastics observed at Mitchell's Pond Camp during the Pre-Demolition HBMA site visit; therefore, no samples of these types of adhesives/mastics were collected for analysis.

4.3.1.1.8 Roofing Products

During the Pre-Demolition HBMA site visit, one (1) sample of black shingle and tar (MP-AS8) was collected from the roof of the accommodations cabin and one (1) sample of black shingle and tar (MP-PP-AS1) was collected from the roof of the outhouse and analyzed for asbestos content (refer to Photos 21 to 24, Appendix B4). Asbestos was not detected in the roofing samples collected from the accommodations cabin and outhouse.

It is important to note that, due to height and safety constraints, no samples of roofing, building materials around roof penetrations (e.g., caulking or sealants around vents or electrical conduit) or roof seams were collected from the accommodations cabin for analysis.

4.3.1.1.9 Caulking/Sealant

During the Pre-Demolition HBMA site visit, one (1) sample of red sealant (MP-AS9) was collected from around the brick on the accommodations cabin and one (1) sample of white caulking (MP-AS10) was collected from the vent on the exterior of the accommodations building and analyzed for asbestos content (refer to Photos 22 and 23, Appendix B6). Asbestos was not detected in the white caulking sample (MP-AS) collected from the accommodations cabin.

Asbestos was detected in MP-AS10 containing <0.25 % chrysotile asbestos. According to the NL asbestos abatement regulations (Reg. 111/98), this material is not considered an asbestos-containing material.

4.3.1.1.10 Mortar, Grout and Other Cementitious Materials

During the Pre-Demolition HBMA site visit, one (1) sample of red brick (MP-AS4), one (1) sample of grey mortar on red brick (MP-AS5), one (1) sample of grey mortar on concrete block (MP-AS6) and one (1) sample of concrete block (MP-AS7) were collected from the exterior of the accommodations cabin and one (1) sample of concrete (MP-PP-AS2) collected from the foundation of the outhouse and analyzed for asbestos content (refer to Photos 17, 18, 19, 20 and 25, Appendix B4). Asbestos was not detected in any of the brick, concrete and mortar samples analyzed.

4.3.1.1.11 Fire-Rated Doors

Fire-rated doors and door frames were not observed during the Pre-Demolition HBMA site visit.

4.3.1.1.12 Other Potential ACMs

During the Pre-Demolition HBMA site visit, one (1) sample of black pressed board (MP-AS2) and one (1) sample of tar paper (MP-AS3) was collected from the exterior of the accommodations cabin and analyzed for asbestos content (refer to Photos 15 and 16, Appendix B4). Asbestos was not detected in the pressed board and tar paper samples analyzed.

Other potential ACMs were observed (or suspected to be present) and were not sampled due to the nature of the materials and/or hazards associated with sampling these materials. These materials included, but are not limited to, electrical and mechanical components and insulators such as wiring and gaskets, heat shields inside incandescent/fluorescent light fixtures, and caulking or sealants around or along roof seams, vent pipes, electrical conduits or other penetrations (refer to Photos 1, 4, 6, 32, and 36, Appendix B4).

Other possible hidden and inaccessible ACMs have the potential to be present within the accommodations cabin but were not identified during the Pre-Demolition HBMA site visit. These possible ACMs could include possible fireproofing materials in the wall or ceiling cavities, piping/pipe joint sealants/gaskets and packing associated with cast iron pipe joints, fire rated structures or building materials, vapour barriers in walls, undercoatings on sinks, interior heat resistant components or gaskets inside appliances, concrete lining the interior of hot water tanks, and underground infrastructure or piping.

4.3.2 Paint Additives

Lead compounds have been used in paint as pigment and durability additives since the early 1800s. Mercury compounds have been used in paint as anti-microbial additives up until the 1990s. PCBs have been used in paint as plasticizers and corrosion resistance additives from the 1950s to the 1970s.

During the Pre-Demolition HBMA site visit, three (3) samples (MP-PS1 to MP-PS3) were collected from painted surfaces of the accommodations cabin and two (2) samples (MP-PP-PS1 and MP-PP-PS2) collected from painted surfaces of the outhouse and analyzed for lead, mercury and PCB content (refer to Photos 26 to 30, Appendix B4). Paint sample descriptions and lead, mercury and PCBs analytical results are summarized in Tables C4-2 to C4-4, Appendix C4. Sample locations and analytical results are graphically illustrated on Figure 4.2, Appendix A4.

4.3.2.1 Lead in Paint

Concentrations of lead in the three (3) samples (MP-PS1 to MP-PS3) were collected from painted surfaces of the accommodations cabin and two (2) samples (MP-PP-PS1 and MP-PP-PS2) collected from painted surfaces of the outhouse ranged from <15 mg/kg to 205 mg/kg (refer to Table C4-2, Appendix C4). Two (2) paint samples (MP-PS1 and MP-PP-PS1) contained lead at concentrations above the Federal HPA criterion of 90 mg/kg and below the former Federal HPA criterion of 5,000 mg/kg (refer to Photos 26 and 30, Appendix B4).

4.3.2.2 Mercury in Paint

Concentrations of mercury in the three (3) samples (MP-PS1 to MP-PS3) were collected from painted surfaces of the accommodations cabin and two (2) samples (MP-PP-PS1 and MP-PP-PS2) collected from the outhouse ranged from <0.05 to 0.20 mg/kg, and therefore, were below the Federal HPA criterion (10 mg/kg) (refer to Table C4-3, Appendix C4).

4.3.2.3 PCBs in Paint

PCBs were not detected (<0.5 mg/kg) in any of the paint samples analyzed, and therefore, were below the CCME CSQG for PCBs in soil at an industrial site (33 mg/kg) and the applicable criterion for PCB solid (50 mg/kg) (refer to Table C4-4, Appendix C4).

4.3.3 Urea Formaldehyde Foam Insulation (UFFI)

Visual indicators suggesting the potential presence of UFFI were not observed at Mitchell's Pond Camp. The nature of the insulation in the walls and ceilings throughout the accommodations cabin consisted of fiberglass insulation.

Since the original date of construction of Mitchell's Pond Camp (assumed construction commenced the same timeframe as the original transmission line, late 1960's/early 1970's) is unknown, it is possible that UFFI may be present.

In the event that UFFI is present, the CMHC state that "tests show that UFFI is not a source of over-exposure to formaldehyde after the initial curing and release of excess gas". The general view based on studies concerning formaldehyde emissions is that as a product ages, the amount of formaldehyde off-gassed from the product decreases over time. The amount of formaldehyde released is reportedly dependent on temperature, humidity and whether or not the product is exposed to excessive moisture or water.

4.3.4 Suspected Visible Mould Growth (SVG)

Wood inspected the interior areas of the accommodations cabin and outhouse for visual or olfactory evidence of suspected mould. SVG was noted on much of the ceiling and wall surfaces inside the accommodations cabin during the Pre-Demolition HBMA site visit. A sample, MP-MS1, was collected in from the wall of Room 1 (refer to Figure 4-1, Appendix A4 and refer to Photo 31, Appendix B4).

The results of mould analysis determined that bulk sample MP-MS1 contained Myxomycete-like, Monodictys-like and Septonema Aspergillus mould with sparse to moderate growth (refer to Table C4-5, Appendix C4).

4.3.5 Mercury-Containing Thermostats

Thermostats were not identified inside the accommodations cabin at Mitchell's Pond Camp during the Pre-Demolition HBMA site visit.

4.3.6 PCB-Containing Light Ballasts

Fluorescent and incandescent light fixtures were observed on the interior of the accommodations cabin and incandescent light fixtures were observed on the exterior of the accommodations cabin, as observed from the exterior of the cabin, during the Pre-Demolition HBMA site visit (refer to Photos 1, 4, 5 and 6, Appendix B4).

One Gold Label light ballast (Serial #17A240E) was inspected in the Room 1 and was labelled as non-PCB containing (refer to Photo 33, Appendix B4). Note that one light ballast was inspected at the time of the site visit.

4.3.7 Potential Sources of ODS and Halocarbons

During the Pre-Demolition HBMA, a potential source of ODS was identified within the accommodations cabin. Results of the ODS inspection is summarized in Table 4-4.

Table 4-4: Potential Sources of ODSs

Item	Manufacturer	Model (Serial No.)	Location Observed	Photo No. (Appendix B2)	Refrigerant	Potential ODS
Freezer	General	GC-7-I0L	Room 1	34	R12	Yes

Based on observations made during the site visit, ODSs are present in the accommodations cabin in the form of refrigerant R12 contained in a freezer located in Room 1 (refer to Photo 34, Appendix B4). This refrigerant (R12) is a hydrochlorofluorocarbon (HCFC) and is regulated under the Federal Halocarbon Regulations.

Fire extinguishers were not observed at Mitchell's Pond Camp during the Pre-Demolition HBMA site visit.

4.3.8 Other Potentially Hazardous Building Materials or Substances

Other potentially hazardous building materials or substances identified during this assessment are presented in the following sections.

4.3.8.1 Lead-Containing Materials and Equipment

Lead is typically associated with plumbing solder and older pipe materials (e.g., cast iron pipe joints), as well as products such as radiation protective shielding and lead-acid batteries. Lead can also be present in steel and iron primer, industrial electrical jacketing, roof flashing and tank linings.

Since the actual date that Mitchell's Pond Camp was constructed is unknown (assumed to be late 1960's/early 1970's), it is possible that lead solder is present in plumbing and piping (i.e., cast iron and copper piping) in the accommodations cabin, as lead solder for use in potable water distribution pipes was not banned until the late 1980s (refer to Photos 7 and 35, Appendix B4). Note that the only copper lines observed within the accommodations cabin were associated with the propane stove and oil-fired furnace. No potable water lines were present.

4.3.8.2 Mercury-Containing Materials and Equipment

The light tubes and bulbs in HID and fluorescent light fixtures often contain limited quantities of mercury in a powder or vapour form. Incandescent light fixtures and fluorescent light fixtures were observed on the exterior and the interior of the accommodations cabin during the Pre-Demolition HBMA site visit (Photos 1, 4, 5 and 6, Appendix B4).

4.3.8.3 PCB-Containing Materials and Equipment

According to the USEPA, PCBs may be present in caulking used in windows, door frames, masonry columns and other building materials in buildings built or renovated between 1950 and 1979. In addition, and as mentioned previously, insulating fluids and cooling oils in electrical equipment (i.e., transformers, fluorescent light ballasts, capacitors, etc.) often contained PCBs until around 1980.

4.3.8.4 Treated Wood Chemicals

The chemicals that are used to protect and preserve wood products from insect attack and fungal decay may pose risks to human health and the environment. Depending on the wood treatment used, treated wood may be considered a hazardous waste upon disposal. The NL Department of Environment and Conservation (currently the NL MAE), 2015 Guidance Document for Treated Wood Waste Disposal (GD-PPD-075.1) provides landfill disposal standards for "pressure treated" inorganic preservatives (i.e., arsenic and chromium) and creosote (i.e., total cresol and benzo(a)pyrene) and chlorophenolic (i.e., pentachlorophenol) formulations used to preserve wood. These landfill disposal standards for treated wood waste (TWW) are used to assess the results of leachability testing to determine disposal options for treated wood to be removed during renovation or demolition activities.

Treated wood was not identified during the Pre-Demolition HBMA site visit.

4.3.8.5 Silica

According to the CPWR – The Center for Construction Research and Training, many common construction materials contain silica including, asphalt, brick, cement, concrete, drywall, grout, mortar, stone, sand and tile. The dust created by cutting, grinding, drilling or otherwise disturbing these materials can contain crystalline silica particles.

Based on the Pre-Demolition HBMA site visit, silica is expected to be present in concrete used in the construction of the foundation for the accommodations building. Silica may also be present in the asphalt shingles used in the construction of the accommodations building.

4.3.8.6 Radioactive Materials

Smoke detectors were not observed during the Pre-Demolition HBMA site visit. Smoke detectors observed may contain very small amounts of radioactive material (i.e., Americium 241). Smoke alarms that use radioactive material incorporated in an ionization chamber are called "ion chamber smoke alarms".

4.4 CONCLUSIONS AND RECOMMENDATIONS

Based on observations made and information gathered during the Pre-Demolition HBMA, the following conclusions and recommendations are made with respect to the potential and actual presence of hazardous building materials at Mitchell's Pond Camp.

4.4.1 ACMs

Results of the asbestos sampling and analytical program for the Mitchell's Pond Camp revealed that all building materials sampled contained less than 1% asbestos by dry weight, and not considered asbestos-containing.

Other potential ACMs were observed (or suspected to be present) and were not sampled due to the nature of the materials and/or hazards associated with sampling these materials. These materials included, but are not limited to:

- Electrical and mechanical components and insulators such as wiring and gaskets.
- Heat shields inside incandescent/ fluorescent light fixtures.
- Caulking or sealants around or along roof seams, vent pipes, electrical conduits or other penetrations.

Other possible hidden and inaccessible ACMs have the potential to be present within the buildings at Mitchell's Pond Camp but were not identified during the Pre-Demolition HBMA site visit. These possible ACMs could include concrete leveling compound (existing concrete foundation), possible fireproofing materials in the wall or ceiling cavities, piping/pipe joint sealants/gaskets and packing associated with cast iron pipe joints, fire rated structures or building materials, vapour barriers in walls, undercoatings on sinks, interior heat resistant components, and underground infrastructure or piping.

If other potential ACMs that were not sampled as part of this assessment are encountered in the future, these materials should be treated as ACMs or samples should be collected and tested to verify asbestos content. This should be done as soon as these materials are encountered and before these materials are disturbed. This includes materials that are currently concealed by walls and ceiling systems.

In accordance with the NL Asbestos Abatement Regulations (Reg. 111/98), which provide the legislative requirements for safe handling of ACMs in workplaces in the Province of NL, the following is recommended:

- Safe work procedures shall be established.
- All buildings constructed during the period when asbestos was readily used in construction (generally prior to the early 1980s) or any buildings that are suspected as having asbestos must have a written assessment and management plan (where applicable) for potential ACMs.
- Materials suspected of containing asbestos are required to be handled as ACMs, until analysis by a competent laboratory determines whether or not it does contain asbestos.
- Prior to general demolition, all ACMs must be safely removed from the building and disposed of in accordance with appropriate environmental guidelines by an asbestos abatement contractor registered with the Occupational Health and Safety (OHS) Division of Service NL.
- Most work involving ACMs (i.e., disturbance, removal and encapsulation) must be conducted by a

contractor registered with the OHS Division of Service NL.

- ACMs in good condition should be inspected on an annual basis.
- ACMs in poor condition should be removed from the building and transported off-site for proper disposal.
- Workers should don adequate respiratory protection and personal protective equipment (PPE) when working with ACMs.

Prior to the removal and/or abatement of any identified ACMs (or any other hazardous building materials), an abatement plan including technical specifications should be designed, prepared and supervised by a qualified professional and should be undertaken by qualified trades, in accordance with applicable standards. Activities involving the disturbance and/or removal of ACMs should be carried out in a manner that ensures asbestos fiber concentrations do not exceed the applicable American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV). ACMs can be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility.

4.4.2 Lead, Mercury and PCBs in Paint

Results of the paint sampling and analytical program revealed the following:

- **Lead in Paint**
  - Concentrations of lead in three (3) samples (MP-PS1 to MP-PS3) were collected from painted surfaces of the accommodations cabin and two (2) samples (MP-PP-PS1 and MP-PP-PS2) collected from painted surfaces of the outhouse ranged from <15 mg/kg to 205 mg/kg.
  - Two (2) paint samples (MP-PS1 and MP-PP-PS1) contained lead at concentrations above the Federal HPA criterion of 90 mg/kg and below the former Federal HPA criterion of 5,000 mg/kg; therefore, these paints are considered to be LBPs, but are not likely to be leachable for lead.

- **Mercury in Paint**
  - Concentrations of mercury in the three (3) samples (MP-PS1 to MP-PS3) were collected from painted surfaces of the accommodations cabin and two (2) samples (MP-PP-PS1 and MP-PP-PS2) collected from the outhouse ranged from <0.05 to 0.20 mg/kg; below the Federal HPA criterion of 10 mg/kg. These paints are not considered to be MBPs and are not likely to be leachable for mercury.

- **PCBs in Paint**
  - PCBs were not detected (<0.5 mg/kg) in the three (3) samples (MP-PS1 to MP-PS3) collected from painted surfaces of the accommodations cabin and two (2) samples (MP-PP-PS1 and MP-PP-PS2) from the painted surfaces of the outhouse, and therefore, below the CCME CSQG for PCBs in soil at an industrial site (33 mg/kg) and the applicable criterion for PCB solid (50 mg/kg).

Based on the paint sample analytical results, painted surfaces of the accommodations cabin and outhouse that were sampled are not likely to be leachable for lead, PCBs or mercury; therefore, should disposal be required (e.g., renovation or demolition activities), the paints analyzed for lead and mercury content may be disposed of at an approved landfill facility, pending landfill and Provincial regulatory approval.

There are potential adverse human health impacts associated with disturbing (e.g., scraping, sanding, burning, etc.) lead, mercury or PCB-containing paint finishes, due to the potential for dust, mist or fumes to be released and inhaled or ingested by workers. Given that lead-based paint was identified at the site, as a precautionary measure, Wood recommends handling these paint finishes, as follows:

- In areas of minor peeling or flaking, the paint should be removed using wet scraping techniques.
- In areas of extensive peeling and flaking, the paint should be removed and more extensive particulate control measures may be required.
- In areas where lead-containing paint finishes are present and in poor condition, an experienced contractor should be utilized for renovating, decommissioning or demolition activities.
- Prior to renovation, dismantling or demolition activities, all areas of extensive peeling and flaking of lead-containing paint finishes and paint debris/dust should be removed and/or remediated to ensure that building occupants/workers are protected from associated dust/particulate.
- Procedures should be implemented to ensure that workers and anyone present in and around areas being renovated, dismantled or demolished are protected. The contractor should also ensure that dust generation and migration is minimized.
- Precautions should be taken to prevent/reduce exposure to paint dust during any disturbance of lead-containing paint finishes, such as wetting the surface of the materials to prevent dust emissions, donning respiratory protection, and cleaning tools and clothing prior to exiting work areas.
- Where possible, lead-containing paint finishes should be removed from metal surfaces prior to welding or cutting these materials.

If potential lead, mercury or PCB containing paint finishes that were not sampled during this assessment are encountered in future, prior to any disturbance or removal, samples should be obtained and tested to verify concentrations of lead, mercury and PCBs. This includes materials that are currently concealed by walls and ceiling systems.

Any disturbance or removal of lead, mercury or PCB-containing paint finishes that may generate dust or respirable aerosols must conform to the Federal and Provincial OHS Regulations. All work should be carried out by individuals wearing proper PPE. The type of respiratory protection and control measures to be implemented during the removal of these types of paint finishes should be determined by a qualified person and based on the risk level of a particular work activity (i.e., scraping, sanding, abrasive blasting, etc.). Activities involving the disturbance and/or removal of lead, mercury or PCB-containing paint finishes should be carried out in a manner that ensures paint dust concentrations do not exceed the applicable ACGIH TLVs.

4.4.3 Potential UFFI

The sale and installation of UFFI was banned in 1980; since the original date of construction is unknown, it is possible that UFFI may be present in the building. Visual indicators suggesting the potential presence of UFFI were not observed in the building. It can be inferred that any UFFI present within the building is unlikely to affect the indoor air quality due to the amount of time that has passed since the insulation was likely installed (i.e., pre-1980) along with the likelihood that formaldehyde has off-gassed over this period of time. It should be noted that, the presence and concentration of formaldehyde cannot be determined or quantified without conducting site-specific testing for formaldehyde.

Although there is currently no Provincial regulations requiring that the removal of UFFI be conducted by a licensed/registered abatement contractor, based on discussions with representatives of the OHS Division of Service NL, it is strongly recommended that this material be abated using similar methods as required for asbestos abatement and that the insulation must be removed in a dry condition. Based on discussions with representatives of the NL MAE, for the purposes of disposal of UFFI, this material is permitted to be bagged and transported to an approved WDS and disposed in the special waste area (unlined area) of the site.

4.4.4 Mould

SVG was noted on ceiling and wall surfaces inside the accommodations cabin during the Pre-Demolition HBMA site visit. The results of mould analysis determined that bulk sample MP-MS1 contained Myxomycete-like, Monodictys-like and Septonema Aspergillus mould with sparse to moderate growth.

Mould spores are present in all indoor environments and cannot be completely eliminated. Cellulose based building materials provide a nutrient base for many mould species; however, mould cannot grow unless an adequate amount of excess moisture is present. The most effective way to prevent mould growth within a building is the prompt removal of any porous building materials with water damage or mould growth, and repairing the building components that lead to the water infiltration.

4.4.5 Potential ODS

Based on observations made during the site visit, ODSs are present in the accommodations cabin in the form of refrigerant R12 contained in a freezer located in Room 1. This refrigerant (R12) is a hydrochlorofluorocarbon (HCFC) and is regulated under the Federal Halocarbon Regulations.

Ozone depleting substances (ODS), if present, should be removed by an approved contractor prior to disposing of any cooling and/or refrigeration equipment from the building. The use, storage, operation, maintenance, decommissioning, and disposal of ODS containing equipment, in general, is regulated at both a Provincial and Federal level and must comply with the most recent NL Halocarbon Regulations and the Federal Halocarbon Regulations. The status of the potential ODS containing equipment should be confirmed through a mechanical contractor or consultant.

4.4.6 Potential Lead-Containing Materials/Equipment

Lead solder may be present in the copper piping within the accommodations cabin (i.e. copper propane and fuel lines). No copper lines associated with drinking water was observed at the time of the site visit.

The disturbance, control or disposal of lead-containing material/equipment should be carried out in accordance with applicable criteria/regulations (refer to Section 1.6 of this report). The presence/absence of lead in these materials should be confirmed through a contractor or consultant prior to disturbance or disposal of these materials. Typically, these materials are sent to a metal recycling facility and not a landfill. Removal of lead-containing batteries should be completed in a manner that ensures structural integrity and no loss of fluid from the batteries. Should disposal be required, disposal of lead-containing batteries should be completed in accordance with hazardous waste procedures/guidelines (i.e., at an approved facility).

4.4.7 Potential Mercury-Containing Materials/Equipment

Should disposal be required, mercury-containing equipment should be removed intact and returned to the manufacturer for recycling or disposed of at an approved hazardous waste disposal facility. The disturbance, control or disposal of mercury-containing materials/equipment should be carried out in accordance with applicable criteria/regulations (refer to Section 1.6 of this report). The presence/absence of mercury in these materials should be confirmed through a contractor or consultant prior to disturbance or disposal of these materials. Typically, these materials are sent to a recycling or hazardous waste disposal facility and not a landfill.

4.4.8 Potential PCB-Containing Materials/Equipment

According to the USEPA, PCBs may be present in caulking used in windows, door frames, masonry columns and other building materials in buildings built or renovated between 1950 and 1979. In addition, insulating fluids and cooling oils in electrical equipment (i.e., transformers, fluorescent light ballasts, capacitors, etc.) often contained PCBs until around 1980.

If PCB-containing materials or equipment are encountered in the future, and should disposal be required, the PCB content in the materials or equipment should be confirmed prior to disposal. Any leaking light ballasts identified, whether PCB containing or not, should be removed and replaced to avoid potential concerns with electrical equipment in the future. All ballasts that are removed should be placed in a proper storage container(s). Leaks or stained areas should be cleaned and/or removed in accordance with applicable regulations or industry standards. Florescent lights are present inside the accommodations cabin.

Any PCB-containing equipment (if present) should be handled, decontaminated, transported and disposed of as per current Federal and Provincial acts and regulations. Any PCB-containing equipment requiring removal from the building should be transported and disposed of at an approved hazardous waste disposal site, and not a landfill disposal site, by a registered hazardous waste transporter in accordance with applicable regulations.

4.4.9 Silica Containing Materials

Silica is expected to be present in concrete used in the construction of the foundation for the accommodations cabin. Silica may also be present in asphalt shingles used in the construction of accommodations cabin. Precautions should be taken to prevent/reduce exposure to silica dust during any disturbance/ demolition of silica-containing products, such as wetting the surface of the materials to prevent dust emissions, donning respiratory protection, and cleaning tools and clothing prior to exiting work areas. Activities involving the disturbance and/or demolition of silica-containing materials should be carried out in a manner that ensures silica dust concentrations do not exceed the applicable ACGIH TLV.

4.4.10 Potential Radioactive Materials

Smoke detectors were not observed during the Pre-Demolition HBMA site visit. Smoke detectors observed may contain very small amounts of radioactive material (i.e., Americium 241). Smoke alarms that use radioactive material incorporated in an ionization chamber are called "ion chamber smoke alarms".

4.4.11 Summary of Findings

Hazardous building materials identified at Hungry Grove Camp during this Pre-Demolition HBMA and disposal options, if required, are summarized in Table 4-5. Conclusions and recommendations made with respect to the potential and actual presence of hazardous building materials within the accommodations cabin and outhouse are provided in Section 4.4 and should be reviewed in conjunction with Table 4-5.

Table 4-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
ACMs	NL Asbestos Abatement Regulations (Reg. 111/98)	None identified at locations sampled. Note that other possible hidden and inaccessible ACMs have the potential to be present within the accommodations building but were not identified during the Pre-Demolition HBMA site visit.	ACMs cannot be disposed of at a Construction & Demolition Site; however, these materials can be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility. The transportation and disposal of asbestos should be conducted in accordance with the NL Asbestos Abatement Regulations (Reg. 111/98) and with Standard Operating Procedures (SOPs) for disposal of ACMs at the landfill.
LBPs	Guidance Document for Leachable Toxic Waste and Disposal (GD-PPD-26.1) Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Surface Coating Materials Regulations (SOR/2016-193)	LBP (grey) on plywood floor of accommodations cabin. LBP (grey) on plywood exterior of outhouse.	Paints that were analyzed for lead and contained <5,000 mg/kg lead, may be disposed of at a Regional Solid Waste Disposal Facility (landfill), provided permission is obtained from the landfill owner/operator.
Potential UFFI	Federal HPA (R.S.1985, c. H-3)	None Identified	UFFI is permitted to be bagged and transported to an approved WDS and disposed in the special waste area of the site.

Table 4-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
Mould	Mould Guidelines for the Canadian Construction Industry, Canadian Construction Industry (CCI), 2004; Mould Abatement Guidelines, Environmental Abatement Council of Ontario (EACO), 2010	Bulk sample MP-MS1 contained Myxomycete-like, Monodictys-like and Septonema Aspergillus mould with sparse to moderate growth in the accommodations cabin. Quantity unknown.	All mould impacted materials may be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility.
Potential ODS	Federal Halocarbon Regulations (SOR/2003-289)	R12 refrigerant in freezer in Room 1.	Materials containing ODS should be received by a contractor or facility that has the proper approvals to remove, handle and/or dispose of ODS. The remaining materials can be disposed of at a recycling facility, provided permission is obtained from the facility.
Potential Lead-Containing Materials/ Equipment	Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149) Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301)	Potential lead-containing solder (i.e. copper piping for propane and fuel oil in the accommodations cabin).	Lead-containing materials and equipment can be disposed of at a metal recycling or hazardous waste disposal facility, in accordance with applicable regulations. The transportation and disposal of hazardous lead-containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.
Potential Mercury-Containing Materials/ Equipment	Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Products Containing Mercury Regulations (SOR/2014-254)	None identified	Mercury-containing materials and equipment can be disposed of at a recycling or hazardous waste disposal facility, in accordance with applicable regulations. The transportation and disposal of hazardous mercury-containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.

Table 4-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
Potential PCB-Containing Materials/ Equipment	Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149) Federal TDG Act (1992, c. 34) Guidance Document for Leachable Toxic Waste and Disposal (GD-PPD-26.1) Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301) PCB Regulations (SOR/2008-273) PCB Waste Export Regulations (SOR/97-109) Regulations Amending the PCB Regulations (SOR/2010-57)	None identified. Note that only one florescent light ballast was inspected as part of the HBMA. All light ballast should be inspected for PCBs prior to removal and disposal.	Any PCB-containing materials and equipment should be handled, decontaminated, transported and disposed of as per current Federal and Provincial acts and regulations. Any PCB-containing materials and equipment requiring removal from the building should be transported and disposed of by a registered hazardous waste transporter in accordance with applicable regulations. The transportation and disposal of PCB containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.
Silica-Containing Materials	NL OHS Act (RSNL1990 Chapter O-3) NL OHS Regulations (5/12)	Asphalt shingles and concrete.	These materials can be disposed of at a Regional Solid Waste Disposal Facility (landfill).
Potential Radioactive Materials	Federal TDG Act (1992, c. 34)	None Identified	Smoke detectors that contain low level radioactive materials must be transported, as per Federal TDG Regulations, to a licensed disposal facility.

APPENDIX A4

FIGURES

<u>NOTES</u>:

1. ALL DIMENSIONS ARE IN METERS.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF NEWFOUNDLAND LABRADOR HYDRO AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.

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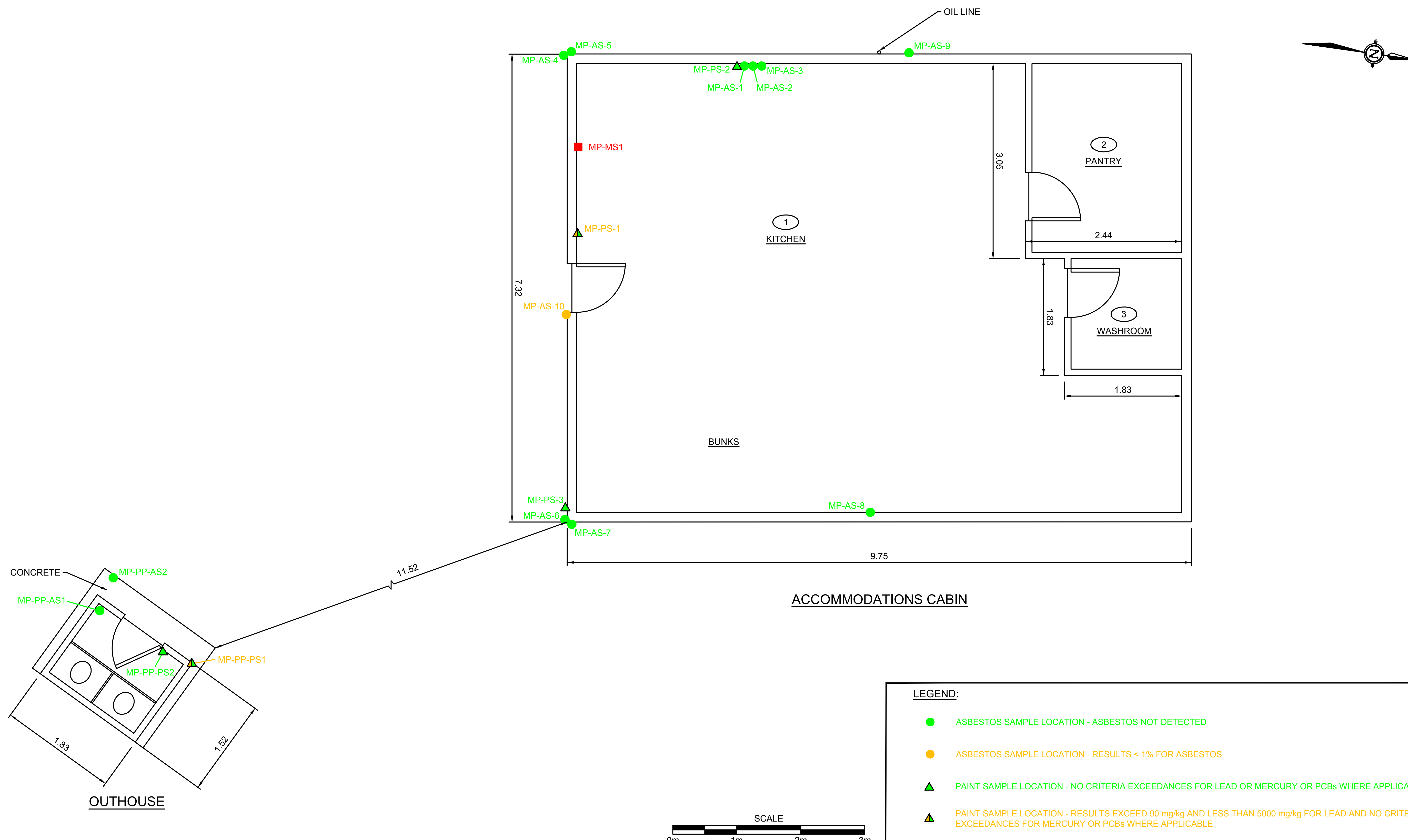
Drawn by:	T. Rideout
Approved by:	C. Finney
Scale:	As Shown
Project:	Pre-Demolition Hazardous Building Materials Assessment, Former Construction Camp Sites, Bay d'Espoir - Avalon Transmission Line, NL
Title:	Site Location Plan (Aerial) - Mitchell's Pond Camp Site
Date:	April 2019
Project No.	TF18104243.2000
Rev. No.	0
Figure No.	4.1



LEGEND:

- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED
- ASBESTOS SAMPLE LOCATION - RESULTS < 1% FOR ASBESTOS
- PAINT SAMPLE LOCATION - NO CRITERIA EXCEEDANCES FOR LEAD OR MERCURY OR PCBs WHERE APPLICABLE
- PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY OR PCBs WHERE APPLICABLE
- SPARSE TO MODERATE MOULD GROWTH DETECTED

NOTES:

1. ALL DIMENSIONS ARE IN METERS.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
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Drawn by:	T. Rideout
Approved by:	C. Finney
Scale:	As Shown
Project:	Pre-Demolition Hazardous Building Materials Assessment, Former Construction Camp Sites, Bay d'Espoir - Avalon Transmission Line, NL
Title:	Sample Location Plan - Mitchell's Pond Camp Site
Date:	April 2019
Project No.	TF18104243.2000
Rev. No.	0
Figure No.	4.2

APPENDIX B4

PHOTOGRAPHIC RECORD


Photo 1: View of the accommodations cabin at Mitchell's Pond Camp, looking northeast.


Photo 2: View of the accomodations cabin at Mitchell's Pond Camp, looking north.


Photo 3: View of the accommodations cabin at Mitchell's Pond Camp, looking north.


Photo 4: View of the kitchen area of the accommodations cabin at Mitchell's Pond Camp.

Photo 5: View of the bunk area of the accommodations cabin at Mitchell's Pond Camp.

Photo 6: View of the pantry area at Mitchell's Pond Camp.

Photo 7: View of the bathroom at Mitchell's Pond Camp.

Photo 8: View of the outhouse at Mitchell's Pond Camp.

Photo 9: View of the interior of the outhouse at Mitchell's Pond Camp.

Photo 10: View of the cavity inspection in the interior wall of Room 1 at Mitchell's Pond Camp.

Photo 11: View of attic of accommodations cabin at Mitchell's Pond Camp.

Photo 12: View of cavity inspection in the wall of the exterior of the accommodations cabin at Mitchell's Pond Camp.

Photo 13: View of floor cavity inspection at the the accommodations cabin at Mitchell's Pond Camp.

Photo 14: View of bulk material sample MP-AS1, foil with paper backing, Room 1.

Photo 15: View of bulk material sample MP-AS2, black pressboard, Room 1.

Photo 16: View of bulk material sample MP-AS3, tar paper, cabin exterior.

Photo 17: View of bulk material sample MP-AS4, red brick, cabin exterior.

Photo 18: View of bulk material sample MP-AS5, grey mortar, cabin exterior.

Photo 19: View of bulk material sample MP-AS6, grey mortar, cabin exterior.

Photo 20: View of bulk material sample NP-AS7, concrete block, cabin exterior.

Photo 21: View of bulk material sample MP-AS8, shingle and tar, cabin exterior.

Photo 22: View of bulk material sample MP-AS9, red sealant, cabin exterior.

Photo 23: View of bulk material sample MP-AS10, white caulking, cabin exterior.

Photo 24: View of bulk material sample MP-PP-AS1, black shingle and tar, cabin exterior.

Photo 25: View of bulk material sample MP-PP-AS2, concrete, outhouse exterior.

Photo 26: View of paint sample MP-PS1, grey, cabin interior.

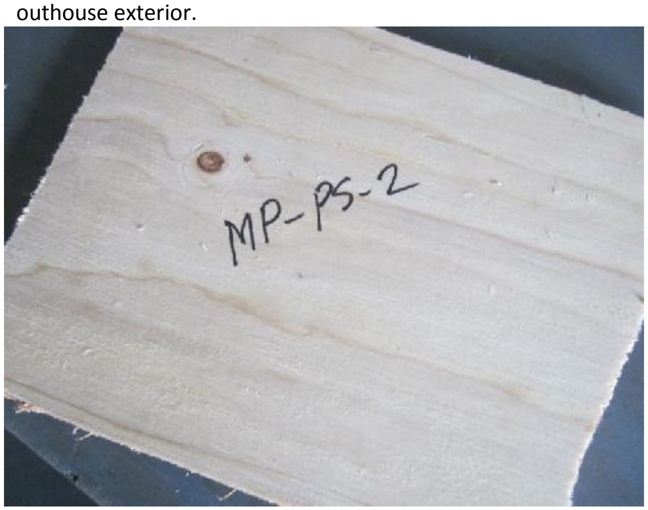

Photo 27: View of paint sample MP-PS2, white, cabin interior.

Photo 28: View of paint sample MP-PS3, white, cabin exterior.

Photo 29: View of paint sample MP-PP-PS1, grey, outhouse exterior.

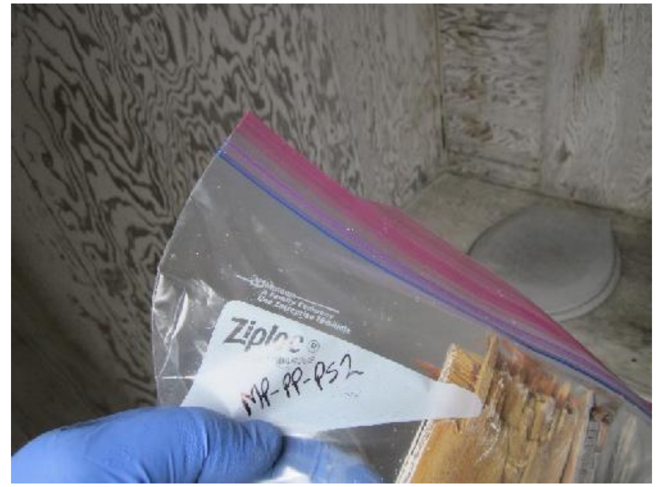

Photo 30: View of paint sample MP-PP-PS2, white, outhouse interior.

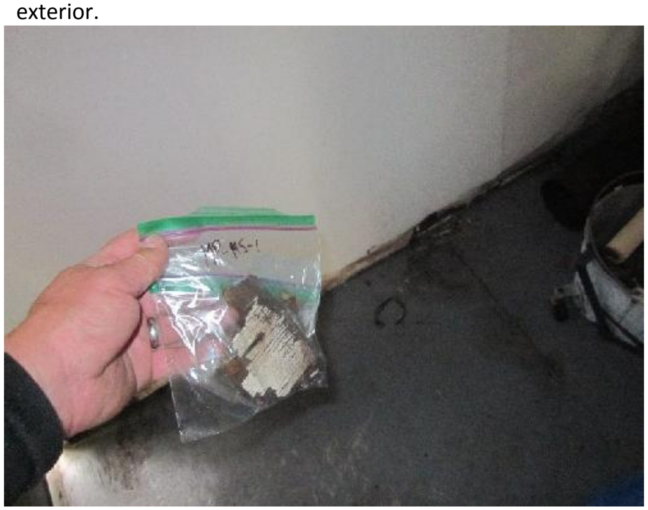

Photo 31: View of mould sample MP-MS1, cabin interior.

Photo 32: View of oil fired heater, cabin interior.

Photo 33: View of fluorescent light ballast, cabin interior.

Photo 34: View of freezer, containting R12 refridgerant, cabin interior.

Photo 35: View of kitchen sink plumbing, cabin interior.

Photo 36: View of electrical panel, cabin interior.

APPENDIX C4

SAMPLE AND ANALYTICAL SUMMARY TABLES

Table C4-1: Bulk Sample Descriptions and Asbestos Analytical Results (Mitchell's Pond Camp)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Sample Description	Layers Analyzed	Analytical Result
MP-AS1	1	Kitchen	14	Interior Wall	Foil with paper backing	Foil and paper backing	ND
MP-AS2	1	Kitchen	15	Interior Wall	Black pressboard	Pressboard	ND
MP-AS3	1	Kitchen	16	Interior Wall	Tar paper	Tar paper	ND
MP-AS4	Exterior	Exterior - Cabin	17	Wall	Red brick	Brick	ND
MP-AS5	Exterior	Exterior - Cabin	18	Wall	Grey mortar on red brick	Mortar	ND
MP-AS6	Exterior	Exterior - Cabin	19	Foundation	Grey mortar on concrete block	Mortar	ND
MP-AS7	Exterior	Exterior - Cabin	20	Foundation	Concrete block	Concrete	ND
MP-AS8	Exterior	Exterior - Cabin	21	Roof	Black shingle and black tar	Shingle and tar	ND
MP-AS9	Exterior	Exterior - Cabin	22	Chimney	Red sealant	Sealant	ND
MP-AS10	Exterior	Exterior - Cabin	23	Vent	White caulking	Caulking	<0.25%
MP-PP-AS1	Exterior	Exterior - Outhouse	24	Roof	Black shingle and black tar	Shingle and tar	ND
MP-PP-AS2	Exterior	Exterior - Outhouse	25	Foundation	Concrete	Concrete	ND

Notes:

ACM: Asbestos-Containing Material

DJC: Drywall Joint Compound

VFT: Vinyl Floor Tile

VSF: Vinyl Sheet Flooring

ND: Non-Detect (<0.1%)

*Brown paper and tar analyzed as one layer because the laboratory could not separate these materials.

Bold and underlined value indicates asbestos was detected but is below 1% by dry weight.

Shaded value exceeds 1% asbestos by dry weight and is considered to be an ACM as outlined in the Newfoundland and Labrador Asbestos Abatement Regulations (Reg. 111/98).

Table C4-2: Paint Sample Descriptions and Lead Analytical Results (Mitchell's Pond Camp)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Lead (mg/kg)
MP-PS1	1	Kitchen	26	Floor	Plywood	Grey on plywood (sample includes plywood)	15.0	**199**
MP-PS2	1	Kitchen	27	Wall	Plywood	White on plywood (sample includes plywood)	15.0	56
MP-PS3	Exterior	Cabin Exterior	28	Exterior	Wood	White on wood trim (sample includes wood)	15.0	18
MP-PP-PS1	Exterior	Outhouse Exterior	29	Wall	Plywood	Grey on wood (sample includes wood)	15.0	**205**
MP-PP-PS2	Interior	Outhouse Interior	30	Exterior	Plywood	White on Plywood (sample includes plywood)	15.0	<15

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

HPA: Hazardous Products Act

Bold and underlined value exceeds Federal HPA criterion (90 mg/kg).

Shaded value exceeds former Federal HPA criterion (5,000 mg/kg).

Table C4-3: Paint Sample Descriptions and Mercury Analytical Results (Mitchell's Pond Camp)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Mercury (mg/kg)
MP-PS1	1	Kitchen	26	Floor	Plywood	Grey on plywood (sample includes plywood)	0.05	0.20
MP-PS2	1	Kitchen	27	Wall	Plywood	White on plywood (sample includes plywood)	0.05	0.08
MP-PS3	Exterior	Cabin Exterior	28	Exterior	Wood	White on wood trim (sample includes wood)	0.05	<0.05
MP-PP-PS1	Exterior	Outhouse Exterior	29	Wall	Plywood	Grey on wood (sample includes wood)	0.05	0.10
MP-PP-PS2	Interior	Outhouse Interior	30	Exterior	Plywood	White on Plywood (sample includes plywood)	0.05	<0.05

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

HPA: Hazardous Products Act

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guideline

Bold and underlined value exceeds Federal HPA criterion (10 mg/kg).

Shaded value exceeds CCME CSQG for an industrial site (50 mg/kg).

Table C4-4: Paint Sample Descriptions and PCB Analytical Results (Mitchell's Pond Camp)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Total PCB (mg/kg)
MP-PS1	1	Kitchen	26	Floor	Plywood	Grey on plywood (sample includes plywood)	0.5	<0.5
MP-PS2	1	Kitchen	27	Wall	Plywood	White on plywood (sample includes plywood)	0.5	<0.5
MP-PS3	Exterior	Cabin Exterior	28	Exterior	Wood	White on wood trim (sample includes wood)	0.5	<0.5
MP-PP-PS1	Exterior	Outhouse Exterior	29	Wall	Plywood	Grey on wood (sample includes wood)	0.5	<0.5
MP-PP-PS2	Interior	Outhouse Interior	30	Exterior	Plywood	White on Plywood (sample includes plywood)	0.5	<0.5

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guideline

NL MAE: Newfoundland and Labrador Department of Municipal Affairs and Environment

TDG: Transportation of Dangerous Goods

#Sample collected by Hydro on May 5, 2018.

Bold and underlined value exceeds CCME CSQG for an industrial site (33 mg/kg).

Shaded value exceeds the criterion for PCB solid provided in the NL MAE Leachable Toxic Waste, Testing and Disposal Guidance Document and the TDG Regulations (50 mg/kg).

Table C4-5: Bulk Sample Descriptions and Mould Analytical Results (Mitchell's Pond Camp)

Sample ID	Detailed Material Description	Sample Location	Mould Identified	Analytical Result
MP-MS1	Wood trim on wall	Room 1	*Myxomycete*- like *Monodictys*- like *Septonema Aspergillus*	Sparse to Moderate

Notes:

1. Mould growth is subjectively assessed with description terms sparse, moderate and abundant.
2. The presence of spores (lacking other fungal structures associated) is assessed as following: a few spores (< 10 spores average per microscopic field at 400X). some spores (10 - 100 spores average per microscopic field at 400X), many spores (> 100 spores average per microscopic field at 400X).
3. The presence of a few spores generally represents settled spores on the surface of the sample rather than indicating mould growth.

APPENDIX D4

ROOM-BY-ROOM INSPECTION SHEETS

Building	Room #	Floor #	Room Description	Dimensions
Mitchells Pond.	1	1	Kitchen	L = 32' W = 24' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Wood			
Walls (include window caulking)	Wood			
Ceiling	Wood.			
Paint (and substrate)	Walls: White Ceiling: White Floor: Grey Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	— Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: 2 → 1'x4' 2bulb Gold Label 17A240E	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	4 → incandescent			
Thermostats	Manufacturer Colour, Shape — Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	Copper water + propane lines.			
Mould / Water Staining	Area impacted			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext Deepfreeze, General freezer, Model G-7-I-L, SN FB04053			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
Mitchells Pond	2	1	Pantry / Porch	L = 10' W = 8' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Wood			
Walls (include window caulking)	Wood			
Ceiling	Wood			
Paint (and substrate)	Walls: Ceiling: Same Floor: Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	— Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	1 incandescent			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted — Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	—			
Mould / Water Staining	Area impacted —			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext —			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
Mitchells Pond	3	1	Washroom	L = 6' W = 6' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Wood			
Walls (include window caulking)	Wood			
Ceiling	Wood			
Paint (and substrate)	Walls: Ceiling: Same Floor: Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	Fire Door Manufacturer: – Fire Door Serial #:			
Piping / Mechanical Equipment	–			
Fluorescent Lighting	Ballast Manufacturer: Serial #: –	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	1 Incandescent			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted – Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	–			
Mould / Water Staining	Area impacted –			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext –			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials –			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
Mitchells Pond			Exterior	L = 32' W = 24' H =

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
~~Floor~~ Foundation	Cinderblock			
Walls (include window caulking)	Red Brick			
Ceiling	Black shingles.			
Paint (and substrate)	Walls: Ceiling: Floor: — Other:			
Insulation (Piping/Mechanical/Wall/Ceiling/Ducting)	— Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	2 - incandescent			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	/			
Mould / Water Staining	Area impacted			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext —			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
Mitchells Pond			Outhouse	L = 6' W = 5' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Concrete + Wood			
Walls (include window caulking)	Wood			
Ceiling	Wood Felt on roof.			
Paint (and substrate)	Walls: Grey (Ext) Ceiling: White (int) Floor: Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	— Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)				
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,				
Mould / Water Staining	Area impacted			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

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APPENDICES

5.0 HUNGRY GROVE POND CAMP

Hungry Grove Camp is located approximately 47 km east of the Town of Milltown-Head of Bay d'Espoir and is accessed via gravel access road from the Bay d'Espoir Highway (Route 360) (refer to Figure 5.1, Appendix A5 and Photos 1 to 8, Appendix B5). The site is comprised of an accommodations cabin and an outhouse.

At the time of the Pre-Demolition HBMA site visit, a thorough assessment of the interior of the accommodations cabin was not possible due to unsafe conditions that resulted from the presence of a large quantity of bats occupying the structure and an abundance of bat feces. As a result, there is limited information available concerning the presence/absence of hazardous building materials and equipment present within the cabin. Observations were recorded from the doorway and windows of the cabin, where possible. Please refer to hazardous building materials observed at other Former Construction Camp Sites assess along the former Bay d'Espoir – Avalon Transmission Line.

5.1 BUILDING DESCRIPTION

The accommodations cabin is a one-storey, rectangular structure with a footprint area of approximately 65 m^2. The floor plan of the cabin consists of a kitchen with sleeping areas, and three additional rooms (refer to Figure 5.2, Appendix A5). The foundation of the accommodations cabin consists of concrete block footings. The structure of the accommodations cabin consists of brick. The exterior walls on the accommodations cabin are finished with brick and the roof is finished with asphalt shingles. The window and exterior door openings on the accommodations cabin are barricaded with metal covers for security purposes. There were building upgrades completed at the site, reportedly in the mid 1990's. The new areas are brown brick and the original areas are red brick (refer to Photos 1 to 4, Appendix B5). Interior wall and ceiling finishes in the accommodations cabin consists of painted plywood. Floors/floor finishes consist of plywood. Incandescent and fluorescent lighting was observed on the interior of the cabin. The accommodations cabin is not currently heated.

The outhouse is a one-storey, rectangular structure with a footprint area of approximately 3 m^2. The foundation and structure of the outhouse consists of wood framing and concrete. The exterior walls on the outhouse are finished with plywood and the roof is finished with asphalt shingles (refer to Photos 7 to 9, Appendix B5). Interior wall and ceiling finishes in the outhouse consist of painted plywood. Floor finishes consist of plywood. The outhouse does not contain any lighting or heating.

A description of accommodations cabin is outlined in Table 5-1 and a description of the outhouse is outlined in Table 5-2. Photographs of the buildings are provided in Appendix B5.

Table 5-1: Site Building Description – Accommodations Cabin

Building Name	Accommodations cabin	Photo No. (Appendix B5)
Date of Construction	Approximately late 1960's/early 1970's	-
Date of Renovations	Unknown	-
No. of Stories	One	1 to 4
Crawl Space (Yes/No)	No	-
Attic (Yes/No)	Yes	10
Type of Structure	Wood Frame and Bricks	1 to 4
Type of Foundation	Concrete Block Footings	11

Table 5-1: Site Building Description – Accommodations Cabin

Building Name	Accommodations cabin	Photo No. (Appendix B5)
Exterior	Red and Brown brick	1 to 4
Window/Door Frames	Painted Metal and Wood	1
Exterior Doors	Painted Metal	1
Roofing Materials	Asphalt Shingles	3 and 20
Interior Walls Finishes	Painted Plywood	5 and 6
Interior Ceiling Finishes	Painted Plywood	5 and 6
Floor Finishes	Painted Plywood	5 and 6
Interior Doors	NA	-
Interior Lighting	Fluorescent and Incandescent	5 to 6
Exterior Lighting	Incandescent	1
Heating	NA	-

Table 5-2: Site Building Description – Outhouse

Building Name	Outhouse	Photo No. (Appendix B4)
Date of Construction	Approximately late 1960's/early 1970's	-
Date of Renovations	Unknown	-
No. of Stories	One	7 and 8
Crawl Space (Yes/No)	No	-
Attic (Yes/No)	No	-
Type of Structure	Plywood Frame	7 and 8
Type of Foundation	Concrete and Wood Frame	7
Exterior	Plywood	8
Window/Door Frames	NA	-
Exterior Doors	NA	-
Roofing Materials	Asphalt Shingles	27
Interior Walls Finishes	Painted Plywood	8
Interior Ceiling Finishes	Plywood	-
Floor Finishes	NA	-
Interior Doors	NA	-
Interior Lighting	NA	-
Exterior Lighting	NA	-
Heating	NA	-

5.2 ROOM DESIGNATION

Each room at Hungry Grove Camp was assigned a specific room name. The designated room names are presented in Table 5-3 and graphically illustrated on the sample location plan (refer to Figure 5.2, Appendix A5).

Table 5-3: Assigned Rooms

Level No.	Room Name – Accommodations Cabin	Room Number
1	Kitchen/Bunk Area	Room 1
1	Unknown	Room 2
1	Unknown	Room 3
1	Unknown	Room 4
1	Outhouse	Outhouse

5.3 FINDINGS

The findings documented in this section are based on observations made by Wood personnel at the time of the site visit on August 7, 2018 and the results of laboratory analyses of samples collected from Hungry Grove Camp. During the Pre-Demolition HBMA site visit, Wood personnel were accompanied by a representative of Hydro (Mr. Wayne Lidster). Copies of room-by-room inspection sheets for the accommodations building and outhouse are provided in Appendix D5. Photos of the samples collected from the accommodations building and outhouse during the site visits are provided in Appendix B5.

As previously stated in Section 5.0, a thorough assessment of the interior of the accommodations cabin was not possible due to unsafe conditions that resulted from the presence of a large quantity of bats occupying the structure and an abundance of bat feces (i.e. unsafe access conditions).

5.3.1 Asbestos-Containing Materials (ACMs)

There are over 3,000 ACMs that are commercially available, which can be divided into two broad categories: friable and non-friable. ACMs were discontinued from use in Canada in the late 1970s/early 1980s, although non-friable asbestos is still found in many more recent buildings.

During the Pre-Demolition HBMA site visit, a total of 13 building material samples (HG-AS1 to HG-AS13) were collected from the accommodations cabin and two building material samples (HG-PP-AS1 and HG-PP-AS1) were collected from the outhouse (refer to Photos 13 to 27, Appendix B5) and analyzed for asbestos content. Bulk sample descriptions and asbestos analytical results are summarized in Table C5-1, Appendix C5. Sample locations and analytical results are graphically illustrated on Figure 5.2, Appendix A5.

5.3.1.1 Friable Materials

Friable ACMs are defined as materials that can be crumbled, pulverized and reduced to powder when dry using hand pressure. Typical friable materials include acoustical or decorative spray applications, fireproofing and thermal insulation.

5.3.1.1.1 Spray-Applied Fireproofing, Insulation and Texture Finishes

There were no spray-applied fireproofing, insulation or texture finishes observed in the accommodations cabin or outhouse during the Pre-Demolition HBMA site visit; therefore, no samples of these materials were collected for analysis.

5.3.1.1.2 Building and Thermal System Insulation

During the Pre-Demolition HBMA site visit, pink fiberglass insulation was observed between the particle board and plywood in the walls of the accommodations cabin. No samples of fiberglass insulation materials were collected for analysis.

5.3.1.2 Non-Friable and Potentially Friable Materials

Non-friable ACMs are hard or manufactured products such as floor tiles, fire blankets, pre-formed manufactured cementitious insulation and wallboards, pipes, and siding, wherein the asbestos fibres are bound to the substrate. Note that although a product may be considered non-friable when new, the product may release fine dust when disturbed (e.g., deterioration, removal, renovations) and the free dust is considered friable.

5.3.1.2.1 Ceiling Tile

There were no ceiling tiles observed at Hungry Grove Camp during the Pre-Demolition HBMA site visit; therefore, no samples of ceiling tile were collected for analysis.

5.3.1.2.2 Drywall Joint Compound

There was no drywall joint compound observed at Hungry Grove Camp during the Pre-Demolition HBMA site visit; therefore, no samples of drywall joint compound were collected for analysis.

5.3.1.2.3 Vinyl Flooring Products and Mastics

There was no vinyl flooring or products observed at Hungry Grove Camp during the Pre-Demolition HBMA site visit; therefore, no samples of vinyl flooring or products were collected for analysis.

5.3.1.2.4 Baseboard, Carpet and Stair Tread Adhesives/Mastics

There were no baseboard, carpet or stair tread adhesives/mastics observed at Hungry Grove Camp during the Pre-Demolition HBMA site visit; therefore, no samples of these types of adhesives/mastics were collected for analysis.

5.3.1.2.5 Roofing Products

During the Pre-Demolition HBMA site visit, one (1) sample of black shingle and tar (HG-AS9) was collected from the roof of the accommodations cabin and one (1) sample of black shingle and tar (HG-PP-AS2) was collected from the roof of the accommodations cabin and analyzed for asbestos content (refer to Photo 21 and 27, Appendix B5). Asbestos was detected in HG-AS9 containing 4.8 % chrysotile asbestos. According to the NL asbestos abatement regulations (Reg. 111/98), this material is considered asbestos-containing materials. Asbestos was not detected in the other shingle and tar sample collected from the outhouse.

Given that the accommodations cabin and outhouse were most likely constructed at the same time and it possible that same roof materials (asphalt shingles and tar) were used on both buildings, for the purpose of this HBMA, it has been assumed that the asphalt shingles on the outhouse are also asbestos-containing.

It is important to note that, due to height and safety constraints, no samples of roofing, building materials around roof penetrations (e.g., caulking or sealants around vents or electrical conduit) or roof seams were collected from the accommodations cabin for analysis.

5.3.1.2.6 Caulking/Sealant

During the Pre-Demolition HBMA site visit, one (1) sample of white caulking (HG-AS3) was collected from around the brick on the accommodations cabin, one (1) sample of black caulking (HG-AS8) was collected from the flashing on the roof of the accommodations cabin, and one (1) sample of red sealant (HG-AS10) was collected from previous location of the chimney on the accommodations cabin, and analyzed for asbestos content (refer to Photos 15, 20 and 22, Appendix B5). Asbestos was not detected in the caulking/sealant samples analyzed.

5.3.1.2.7 Mortar, Grout and Other Cementitious Materials

During the Pre-Demolition HBMA site visit, one (1) sample of brown brick (HG-AS1), one (1) sample of grey mortar on brown brick (HG-AS2), one (1) sample of grey mortar on red brick (HG-AS4), one (1) sample of red brick (HG-AS5), one (1) sample of concrete (HG-AS6) and one (1) sample of grey mortar on concrete (HG-AS7) were collected from the exterior of the accommodations cabin and one (1) sample of concrete (HG-PP-AS1) was collected from the foundation of the outhouse and analyzed for asbestos content (refer to Photos 13, 14, 16, 17, 18, 19 and 26, Appendix B5). Asbestos was not detected in the brick, concrete and mortar samples analyzed.

5.3.1.2.8 Fire-Rated Doors

Fire-rated doors and door frames were not observed during the Pre-Demolition HBMA site visit.

5.3.1.2.9 Other Potential ACMs

During the Pre-Demolition HBMA site visit, two (2) samples of tar paper (HG-AS11 and HG-AS13) and one (1) sample of black pressed board (HG-AS-12) were collected from the exterior of the accommodations building and analyzed for asbestos content (refer to Photo 23 to 25, Appendix B5). Asbestos was not detected in the pressed board or tar paper samples analyzed.

Other potential ACMs were observed (or suspected to be present) and were not sampled due to the nature of the materials and/or hazards associated with sampling these materials. These materials included, but are not limited to, electrical and mechanical components and insulators such as wiring and gaskets, heat shields inside incandescent/fluorescent light fixtures, and caulking or sealants around or along roof seams, vent pipes, electrical conduits or other penetrations (refer to Photos 1, 5, and 6, Appendix B5).

Other possible hidden and inaccessible ACMs have the potential to be present within the accommodations cabin but were not identified during the Pre-Demolition HBMA site visit. These possible ACMs could include possible fireproofing materials in the wall or ceiling cavities, piping/pipe joint sealants/gaskets and packing associated with cast iron pipe joints, fire rated structures or building materials, vapour barriers in walls, undercoatings on sinks, interior heat resistant components or gaskets inside appliances, concrete lining the interior of hot water tanks, and underground infrastructure or piping.

5.3.2 Paint Additives

Lead compounds have been used in paint as pigment and durability additives since the early 1800s. Mercury compounds have been used in paint as anti-microbial additives up until the 1990s. PCBs have been used in paint as plasticizers and corrosion resistance additives from the 1950s to the 1970s.

During the Pre-Demolition HBMA site visit, two (2) samples (HG-PS1 and HG-PS2) were collected from painted surfaces of the accommodations cabin and one (1) sample (HG-PP-PS1) collected from painted surfaces of the outhouse and analyzed for lead, mercury and PCB content (refer to Photos 28 to 30,

Appendix B5). Paint sample descriptions and lead, mercury and PCBs analytical results are summarized in Tables C5-2 to C5-4, Appendix C5. Sample locations and analytical results are graphically illustrated on Figure 5.2, Appendix A5.

5.3.2.1 Lead in Paint

Concentrations of lead in the two (2) samples (HG-PS1 and HG-PS2) collected from painted surfaces of the accommodations cabin and one (1) sample (HG-PP-PS1) collected from the outhouse ranged from 228 mg/kg to 868 mg/kg (refer to Table C5-2, Appendix C5). All three paint samples contained lead at concentrations above the Federal HPA criterion of 90 mg/kg and below the former Federal HPA criterion of 5,000 mg/kg.

5.3.2.2 Mercury in Paint

Concentrations of mercury in the two (2) samples (HG-PS1 and HG-PS2) collected from painted surfaces of the accommodations cabin and one (1) sample (HG-PP-PS1) collected from the outhouse ranged from 0.09 to 0.55 mg/kg, therefore, the concentrations of mercury in these samples were below the Federal HPA criterion (10 mg/kg) (refer to Table C5-3, Appendix C5).

5.3.2.3 PCBs in Paint

PCBs were not detected (<0.5 mg/kg), and therefore, were below the CCME CSQG for PCBs in soil at an industrial site (33 mg/kg) and the applicable criterion for PCB solid (50 mg/kg) (refer to Table C5-4, Appendix C5.

5.3.3 Urea Formaldehyde Foam Insulation (UFFI)

Visual indicators suggesting the potential presence of UFFI were not observed at Hungry Grove Camp. The nature of the insulation in the walls and ceilings throughout the accommodations cabin consisted of fiberglass insulation.

Since the original date of construction of Hungry Grove Camp (assumed construction commenced the same timeframe as the original transmission line, late 1960's/early 1970's) is unknown, it is possible that UFFI may be present.

In the event that UFFI is present, the CMHC state that "tests show that UFFI is not a source of over-exposure to formaldehyde after the initial curing and release of excess gas". The general view based on studies concerning formaldehyde emissions is that as a product ages, the amount of formaldehyde off-gassed from the product decreases over time. The amount of formaldehyde released is reportedly dependent on temperature, humidity and whether or not the product is exposed to excessive moisture or water.

5.3.4 Suspected Visible Mould Growth (SVG)

Wood inspected the interior areas of the accommodations cabin and outhouse for visual or olfactory evidence of suspected mould. SVG was noted on much of the ceiling and wall surfaces inside the accommodations cabin, observed from the entrance, during the Pre-Demolition HBMA site visit. Due to presence of bats and bat feces on the surfaces of the accommodations cabin, it was unsafe to enter the building to obtain a sample (refer to Photos 5 and 6, Appendix B5).

5.3.5 Mercury-Containing Thermostats

Thermostats were not identified inside the accommodations cabin at Hungry Grove Camp during the Pre-Demolition HBMA site visit, as observed from the exterior of the cabin. Based on inspections of other similar cabins along the transmission line, it is unlikely that there are any thermostats present.

5.3.6 PCB-Containing Light Ballasts

Fluorescent and incandescent light fixtures were observed on the interior of the accommodations cabin, as observed from the exterior of the cabin, during the Pre-Demolition HBMA site visit (refer to Photos 5 and 6, Appendix B5). No light ballasts were inspected during the Pre-Demolition HBMA site visit.

5.3.7 Potential Sources of ODS and Halocarbons

Wood were no able to assess whether or not there were potential sources of ODS within accommodations cabin, as observed from the exterior of the cabin, during the Pre-Demolition HBMA site visit.

5.3.8 Other Potentially Hazardous Building Materials or Substances

Other potentially hazardous building materials or substances identified during this assessment are presented in the following sections.

5.3.8.1 Lead-Containing Materials and Equipment

Lead is typically associated with plumbing solder and older pipe materials (e.g., cast iron pipe joints), as well as products such as radiation protective shielding and lead-acid batteries. Lead can also be present in steel and iron primer, industrial electrical jacketing, roof flashing and tank linings.

Since the actual date that Hungry Grove Camp was constructed is unknown (assumed to be late 1960’s/early 1970’s), it is possible that lead solder is present in any plumbing and piping (i.e., cast iron and copper piping) in the accommodations cabin, as lead solder for use in potable water distribution pipes was not banned until the late 1980s (refer to Photo 6, Appendix B5).

5.3.8.2 Mercury-Containing Materials and Equipment

The light tubes and bulbs in HID and fluorescent light fixtures often contain limited quantities of mercury in a powder or vapour form. Both incandescent and fluorescent light fixtures were observed on the exterior and the interior of the accommodations cabin during the Pre-Demolition HBMA site visit (Photos 1, 5 and 6, Appendix B5).

5.3.8.3 PCB-Containing Materials and Equipment

According to the USEPA, PCBs may be present in caulking used in windows, door frames, masonry columns and other building materials in buildings built or renovated between 1950 and 1979. In addition, and as mentioned previously, insulating fluids and cooling oils in electrical equipment (i.e., transformers, fluorescent light ballasts, capacitors, etc.) often contained PCBs until around 1980.

5.3.8.4 Treated Wood Chemicals

The chemicals that are used to protect and preserve wood products from insect attack and fungal decay may pose risks to human health and the environment. Depending on the wood treatment used, treated wood may be considered a hazardous waste upon disposal. The NL Department of Environment and Conservation (currently the NL MAE), 2015 Guidance Document for Treated Wood Waste Disposal (GD-PPD-075.1) provides landfill disposal standards for "pressure treated" inorganic preservatives (i.e., arsenic and chromium) and creosote (i.e., total cresol and benzo(a)pyrene) and chlorophenolic (i.e., pentachlorophenol) formulations used to preserve wood. These landfill disposal standards for treated wood waste (TWW) are used to assess the results of leachability testing to determine disposal options for treated wood to be removed during renovation or demolition activities.

Treated wood was not identified during the Pre-Demolition HBMA site visit.

5.3.8.5 Silica

According to the CPWR – The Center for Construction Research and Training, many common construction materials contain silica including, asphalt, brick, cement, concrete, drywall, grout, mortar, stone, sand and tile. The dust created by cutting, grinding, drilling or otherwise disturbing these materials can contain crystalline silica particles.

Based on the Pre-Demolition HBMA site visit, silica is expected to be present in concrete blocks used in the construction of the foundation for the accommodations cabin. Silica may also be present in the asphalt shingles used in the construction of the accommodations cabin and outhouse.

5.3.8.6 Radioactive Materials

Smoke detectors were not observed during the Pre-Demolition HBMA site visit; however, observation of the interior of the accommodations cabin was limited to the doorway and windows, so it is possible that smoke detectors are present. Smoke detectors observed may contain very small amounts of radioactive material (i.e., Americium 241). Smoke alarms that use radioactive material incorporated in an ionization chamber are called "ion chamber smoke alarms".

5.3.8.7 Bat Feces

At the time of the Pre-Demolition HBMA site visit, there was a large quantity of bats occupying the accommodations cabin and an abundance of bat feces present inside the structure.

Employees entering the building and workers involved removing accumulations bat feces are at risk of exposure to airborne fungal spores (and other microbial hazards) likely to be released when this material is disturbed. Bat droppings should be presumed to be contaminated with the fungi *Histoplasma capsulatum, Cryptococcus neoformans*, and other infectious hazards. Many of these microorganisms are known to cause respiratory infections in workers exposed during construction, maintenance or demolition disturbance, and use of property personal protective equipment is recommended (EACO Mould Abatement Guidelines, Edition 3 (2015)).

Materials contaminated with bat feces may be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the owner/operator of the landfill.

5.4 CONCLUSIONS AND RECOMMENDATIONS

Based on observations made and information gathered during the Pre-Demolition HBMA, the following conclusions and recommendations are made with respect to the potential and actual presence of hazardous building materials at Hungry Grove Camp.

5.4.1 ACMs

Results of the asbestos sampling and analytical program revealed building materials containing greater than 1% asbestos by dry weight, which are considered to be ACMs, are present in the form of non-friable black shingle and black tar on the roof of the accommodations cabin.

The asbestos-containing black shingle and tar visible on the roof of the accommodations cabin (approximately 65 m^2), as observed, appeared to be generally intact and in fair condition. Given that the accommodations cabin and outhouse were most likely constructed at the same time and it possible that same roof materials (asphalt shingles and tar) were used on both buildings, for the purpose of this HBMA, it has been assumed that the asphalt shingles on the outhouse (covering an area of approximately 3 m^2) are also asbestos-containing.

Other potential ACMs were observed (or suspected to be present) and were not sampled due to the nature of the materials and/or hazards associated with sampling these materials. These materials included, but are not limited to:

- Electrical and mechanical components and insulators such as wiring and gaskets.
- Heat shields inside incandescent/ fluorescent light fixtures.
- Caulking or sealants around or along roof seams, vent pipes, electrical conduits or other penetrations.

Other possible hidden and inaccessible ACMs have the potential to be present within the buildings at Hungry Grove Camp but were not identified during the Pre-Demolition HBMA site visit. These possible ACMs could include concrete leveling compound (existing concrete foundation), possible fireproofing materials in the wall or ceiling cavities, piping/pipe joint sealants/gaskets and packing associated with cast iron pipe joints, fire rated structures or building materials, vapour barriers in walls, undercoatings on sinks, interior heat resistant components, concrete lining the interior of hot water tanks, and underground infrastructure or piping.

If other potential ACMs that were not sampled as part of this assessment are encountered in the future, these materials should be treated as ACMs or samples should be collected and tested to verify asbestos content. This should be done as soon as these materials are encountered and before these materials are disturbed. This includes materials that are currently concealed by walls and ceiling systems.

In accordance with the NL Asbestos Abatement Regulations (Reg. 111/98), which provide the legislative requirements for safe handling of ACMs in workplaces in the Province of NL, the following is recommended:

- Safe work procedures shall be established.
- All buildings constructed during the period when asbestos was readily used in construction (generally prior to the early 1980s) or any buildings that are suspected as having asbestos must have a written assessment and management plan (where applicable) for potential ACMs.
- Materials suspected of containing asbestos are required to be handled as ACMs, until analysis by a

competent laboratory determines whether or not it does contain asbestos.

- Prior to general demolition, all ACMs must be safely removed from the building and disposed of in accordance with appropriate environmental guidelines by an asbestos abatement contractor registered with the Occupational Health and Safety (OHS) Division of Service NL.
- Most work involving ACMs (i.e., disturbance, removal and encapsulation) must be conducted by a contractor registered with the OHS Division of Service NL.
- ACMs in good condition should be inspected on an annual basis.
- ACMs in poor condition should be removed from the building and transported off-site for proper disposal.
- Workers should don adequate respiratory protection and personal protective equipment (PPE) when working with ACMs.

Prior to the removal and/or abatement of any identified ACMs (or any other hazardous building materials), an abatement plan including technical specifications should be designed, prepared and supervised by a qualified professional and should be undertaken by qualified trades, in accordance with applicable standards. Activities involving the disturbance and/or removal of ACMs should be carried out in a manner that ensures asbestos fiber concentrations do not exceed the applicable American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV). ACMs can be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility.

5.4.2 Lead, Mercury and PCBs in Paint

Results of the paint sampling and analytical program revealed the following:

- **Lead and Leachable Lead in Paint**
  - Concentrations of lead in the two (2) samples (HG-PS1 and HG-PS2) collected from painted surfaces of the accommodations cabin and one (1) sample (HG-PP-PS1) collected from the outhouse ranged from 228 mg/kg to 868 mg/kg.
  - All three (3) paint samples (HG-PS1 and HG-PS2 and HG-PP-PS1) contained lead at concentrations above the Federal HPA criterion of 90 mg/kg and below the former Federal HPA criterion of 5,000 mg/kg; therefore, these paints are considered to be LBPs but are not likely to be leachable for lead.

- **Mercury and Leachable Mercury in Paint**
  - Concentrations of mercury in the two (2) samples (HG-PS1 and HG-PS2) collected from painted surfaces of the accommodations cabin and one (1) sample (HG-PP-PS1) collected from the outhouse ranged from 0.09 to 0.55 mg/kg; below the Federal HPA criterion (10 mg/kg). These paints are not considered to be MBPs and are not likely to be leachable for mercury.

- **PCBs in Paint**
  - PCBs were not detected (<0.5 mg/kg) in the two (2) samples (HG-PS1 and HG-PS2) collected from painted surfaces of the accommodations cabin and one (1) sample (HG-PP-PS1) from the painted surfaces of the outhouse, and therefore, below the CCME CSQG for PCBs in soil at an industrial site (33 mg/kg) and the applicable criterion for PCB solid (50 mg/kg).

Based on the paint sample analytical results, painted surfaces of the accommodations cabin and outhouse are not likely to be leachable for lead, PCBs or mercury; therefore, should disposal be required (e.g., renovation or demolition activities), the paints analyzed for lead, mercury and PCB content may be disposed of at an approved landfill facility, pending landfill and Provincial regulatory approval.

There are potential adverse human health impacts associated with disturbing (e.g., scraping, sanding, burning, etc.) lead, mercury PCB-containing paint finishes, due to the potential for dust, mist or fumes to be released and inhaled or ingested by workers. Given the lead-based paints were identified at the site, as a precautionary measure, Wood recommends handling these paint finishes, as follows:

- In areas of minor peeling or flaking, the paint should be removed using wet scraping techniques.
- In areas of extensive peeling and flaking, the paint should be removed and more extensive particulate control measures may be required.
- In areas where lead-containing paint finishes are present and in poor condition, an experienced contractor should be utilized for renovating, decommissioning or demolition activities.
- Prior to renovation, dismantling or demolition activities, all areas of extensive peeling and flaking of lead-containing paint finishes and paint debris/dust should be removed and/or remediated to ensure that building occupants/workers are protected from associated dust/particulate.
- Procedures should be implemented to ensure that workers and anyone present in and around areas being renovated, dismantled or demolished are protected. The contractor should also ensure that dust generation and migration is minimized.
- Precautions should be taken to prevent/reduce exposure to paint dust during any disturbance of lead-containing paint finishes, such as wetting the surface of the materials to prevent dust emissions, donning respiratory protection, and cleaning tools and clothing prior to exiting work areas.
- Where possible, lead-containing paint finishes should be removed from metal surfaces prior to welding or cutting these materials.

If potential lead, mercury or PCB containing paint finishes that were not sampled during this assessment are encountered in future, prior to any disturbance or removal, samples should be obtained and tested to verify concentrations of lead, mercury and PCBs. This includes materials that are currently concealed by walls and ceiling systems.

Any disturbance or removal of lead, mercury or PCB-containing paint finishes that may generate dust or respirable aerosols must conform to the Federal and Provincial OHS Regulations. All work should be carried out by individuals wearing proper PPE. The type of respiratory protection and control measures to be implemented during the removal of these types of paint finishes should be determined by a qualified person and based on the risk level of a particular work activity (i.e., scraping, sanding, abrasive blasting, etc.). Activities involving the disturbance and/or removal of lead, mercury or PCB-containing paint finishes should be carried out in a manner that ensures paint dust concentrations do not exceed the applicable ACGIH TLVs.

5.4.3 Potential UFFI

The sale and installation of UFFI was banned in 1980; since the original date of construction is unknown, it is possible that UFFI may be present in the building. Visual indicators suggesting the potential presence of UFFI were not observed in the building. It can be inferred that any UFFI present within the building is unlikely to affect the indoor air quality due to the amount of time that has passed since the insulation was likely installed (i.e., pre-1980) along with the likelihood that formaldehyde has off-gassed over this period of time. It should be noted that, the presence and concentration of formaldehyde cannot be determined or quantified without conducting site-specific testing for formaldehyde.

Although there are currently no Provincial regulations requiring that the removal of UFFI be conducted by a licensed/registered abatement contractor, based on discussions with representatives of the OHS Division of Service NL, it is strongly recommended that this material be abated using similar methods as required for asbestos abatement and that the insulation must be removed in a dry condition. Based on discussions with representatives of the NL MAE, for the purposes of disposal of UFFI, this material is permitted to be bagged and transported to an approved WDS and disposed in the special waste area (unlined area) of the site.

5.4.4 Mould

Wood inspected the interior areas of the accommodations cabin, from the entrance, and outhouse for visual or olfactory evidence of suspected mould. SVG was noted on much of the ceiling and wall surfaces inside the accommodations cabin during the Pre-Demolition HBMA site visit. Due to presence of bats and bat feces on the surfaces of the accommodations cabin, it was unsafe to enter the building to obtain a sample.

Mould spores are present in all indoor environments and cannot be completely eliminated. Cellulose based building materials provide a nutrient base for many mould species; however, mould cannot grow unless an adequate amount of excess moisture is present. The most effective way to prevent mould growth within a building is the prompt removal of any porous building materials with water damage or mould growth and repairing the building components that lead to the water infiltration.

5.4.5 Potential ODS

Wood were no able to assess whether or not there were potential sources of ODS within accommodations cabin, as observed from the exterior of the cabin, during the Pre-Demolition HBMA site visit.

Ozone depleting substances (ODS), if present, should be removed by an approved contractor prior to disposing of any cooling and/or refrigeration equipment from the building. The use, storage, operation, maintenance, decommissioning, and disposal of ODS containing equipment, in general, is regulated at both a Provincial and Federal level and must comply with the most recent NL Halocarbon Regulations and the Federal Halocarbon Regulations. The status of the potential ODS containing equipment should be confirmed through a mechanical contractor or consultant.

5.4.6 Potential Lead-Containing Materials/Equipment

Lead solder is likely to be present in plumbing and piping (e.g., cast iron and copper piping) in the accommodations cabin.

The disturbance, control or disposal of lead-containing material/equipment should be carried out in accordance with applicable criteria/regulations (refer to Section 1.6 of this report). The presence/absence of lead in these materials should be confirmed through a contractor or consultant prior to disturbance or disposal of these materials. Typically, these materials are sent to a metal recycling facility and not a landfill. Removal of lead-containing batteries should be completed in a manner that ensures structural integrity and no loss of fluid from the batteries. Should disposal be required, disposal of lead-containing batteries should be completed in accordance with hazardous waste procedures/guidelines (i.e., at an approved facility).

Sampling drinking water for the analysis of lead was not included in the scope of work for the Pre-Demolition HBMA.

5.4.7 Potential Mercury-Containing Materials/Equipment

Should disposal be required, mercury-containing equipment should be removed intact and returned to the manufacturer for recycling or disposed of at an approved hazardous waste disposal facility. The disturbance, control or disposal of mercury-containing materials/equipment should be carried out in accordance with applicable criteria/regulations (refer to Section 1.6 of this report). The presence/absence of mercury in these materials should be confirmed through a contractor or consultant prior to disturbance or disposal of these materials. Typically, these materials are sent to a recycling or hazardous waste disposal facility and not a landfill.

5.4.8 Potential PCB-Containing Materials/Equipment

According to the USEPA, PCBs may be present in caulking used in windows, door frames, masonry columns and other building materials in buildings built or renovated between 1950 and 1979. In addition, insulating fluids and cooling oils in electrical equipment (i.e., transformers, fluorescent light ballasts, capacitors, etc.) often contained PCBs until around 1980.

If PCB-containing materials or equipment are encountered in the future, and should disposal be required, the PCB content in the materials or equipment should be confirmed prior to disposal. Florescent light fixtures are present within the accommodations cabin. Any leaking light ballasts identified, whether PCB containing or not, should be removed and replaced to avoid potential concerns with electrical equipment in the future. All ballasts that are removed should be placed in a proper storage container(s). Leaks or stained areas should be cleaned and/or removed in accordance with applicable regulations or industry standards.

Any PCB-containing equipment (if present) should be handled, decontaminated, transported and disposed of as per current Federal and Provincial acts and regulations. Any PCB-containing equipment requiring removal from the building should be transported and disposed of at an approved hazardous waste disposal site, and not a landfill disposal site, by a registered hazardous waste transporter in accordance with applicable regulations.

5.4.9 Silica Containing Materials

Silica is expected to be present in concrete used in the construction of the foundation for the accommodations cabin. Silica may also be present in asphalt shingles used in the construction of accommodations cabin. Precautions should be taken to prevent/reduce exposure to silica dust during any disturbance/ demolition of silica-containing products, such as wetting the surface of the materials to prevent dust emissions, donning respiratory protection, and cleaning tools and clothing prior to exiting work areas. Activities involving the disturbance and/or demolition of silica-containing materials should be carried out in a manner that ensures silica dust concentrations do not exceed the applicable ACGIH TLV.

5.4.10 Potential Radioactive Materials

Smoke detectors were not observed during the Pre-Demolition HBMA site visit; however, observation of the interior of the accommodations cabin was limited to the doorway and windows, so it is possible that smoke detectors are present. Smoke detectors observed may contain very small amounts of radioactive material (i.e., Americium 241). Smoke alarms that use radioactive material incorporated in an ionization chamber are called "ion chamber smoke alarms".

5.4.11 Bats and Bat Feces

At the time of the Pre-Demolition HBMA site visit, there was a large quantity of bats occupying the accommodations cabin and an abundance of bat feces present inside the structure.

Employees entering the building and workers involved removing accumulations bat feces are at risk of exposure to airborne fungal spores (and other microbial hazards) likely to be released when this material is disturbed. Bat droppings should be presumed to be contaminated with the fungi *Histoplasma capsulatum, Cryptococcus neoformans*, and other infectious hazards. Many of these microorganisms are known to cause respiratory infections in workers exposed during construction, maintenance or demolition disturbance, and use of property personal protective equipment is recommended (EACO Mould Abatement Guidelines, Edition 3 (2015)). Materials contaminated with bat feces may be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility.

Prior to demolition or disturbance of materials at the cabin, it is recommended that the presence of bats within the accommodations cabin be reported to the NL Department of Fisheries and Land Resources' Wildlife Division. Avoid entering the cabin and seek non-destruction methods to deal with the bats.

5.4.12 Summary of Findings

Hazardous building materials identified at Hungry Grove Camp during this Pre-Demolition HBMA and disposal options, if required, are summarized in Table 5-4. Conclusions and recommendations made with respect to the potential and actual presence of hazardous building materials within the accommodations cabin and outhouse are provided in Section 5.4 and should be reviewed in conjunction with Table 5-4.

Table 5-4: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
ACMs	NL Asbestos Abatement Regulations (Reg. 111/98)	Black shingle and tar on the roof of the accommodations cabin (~67m^2) and the outhouse (~3m^2). Note that other possible hidden and inaccessible ACMs have the potential to be present within the accommodations building, but were not identified during the Pre-Demolition HBMA site visit.	ACMs cannot be disposed of at a Construction & Demolition Site; however, these materials can be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility. The transportation and disposal of asbestos should be conducted in accordance with the NL Asbestos Abatement Regulations (Reg. 111/98) and with Standard Operating Procedures (SOPs) for disposal of ACMs at the landfill.
LBPs	Guidance Document for Leachable Toxic Waste and Disposal (GD-PPD-26.1) Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Surface Coating Materials Regulations (SOR/2016-193)	LBP (grey) on plywood floor of accommodations cabin. LBP (white) on wood door trim on interior of accommodations cabin. LBP (grey) on plywood interior accommodations cabin.	Paints that were analyzed for lead and contained <5,000 mg/kg lead, may be disposed of at a Regional Solid Waste Disposal Facility (landfill), provided permission is obtained from the landfill owner/operator.
Potential UFFI	Federal HPA (R.S.1985, c. H-3)	None Identified	UFFI is permitted to be bagged and transported to an approved WDS and disposed in the special waste area of the site.
Mould	Mould Guidelines for the Canadian Construction Industry, Canadian Construction Industry (CCI), 2004; Mould Abatement Guidelines, Environmental Abatement Council of Ontario (EACO), 2010	Some water staining noted on walls and ceiling in the accommodations cabin. Due to presence of bats and bat feces on the surfaces of the accommodations cabin, it was unsafe to enter the building to obtain a sample.	All mould impacted materials may be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility.

Table 5-4: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
Potential ODS	Federal Halocarbon Regulations (SOR/2003-289)	Wood were no able to assess whether or not there were potential sources of ODS within accommodations cabin, as observed from the exterior of the cabin, during the Pre-Demolition HBMA site visit.	Materials containing ODS should be received by a contractor or facility that has the proper approvals to remove, handle and/or dispose of ODS. The remaining materials can be disposed of at a recycling facility, provided permission is obtained from the facility.
Potential Lead-Containing Materials/ Equipment	Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149) Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301)	Potential lead-containing solder (piping and plumbing). Other lead containing materials may also be present.	Lead-containing materials and equipment can be disposed of at a metal recycling or hazardous waste disposal facility, in accordance with applicable regulations. The transportation and disposal of hazardous lead-containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.
Potential Mercury-Containing Materials/ Equipment	Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Products Containing Mercury Regulations (SOR/2014-254)	Fluorescent light fixtures are present inside accommodations cabin. The light tubes in fluorescent light fixtures often contain limited quantities of mercury in a powder or vapour form. Other mercury containing materials may also be present.	Mercury-containing materials and equipment can be disposed of at a recycling or hazardous waste disposal facility, in accordance with applicable regulations. The transportation and disposal of hazardous mercury-containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.

Table 5-4: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
Potential PCB-Containing Materials/ Equipment	Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149) Federal TDG Act (1992, c. 34) Guidance Document for Leachable Toxic Waste and Disposal (GD-PPD-26.1) Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301) PCB Regulations (SOR/2008-273) PCB Waste Export Regulations (SOR/97-109) Regulations Amending the PCB Regulations (SOR/2010-57)	Fluorescent light fixtures are present inside accommodations cabin. The ballast of the fluorescent light fixtures may contain PCBs. Other PCB containing materials may also be present.	Any PCB-containing materials and equipment should be handled, decontaminated, transported and disposed of as per current Federal and Provincial acts and regulations. Any PCB-containing materials and equipment requiring removal from the building should be transported and disposed of by a registered hazardous waste transporter in accordance with applicable regulations. The transportation and disposal of PCB containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.
Silica-Containing Materials	NL OHS Act (RSNL1990 Chapter O-3) NL OHS Regulations (5/12)	Asphalt shingles and concrete.	These materials can be disposed of at a Regional Solid Waste Disposal Facility (landfill).
Potential Radioactive Materials	Federal TDG Act (1992, c. 34)	Wood were no able to assess whether or not there were any smoke detectors present within accommodations cabin, due to unsafe access (bats and feces).	Smoke detectors that contain low level radioactive materials must be transported, as per Federal TDG Regulations, to a licensed disposal facility.

Table 5-4: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
Bats and Fat Feces	EACO Mould Abatement Guidelines, Edition 3 (2015))	Present inside the accommodations cabin.	Materials contaminated with bat feces may be disposed of at a Regional Solid Waste Disposal Facility, provided permission is obtained from the landfill owner/operator. Prior to demolition or disturbance of materials at the cabin, it is recommended that the presence of bats within the accommodations cabin be reported to the NL Department of Fisheries and Land Resources' Wildlife Division. Avoid entering the cabin and seek non-destruction methods to deal with the bats.

APPENDIX A5

FIGURES

NOTES:

1. ALL DIMENSIONS ARE IN METERS.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF NEWFOUNDLAND LABRADOR HYDRO AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.

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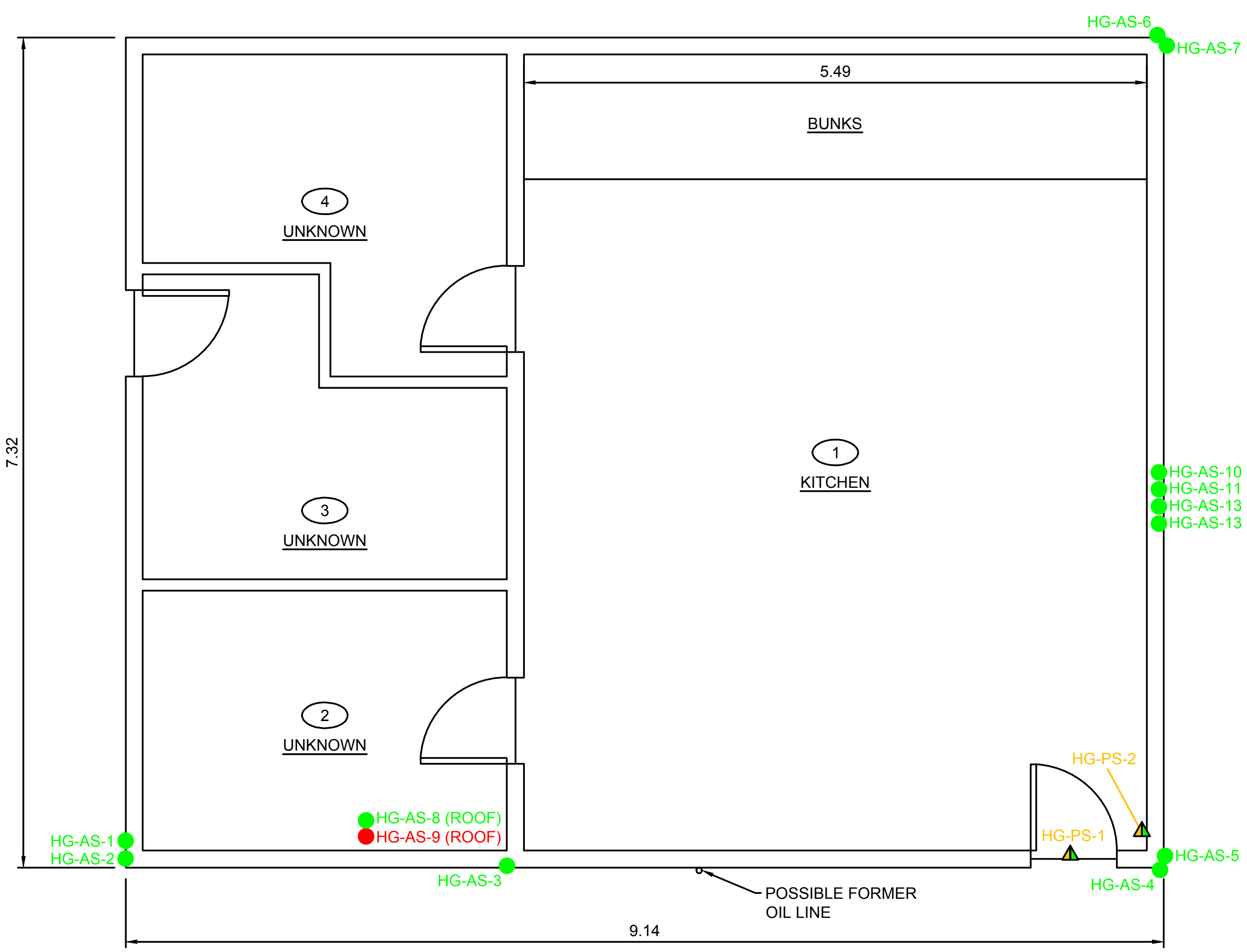
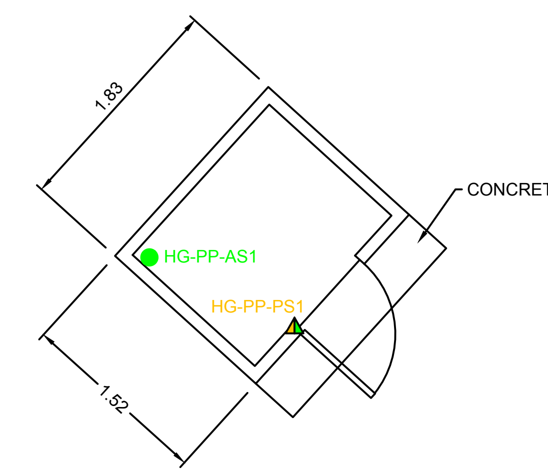
Approved by:	C. Finney
Scale:	As Shown
Project:	Pre-Demolition Hazardous Building Materials Assessment, Former Construction Camp Sites, Bay d'Espoir - Avalon Transmission Line, NL
Title:	Site Location Plan (Aerial) - Hungry Grove Camp Site
Date:	April 2019
Project No.	TF18104243.2000
Rev. No.	0
Figure No.	5.1



ACCOMMODATIONS CABIN



OUTHOUSE

SCALE

0m 1m 2m 3m

LEGEND:

- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED
- ASBESTOS SAMPLE LOCATION - RESULTS > 1% FOR ASBESTOS
- PAINT SAMPLE LOCATION - NO CRITERIA EXCEEDANCES FOR LEAD OR MERCURY OR PCBs WHERE APPLICABLE
- PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY OR PCBs WHERE APPLICABLE

NOTES:

1. ALL DIMENSIONS ARE IN METERS.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
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Drawn by:	T. Rideout
Approved by:	C. Finney
Scale:	As Shown
Project:	Pre-Demolition Hazardous Building Materials Assessment, Former Construction Camp Sites, Bay d'Espoir - Avalon Transmission Line, NL
Title:	Sample Location Plan - Hungry Grove Camp Site
Date:	April 2019
Project No.	TF18104243.2000
Rev. No.	0
Figure No.	5.2

APPENDIX B5

PHOTOGRAPHIC RECORD

Photo 1: View of the accommodations cabin at Hungry Grove Pond Camp, looking northwest.

Photo 2: View of the accomodations cabin at Hungry Grove Pond Camp, looking north.

Photo 3: View of the accommodations cabin at Hungry Grove Pond Camp, looking west.

Photo 4: View of the accomodations cabin at Hungry Grove Pond Camp , looking east.

Photo 5: View of the kitchen/bunk area at Hungry Grove Pond Camp.

Photo 6: View of the kitchen/bunk area at Hungry Grove Pond Camp.

Photo 7: View of the outhouse at Hungry Grove Pond Camp, looking north.

Photo 8: View of the interior of the outhouse at Hungry Grove Pond Camp.

Photo 9: View of the interior of the outhouse at Hungry Grove Pond Camp.

Photo 10: View of attic in accommodations cabin at Hungry Grove Pond Camp.

Photo 11: View of cavnity inspection below floors in accommodations cabin at Hungry Grove Pond Camp.

Photo 12: View of cavity inspection in wall from exterior accommodations cabin at Hungry Grove Pond Camp.

Photo 13: View of bulk material sample HG-AS1, brown brick, cabin exterior.

Photo 14: View of bulk material sample HG-AS2, grey mortar, cabin exterior.

Photo 15: View of bulk material sample HG-AS3, white caulking, cabin exterior.

Photo 16: View of bulk material sample HG-AS4, grey mortar, cabin exterior.

Photo 17: View of bulk material sample HG-AS5, red brick, cabin exterior.

Photo 18: View of bulk material sample HG-AS6, concrete block, cabin exterior.

Photo 19: View of bulk material sample HG-AS7, grey mortar, cabin exterior.

Photo 20: View of bulk material sample HG-AS8, black caulking, cabin exterior.

Photo 21: View of bulk material sample HG-AS9, black shingle and tar, cabin exterior. **4.8 % Crysotile Asbestos**.

Photo 22: View of bulk material sample HG-AS10, red sealant, cabin exterior.

Photo 23: View of bulk material sample HG-AS11, tar paper, cabin exterior.

Photo 24: View of bulk material sample HG-AS12, pressed board, cabin exterior.

Photo 25: View of bulk material sample HG-AS-13, tar paper, cabin exterior.

Photo 26: View of bulk material sample HG-PP-AS1, concrete, outhouse exterior.

Photo 27: View of paint sample HG-PP-AS2, shingle and tar, outhouse exterior.

Photo 28: View of paint sample HG-PS1, grey, accommodations cabin interior.

Photo 29: View of paint sample HG-PS2, grey, accommodations cabin interior.

Photo 30: View of paint sample HG-PS1, grey, outhouse interior.

APPENDIX C5

SAMPLE AND ANALYTICAL SUMMARY TABLES

Table C5-1: Bulk Sample Descriptions and Asbestos Analytical Results (Hungry Grove Pond Camp Site)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Sample Description	Layers Analyzed	Analytical Result
HG-AS1	Exterior	Exterior - Cabin	13	Wall	Brown brick	Brick	ND
HG-AS2	Exterior	Exterior - Cabin	14	Wall	Grey mortar (on brown brick)	Mortar	ND
HG-AS3	Exterior	Exterior - Cabin	15	Wall	White caulking (around brick)	Caulking	ND
HG-AS4	Exterior	Exterior - Cabin	16	Wall	Grey mortar (on red brick)	Mortar	ND
HG-AS5	Exterior	Exterior - Cabin	17	Wall	Red brick	Brick	ND
HG-AS6	Exterior	Exterior - Cabin	18	Wall	Concrete block	Concrete	ND
HG-AS7	Exterior	Exterior - Cabin	19	Wall	Grey mortar (on concrete block)	Mortar	ND
HG-AS8	Exterior	Exterior - Cabin	20	Roof	Black sealant on flashing	Sealant	ND
HG-AS9	Exterior	Exterior - Cabin	21	Roof	Black shingle and black tar	Shingle and tar	4.80%
HG-AS10	Exterior	Exterior - Cabin	22	Chimney	Red sealant	Sealant	ND
HG-AS11	Exterior	Exterior - Cabin	23	Wall	Tar paper	Tar paper	ND
HG-AS12	Exterior	Exterior - Cabin	24	Wall	Black pressed board	Pressed board	ND
HG-AS13	Exterior	Exterior - Cabin	25	Wall	Tar paper	Tar paper	ND
HG-PP-AS1	Exterior	Exterior - Outhouse	26	Foundation	Concrete	Concrete	ND
HG-PP-AS2	Exterior	Exterior - Outhouse	27	Roof	Black shingle and black tar	Shingle and tar	ND

Notes:

ACM: Asbestos-Containing Material

DJC: Drywall Joint Compound

VFT: Vinyl Floor Tile

VSF: Vinyl Sheet Flooring

ND: Non-Detect (<0.1%)

*Brown paper and tar analyzed as one layer because the laboratory could not separate these materials.

Bold and underlined value indicates asbestos was detected but is below 1% by dry weight.

Shaded value exceeds 1% asbestos by dry weight and is considered to be an ACM as outlined in the Newfoundland and Labrador Asbestos Abatement Regulations (Reg. 111/98).

Table C5-2: Paint Sample Descriptions and Lead Analytical Results (Hungry Grove Pond Camp Site)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Lead (mg/kg)
HG-PS1	1	Kitchen	28	Floor	Plywood	Grey on wood floor (sample includes wood)	15.0	**868**
HG-PS2	1	Kitchen	29	Wall	Wooden baseboard	White on wood baseboard (sample includes wood)	15.0	**228**
HG-PP-PS1	Exterior	Outhouse	30	Exterior	Plywood	Grey on wood (sample includes wood)	15.0	**280**

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

HPA: Hazardous Products Act

Bold and underlined value exceeds Federal HPA criterion (90 mg/kg).

Shaded value exceeds former Federal HPA criterion (5,000 mg/kg).

Table C5-3: Paint Sample Descriptions and Mercury Analytical Results (Hungry Grove Pond Camp Site)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Mercury (mg/kg)
HG-PS1	1	Kitchen	28	Floor	Plywood	Grey on wood floor (sample includes wood)	0.05	0.44
HG-PS2	1	Kitchen	29	Wall	Wooden baseboard	White on wood baseboard (sample includes wood)	0.05	0.55
HG-PP-PS1	Exterior	Outhouse	30	Exterior	Plywood	Grey on wood (sample includes wood)	0.05	0.09

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

HPA: Hazardous Products Act

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guideline

Bold and underlined value exceeds Federal HPA criterion (10 mg/kg).

Shaded value exceeds CCME CSQG for an industrial site (50 mg/kg).

Table C5-4: Paint Sample Descriptions and PCB Analytical Results (Hungry Grove Pond Camp Site)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Total PCB (mg/kg)
HG-PS1	1	Kitchen	28	Floor	Plywood	Grey on wood floor (sample includes wood)	0.5	<0.5
HG-PS2	1	Kitchen	29	Wall	Wooden baseboard	White on wood baseboard (sample includes wood)	0.5	<0.5
HG-PP-PS1	Exterior	Outhouse	30	Exterior	Plywood	Grey on wood (sample includes wood)	0.5	<0.5

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guideline

NL MAE: Newfoundland and Labrador Department of Municipal Affairs and Environment

TDG: Transportation of Dangerous Goods

[#]Sample collected by Hydro on May 5, 2018.

Bold and underlined value exceeds CCME CSQG for an industrial site (33 mg/kg).

Shaded value exceeds the criterion for PCB solid provided in the NL MAE Leachable Toxic Waste, Testing and Disposal Guidance Document and the TDG Regulations (50 mg/kg).

APPENDIX D5

ROOM-BY-ROOM INSPECTION SHEETS

Building	Room #	Floor #	Room Description	Dimensions
HG Hungry Grove			Kitchen	L = 24' W = 18' H = 8' Based on previous camp

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Wood			
Walls (include window caulking)	Wood			
Ceiling	Wood			
Paint (and substrate)	Walls: White / Biege Ceiling: Floor: grey Other:			HG-PS2 HG-PS1
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	— Fire Door Manufacturer: Potential, cannot read label Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: 2	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	2			
Thermostats	Manufacturer Colour, Shape — Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	—			
Mould / Water Staining	Area impacted Bat feces Mould			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext —			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials * No Access *			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
HG			Exterior	L = 30' W = 24' H =

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
~~Floor~~ Foundation	Cinder block c̄ grey mortar		Block Mortar	HG-AS6 HG-AS7
Walls ~~(include window caulking)~~	Red brick c̄ grey mortar on ½ Brown brick c̄ grey mortar on ½		Mortar Red brick Brown brick mortar	HG-AS4 HG-AS5 HG-AS1 HG-AS2
~~Ceiling~~ Roof	Black shingles c̄ tar		Shingle Sealant	HG-AS9 HG-AS8
Paint ~~(and substrate)~~	Walls: Ceiling: Floor: Caulking White Other:			HG-AS3
~~**Insulation** (Piping/Mechanical/ Wall/Ceiling/Ducting)~~	~~Fire Door Manufacturer:~~ Red caulking around former Chimney ~~Fire Door Serial #:~~		Red caulking	HG-AS10
~~**Piping / Mechanical Equipment**~~	Black Tar paper Black press board Black tar paper (thin)			HG-AS11 HG-AS12 HG-AS13
Fluorescent Lighting	Ballast Manufacturer: Serial #:	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	/			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,				
Mould / Water Staining	Area impacted Bat feces			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
HG			Out house (interior)	L = 5' W = 6' H = 7'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Concrete			
Walls (include window caulking)	Wood			
Ceiling	Wood			
Paint (and substrate)	Walls: Ceiling: Grey Floor: Other:			HG-PP-PS1
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	Pink fibreglass no backing Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	1 incandescent			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted — Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	—			
Mould / Water Staining	Area impacted —			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext —			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials —			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
HG			Outhouse (Exterior)	L = 6' W = 5' H = 7'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Concrete			HG-PF-AS1
Walls (include window caulking)	Wood			
Ceiling	Shingles			HG-PF-AS2
Paint (and substrate)	Walls: Ceiling: Grey Floor: Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment				
Fluorescent Lighting	Ballast Manufacturer: Serial #:	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)				
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,				
Mould / Water Staining	Area impacted			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext ✓			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

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APPENDICES

6.0 CAMP 100

Camp 100 is located approximately 37 km east of the Town of Milltown-Head of Bay d'Espoir, NL, and is accessed via gravel access road from the Bay d'Espoir Highway (Route 360) (refer to Figure 6.1, Appendix A6). Camp 100 is comprised of an accommodations cabin and an outhouse.

At the time of the Pre-Demolition HBMA site visit, a thorough assessment of the interior of the accommodations cabin was not possible due to unsafe conditions, as parts of the foundation and walls of the structure had previously collapsed (refer to Photo 2, 3 and 9, Appendix B2). As a result, there is limited information available concerning the presence/absence of hazardous building materials and equipment present within the cabin. Observations were recorded from the doorway and open wall cavities of the cabin, where possible. Please refer to hazardous building materials observed at other Former Construction Camp Sites assess along the former Bay d'Espoir – Avalon Transmission Line.

6.1 BUILDING DESCRIPTION

The accommodations cabin is a one-storey, rectangular structure with a footprint area of approximately 70 m^2. The floor plan of the cabin consists of one large room and two smaller rooms (refer to Figure 6.2, Appendix A6). The foundation of the accommodations cabin consists of concrete block footings. The structure of the accommodations cabin consists of brick. The exterior walls on the accommodations cabin are finished with brick and the roof is finished with asphalt shingles. The window and exterior door openings on the accommodations cabin are barricaded with metal covers for security purposes (refer to Photos 1 to 4, Appendix B6). Interior wall and ceiling finishes in the accommodations cabin consists of painted plywood. Floors/floor finishes consist of plywood. Fluorescent lighting was observed on the interior of the cabin. The interior area was observed from the building doorway/openings only. There were building upgrades completed at the site, reportedly in the mid 1990's. The new areas are brown brick and the original areas are red brick. At the time of the sit visit, it was observed that parts of the foundation and walls were dilapidated.

The outhouse is a one-storey, rectangular structure with a footprint area of approximately 3 m^2. The foundation and structure of the outhouse consists of wood framing and concrete. The exterior walls on the outhouse are finished with plywood and the roof is finished with asphalt shingles (refer to Photos 10 to 12, Appendix B6). Interior wall and ceiling finishes in the outhouse consist of painted plywood. Floor finishes consist of plywood. The outhouse does not contain any lighting or heating.

A description of accommodations cabin is outlined in Table 6-1 and a description of the outhouse is outlined in Table 6-2. Photographs of the buildings are provided in Appendix B6.

Table 6-1: Site Building Description – Accommodations Cabin

Building Name	Accommodations cabin	Photo No. (Appendix B6)
Date of Construction	Approximately late 1960's/early 1970's	-
Date of Renovations	Unknown	-
No. of Stories	One	1 to 5
Crawl Space (Yes/No)	No	-
Attic (Yes/No)	Yes	-
Type of Structure	Wood Frame and bricks	1 to 5
Type of Foundation	Wood Frame and concrete block footing	5

Table 6-1: Site Building Description – Accommodations Cabin

Building Name	Accommodations cabin	Photo No. (Appendix B6)
Exterior	Red and Brown brick	1 to 5
Window/Door Frames	Painted Metal and Wood	1, 2 and 5
Exterior Doors	Painted Metal	1, 2 and 5
Roofing Materials	Asphalt Shingles	1
Interior Walls Finishes	Painted Plywood	6 to 8
Interior Ceiling Finishes	Plywood	6 and 7
Floor Finishes	Plywood	6 and 7
Interior Doors	NA	-
Interior Lighting	Fluorescent	6 and 7
Exterior Lighting	Incandescent	1 and 2
Heating	NA	-

Table 6-2: Site Building Description – Outhouse

Building Name	Outhouse	Photo No. (Appendix B6)
Date of Construction	Approximately late 1960's/early 1970's	-
Date of Renovations	Unknown	-
No. of Stories	One	10 to 12
Crawl Space (Yes/No)	No	-
Attic (Yes/No)	No	-
Type of Structure	Plywood	10 to 12
Type of Foundation	Concrete and Wood Frame	-
Exterior	Plywood	11
Window/Door Frames	NA	-
Exterior Doors	NA	-
Roofing Materials	Asphalt Shingles	19
Interior Walls Finishes	Painted Plywood	12
Interior Ceiling Finishes	Painted Plywood	-
Floor Finishes	NA	-
Interior Doors	NA	-
Interior Lighting	NA	-
Exterior Lighting	NA	-
Heating	NA	-

6.2 ROOM DESIGNATION

Each room at Camp 100 was assigned a specific room name. The designated room names are presented in Table 2-2 and graphically illustrated on the sample location plan (refer to Figure 6.2, Appendix A6).

Table 6-3: Assigned Rooms

Level No.	Room Name – Accommodations Cabin	Room Number
1	Kitchen/Bunk Area	Room 1
1	Pantry	Room 2
1	Other - Collapsed	Room 3
1	Outhouse	Outhouse

6.3 FINDINGS

The findings documented in this section are based on observations made by Wood personnel at the time of the site visit on August 8, 2018 and the results of laboratory analyses of samples collected from Camp 100. During the Pre-Demolition HBMA site visit, Wood personnel were accompanied by a representative of Hydro (Mr. Wayne Lidster). Copies of room-by-room inspection sheets for the accommodations building and outhouse are provided in Appendix D6. Photos of the samples collected from the accommodations building and outhouse during the site visits are provided in Appendix B6.

6.3.1 Asbestos-Containing Materials (ACMs)

There are over 3,000 ACMs that are commercially available, which can be divided into two broad categories: friable and non-friable. ACMs were discontinued from use in Canada in the late 1970s/early 1980s, although non-friable asbestos is still found in many more recent buildings.

During the Pre-Demolition HBMA site visit, a total of six (6) building material samples (C100-AS-1 to C100-AS-6) were collected from the accommodations cabin and two (2) building material samples (C100-PP-AS1 and C100-PP-AS2) were collected from the outhouse (refer to Photos 13 to 20, Appendix B6) and analyzed for asbestos content. Bulk sample descriptions and asbestos analytical results are summarized in Table C6-1, Appendix C6. Sample locations and analytical results are graphically illustrated on Figure 6.2, Appendix A6.

Due to the level of dilapidation at the accommodations cabin, it was unsafe to enter the building to obtain any additional asbestos samples (refer to Photo 2, 3 and 9, Appendix B2).

6.3.1.1 Friable Materials

Friable ACMs are defined as materials that can be crumbled, pulverized and reduced to powder when dry using hand pressure. Typical friable materials include acoustical or decorative spray applications, fireproofing and thermal insulation.

6.3.1.1.1 Spray-Applied Fireproofing, Insulation and Texture Finishes

There were no spray-applied fireproofing, insulation or texture finishes observed in the accommodations cabin or outhouse during the Pre-Demolition HBMA site visit; therefore, no samples of these materials were collected for analysis.

6.3.1.1.2 Building and Thermal System Insulation

During the Pre-Demolition HBMA site visit, fiberglass insulation was observed between the particle board and plywood in the walls of the accommodations cabin. Due to the level of dilapidation around the sides of the cabin, the technician kept a safe distance away to ensure personal safety, and therefore no insulation samples could be collected.

6.3.1.2 Non-Friable and Potentially Friable Materials

Non-friable ACMs are hard or manufactured products such as floor tiles, fire blankets, pre-formed manufactured cementitious insulation and wallboards, pipes, and siding, wherein the asbestos fibres are bound to the substrate. Note that although a product may be considered non-friable when new, the product may release fine dust when disturbed (e.g., deterioration, removal, renovations) and the free dust is considered friable.

6.3.1.2.1 Ceiling Tile

There were no ceiling tiles observed at Camp 100 during the Pre-Demolition HBMA site visit; therefore, no samples of ceiling tile were collected for analysis.

6.3.1.2.2 Drywall Joint Compound

There was no drywall joint compound observed at Camp 100 during the Pre-Demolition HBMA site visit; therefore, no samples of drywall joint compound were collected for analysis.

6.3.1.2.3 Vinyl Flooring Products and Mastics

There was no vinyl flooring or products observed at Camp 100 during the Pre-Demolition HBMA site visit; therefore, no samples of vinyl flooring or products were collected for analysis.

6.3.1.2.4 Baseboard, Carpet and Stair Tread Adhesives/Mastics

There were no baseboard, carpet or stair tread adhesives/mastics observed at Camp 100 during the Pre-Demolition HBMA site visit; therefore, no samples of these types of adhesives/mastics were collected for analysis.

6.3.1.2.5 Roofing Products

During the Pre-Demolition HBMA site visit, one (1) sample of black felt and tar (C100-PP-AS1) was collected from the roof of the outhouse and analyzed for asbestos content (refer to Photo 19, Appendix B6). Asbestos was detected in C100-PP-AS1 containing 1.1 % chrysotile asbestos According to the NL asbestos abatement regulations (Reg. 111/98), this material is considered asbestos-containing materials.

It is important to note, due to height and safety constraints, no samples of shingles or tar, building materials around roof penetrations (e.g., caulking or sealants around vents or electrical conduit) or roof seams were collected from the accommodations cabin for analysis. Given that asbestos was detected in the roofing materials on the outhouse, it can be assumed that the roof materials contains asbestos; alternatively, samples can be collected during demolition of the cabin to assess handling and disposal options for the roofing materials.

6.3.1.2.6 Caulking/Sealant

During the Pre-Demolition HBMA site visit, one (1) sample of black tar sealant (C100-AS-5) was collected from a vent on the accommodations cabin (currently located on the ground adjacent to the cabin) and analyzed for asbestos content (refer to Photo 17, Appendix B6). Asbestos was detected in C100-AS-5 containing 21.2 % chrysotile asbestos According to the NL asbestos abatement regulations (Reg. 111/98), this material is considered an asbestos-containing material.

6.3.1.2.7 Mortar, Grout and Other Cementitious Materials

During the Pre-Demolition HBMA site visit, one (1) sample of grey mortar on brown brick (C100-AS-1), one (1) sample of brown brick (C100-AS-2), one (1) sample of grey mortar on red brick (C100-AS-3) and one (1) sample of red brick (C100-AS-4) were collected from the accommodations cabin and analyzed for asbestos content (refer to Photos 13 to 16, Appendix B6). Asbestos was not detected in the brick and/or mortar samples analyzed.

Additionally, (1) sample of concrete (C100-PP-AS2) was collected from the outhouse and analyzed for asbestos content (refer to Photo 20, Appendix B6). Asbestos was not detected in the concrete sample analyzed.

6.3.1.2.8 Fire-Rated Doors

Fire-rated doors and door frames were not observed during the Pre-Demolition HBMA site visit.

6.3.1.2.9 Other Potential ACMs

During the Pre-Demolition HBMA site visit, one (1) sample of black pressed board (C100-AS-6) from the accommodations cabin and analyzed for asbestos content (refer to Photo 18, Appendix B6). Asbestos was not detected in the pressed board sample collected.

Other potential ACMs were observed (or suspected to be present) and were not sampled due to the nature of the materials and/or hazards associated with sampling these materials. These materials included, but are not limited to, electrical and mechanical components and insulators such as wiring and gaskets, heat shields inside incandescent/fluorescent light fixtures, and caulking or sealants around or along roof seams, vent pipes, electrical conduits or other penetrations (refer to Photos 1, 6, 7 and 8, Appendix B6).

Other possible hidden and inaccessible ACMs have the potential to be present within the accommodations cabin but were not identified during the Pre-Demolition HBMA site visit. These possible ACMs could include concrete leveling compound (existing concrete foundation), possible fireproofing materials in the wall or ceiling cavities, piping/pipe joint sealants/gaskets and packing associated with cast iron pipe joints, fire rated structures or building materials, vapour barriers in walls, undercoatings on sinks, interior heat resistant components or gaskets inside appliances, concrete lining the interior of hot water tanks, and underground infrastructure or piping.

6.3.2 Paint Additives

Lead compounds have been used in paint as pigment and durability additives since the early 1800s. Mercury compounds have been used in paint as anti-microbial additives up until the 1990s. PCBs have been used in paint as plasticizers and corrosion resistance additives from the 1950s to the 1970s.

During the Pre-Demolition HBMA site visit, two (2) samples (C100-PS1 to C100-PS2) were collected from the painted surfaces of the accommodations cabin and two (2) samples (C100-PP-PS1 to C100-PP-PS2) were collected from painted surfaces of the outhouse and analyzed for lead, mercury and PCB content (refer to Photos 17 to 20, Appendix B6). Paint sample descriptions and lead, mercury and PCBs analytical results are summarized in Tables C6-2 to C6-4, Appendix C6. Sample locations and analytical results are graphically illustrated on Figure 6.2, Appendix A6.

Even though it was unsafe to enter the accommodations cabin, only white and grey painted surfaces were observed from the exterior opening of the cabin. The Wood field technician was able to collect representative paint samples of these materials from the exterior doorway and from fallen cabin debris material (outside of the cabin).

6.3.2.1 Lead in Paint

Concentrations of lead in the two (2) samples (C100-PS1 to C100-PS2) collected from painted surfaces of the accommodations cabin and two (2) samples (C100-PP-PS1 to C100-PP-PS2) collected from the painted surfaces of the outhouse ranged from non-detect (<15 mg/kg) to 489 mg/kg (refer to Table C6-2, Appendix C6). Two (2) paint samples (C100-PS1 and C100-PP-PS1) contained lead at concentrations above the Federal HPA criterion of 90 mg/kg and below the former Federal HPA criterion of 5,000 mg/kg (refer to Photos 17 and 19 Appendix B6). The concentrations of lead in the other two (2) samples were below the Federal HPA criterion (90 mg/kg).

6.3.2.2 Mercury in Paint

Concentrations of mercury in the two (2) samples (C100-PS1 to C100-PS2) collected from painted surfaces of the accommodations cabin and two (2) samples (C100-PP-PS1 to C100-PP-PS2) collected from the outhouse ranged from 0.21 mg/kg to 3.83 mg/kg, and therefore, the concentrations of mercury in these samples were below the Federal HPA criterion (10 mg/kg) (refer to Table C6-3, Appendix C6).

6.3.2.3 PCBs in Paint

PCBs were not detected (<0.5 mg/kg) in the paint samples collected, and therefore, below the CCME CSQG for PCBs in soil at an industrial site (33 mg/kg) and the applicable criterion for PCB solid (50 mg/kg) (refer to Table C6-4, Appendix C6).

6.3.3 Urea Formaldehyde Foam Insulation (UFFI)

Visual indicators suggesting the potential presence of UFFI were not observed at Camp 100. The nature of the insulation in the walls and ceilings throughout the accommodations cabin consisted of fiberglass insulation.

Since the original date of construction of Camp 100 (assumed construction commenced the same timeframe as the original transmission line, late 1960’s/early 1970’s) is unknown, it is possible that UFFI may be present.

In the event that UFFI is present, the CMHC state that “tests show that UFFI is not a source of over-exposure to formaldehyde after the initial curing and release of excess gas”. The general view based on studies concerning formaldehyde emissions is that as a product ages, the amount of formaldehyde off-gassed from the product decreases over time. The amount of formaldehyde released is reportedly dependent on temperature, humidity and whether or not the product is exposed to excessive moisture or water.

6.3.4 Suspected Visible Mould Growth (SVG)

Wood inspected the interior areas of the accommodations cabin and outhouse for visual or olfactory evidence of suspected mould. SVG was noted on much of the ceiling and wall surfaces inside the accommodations cabin during the Pre-Demolition HBMA site visit. Due to the level of dilapidation at the accommodations cabin, it was unsafe to enter the building to obtain a sample (refer to Photo 8, Appendix B2).

6.3.5 Mercury-Containing Thermostats

Thermostats were not identified inside the accommodations cabin at Camp 100 during the Pre-Demolition HBMA site visit, as observed from the exterior of the cabin. Based on inspections of other similar cabins along the transmission line, it is unlikely that there are any thermostats present.

6.3.6 PCB-Containing Light Ballasts

Fluorescent light fixtures were observed on the interior of the accommodations cabin and incandescent light fixtures were observed on the exterior of the accommodations cabin, as observed from the exterior of the cabin, during the Pre-Demolition HBMA site visit (refer to Photos 1, 6 and 7, Appendix B6).

6.3.7 Potential Sources of ODS and Halocarbons

Wood were no able to assess whether or not there were potential sources of ODS within accommodations cabin, as observed from the exterior of the cabin, during the Pre-Demolition HBMA site visit; however, a chest freezer was identified inside the pantry (Room 2) (refer to Photo 8, Appendix B6). The refrigerant contained within the freezer may contain ODS and should be checked to determine disposal options during demolition.

6.3.8 Other Potentially Hazardous Building Materials or Substances

Other potentially hazardous building materials or substances identified during this assessment are presented in the following sections.

6.3.8.1 Lead-Containing Materials and Equipment

Lead is typically associated with plumbing solder and older pipe materials (e.g., cast iron pipe joints), as well as products such as radiation protective shielding and lead-acid batteries. Lead can also be present in steel and iron primer, industrial electrical jacketing, roof flashing and tank linings.

Since the actual date that Camp 100 was constructed is unknown (assumed to be late 1960's/early 1970's), it is possible that lead solder is present in plumbing and piping (i.e., cast iron and copper piping) in the accommodations cabin (if present), as lead solder for use in potable water distribution pipes was not banned until the late 1980s (refer to Photo 7, Appendix B6).

6.3.8.2 Mercury-Containing Materials and Equipment

The light tubes and bulbs in HID and fluorescent light fixtures often contain limited quantities of mercury in a powder or vapour form. Both incandescent light fixtures and florescent light fixtures were observed on the exterior and the interior of the accommodations cabin during the Pre-Demolition HBMA site visit (Photos 1, 6 and 7, Appendix B6).

6.3.8.3 PCB-Containing Materials and Equipment

According to the USEPA, PCBs may be present in caulking used in windows, door frames, masonry columns and other building materials in buildings built or renovated between 1950 and 1979. In addition, and as mentioned previously, insulating fluids and cooling oils in electrical equipment (i.e., transformers, fluorescent light ballasts, capacitors, etc.) often contained PCBs until around 1980.

6.3.8.4 Treated Wood Chemicals

The chemicals that are used to protect and preserve wood products from insect attack and fungal decay may pose risks to human health and the environment. Depending on the wood treatment used, treated wood may be considered a hazardous waste upon disposal. The NL Department of Environment and Conservation (currently the NL MAE), 2015 Guidance Document for Treated Wood Waste Disposal (GD-PPD-075.1) provides landfill disposal standards for "pressure treated" inorganic preservatives (i.e., arsenic and chromium) and creosote (i.e., total cresol and benzo(a)pyrene) and chlorophenolic (i.e., pentachlorophenol) formulations used to preserve wood. These landfill disposal standards for treated wood waste (TWW) are used to assess the results of leachability testing to determine disposal options for treated wood to be removed during renovation or demolition activities.

Treated wood was not identified during the Pre-Demolition HBMA site visit.

6.3.8.5 Silica

According to the CPWR – The Center for Construction Research and Training, many common construction materials contain silica including, asphalt, brick, cement, concrete, drywall, grout, mortar, stone, sand and tile. The dust created by cutting, grinding, drilling or otherwise disturbing these materials can contain crystalline silica particles.

Based on the Pre-Demolition HBMA site visit, silica is expected to be present in the exterior bricks and concrete blocks used in the construction of the foundation for the accommodations cabin. Silica may also be present in the asphalt shingles used in the construction of the accommodations cabin.

6.3.8.6 Radioactive Materials

Smoke detectors were not observed during the Pre-Demolition HBMA site visit; however, observation of the interior of the accommodations cabin was limited to the doorway and open wall cavities so it is possible that smoke detectors are present. Smoke detectors observed may contain very small amounts of radioactive material (i.e., Americium 241). Smoke alarms that use radioactive material incorporated in an ionization chamber are called "ion chamber smoke alarms".

6.4 CONCLUSIONS AND RECOMMENDATIONS

Based on observations made and information gathered during the Pre-Demolition HBMA, the following conclusions and recommendations are made with respect to the potential and actual presence of hazardous building materials at Camp 100.

6.4.1 ACMs

Results of the asbestos sampling and analytical program revealed building materials containing greater than 1% asbestos by dry weight, which are considered to be ACMs, are present in the form of non-friable black tar sealant on the vents of the accommodations cabin and non-friable black felt and tar on the roof of the outhouse. Given that asbestos was detected in the roofing materials on the outhouse, it can be assumed that the roof materials contains asbestos; alternatively, samples can be collected during demolition of the cabin to assess handling and disposal options for the roofing materials. In addition, if there is any black tar sealant present around the windows and/or doorways of the cabin when removed, it should be sampled for asbestos or treated as a ACM.

The asbestos-containing black tar sealant visible around the vent present on the ground adjacent to the accommodations cabin (limited quantity); not that there are additional vents present. The asbestos-containing black felt and tar visible on the on the roof of the outhouse (covering an area of approximately 3 m^2) appeared to be fair to poor condition.

Other potential ACMs were observed (or suspected to be present) and were not sampled due to the nature of the materials and/or hazards associated with sampling these materials. These materials included, but are not limited to:

- Insulation materials present within the wall cavities and attic of the accommodations cabin (unsafe access for sampling during current HBMA site visit). Note that asbestos was not detected in insulation samples collected from other cabin along the transmission line.
- Electrical and mechanical components and insulators such as wiring and gaskets.
- Heat shields inside incandescent/ fluorescent light fixtures.
- Caulking or sealants around or along roof seams, vent pipes, electrical conduits or other penetrations.

Other possible hidden and inaccessible ACMs have the potential to be present within the buildings at Camp 100 but were not identified during the Pre-Demolition HBMA site visit. These possible ACMs could include concrete leveling compound (existing concrete foundation), possible fireproofing materials in the wall or ceiling cavities, piping/pipe joint sealants/gaskets and packing associated with cast iron pipe joints, fire rated structures or building materials, vapour barriers in walls, undercoatings on sinks, interior heat resistant components, concrete lining the interior of hot water tanks, and underground infrastructure or piping.

If other potential ACMs that were not sampled as part of this assessment are encountered in the future, these materials should be treated as ACMs or samples should be collected and tested to verify asbestos content. This should be done as soon as these materials are encountered and before these materials are disturbed. This includes materials that are currently concealed by walls and ceiling systems.

In accordance with the NL Asbestos Abatement Regulations (Reg. 111/98), which provide the legislative requirements for safe handling of ACMs in workplaces in the Province of NL, the following is recommended:

- Safe work procedures shall be established.
- All buildings constructed during the period when asbestos was readily used in construction (generally prior to the early 1980s) or any buildings that are suspected as having asbestos must have a written assessment and management plan (where applicable) for potential ACMs.
- Materials suspected of containing asbestos are required to be handled as ACMs, until analysis by a competent laboratory determines whether or not it does contain asbestos.
- Prior to general demolition, all ACMs must be safely removed from the building and disposed of in accordance with appropriate environmental guidelines by an asbestos abatement contractor registered with the Occupational Health and Safety (OHS) Division of Service NL.
- Most work involving ACMs (i.e., disturbance, removal and encapsulation) must be conducted by a contractor registered with the OHS Division of Service NL.
- ACMs in good condition should be inspected on an annual basis.
- ACMs in poor condition should be removed from the building and transported off-site for proper disposal.
- Workers should don adequate respiratory protection and personal protective equipment (PPE) when working with ACMs.

Prior to the removal and/or abatement of any identified ACMs (or any other hazardous building materials), an abatement plan including technical specifications should be designed, prepared and supervised by a qualified professional and should be undertaken by qualified trades, in accordance with applicable standards. Activities involving the disturbance and/or removal of ACMs should be carried out in a manner that ensures asbestos fiber concentrations do not exceed the applicable American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV). ACMs can be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility.

6.4.2 Lead, Mercury and PCBs in Paint

Results of the paint sampling and analytical program revealed the following:

- **<u>Lead and Leachable Lead in Paint</u>**
  - Concentrations of lead in the two (2) samples (C100-PS1 to C100-PS2) collected from painted surfaces of the accommodations cabin and two (2) samples (C100-PP-PS1 to C100-PP-PS2) collected from the outhouse ranged from non-detect (<15 mg/kg) to 489 mg/kg.
  - Two (2) paint samples (C100-PS1 and C100-PP-PS1) contained lead at concentrations above the Federal HPA criterion of 90 mg/kg and below the former Federal HPA criterion of 5,000 mg/kg and are not likely to be leachable for lead.
  - The concentrations of lead in the other two (2) samples were below the Federal HPA criterion (90 mg/kg); therefore, these paints are not considered to be LBPs and are not likely to be leachable

for lead.

- **Mercury and Leachable Mercury in Paint**
  - Concentrations of mercury in the two (2) samples (C100-PS1 to C100-PS2) collected from painted surfaces of the accommodations cabin and two (2) samples (C100-PP-PS1 to C100-PP-PS2) collected from the outhouse ranged from non-detect (<0.05 mg/kg) to 3.83 mg/kg; below the Federal HPA criterion (10 mg/kg). These paints are not considered to be MBPs and are not likely to be leachable for mercury.

- **PCBs in Paint**
  - PCBs were not detected (<0.5 mg/kg) in the two (2) samples (C100-PS1 to C100-PS2) collected from painted surfaces of the accommodations cabin and two (2) samples (C100-PP-PS1 to C100-PP-PS2) from the painted surfaces of the outhouse, and therefore, below the CCME CSQG for PCBs in soil at an industrial site (33 mg/kg) and the applicable criterion for PCB solid (50 mg/kg).

Even thought, it was unsafe to enter the accommodations cabin, only white and grey painted surfaces were observed from the exterior openings and the Wood field technician was able to collect representative paint samples from these material from the doorway and from cabin debris material at the site.

Based on the paint sample analytical results, the other paint samples collected from accommodations cabin and outhouse are not likely to be leachable for lead, mercury or PCBs, and therefore, should disposal be required (e.g., renovation or demolition activities), the paints analyzed for lead and mercury content may be disposed of at an approved landfill facility, pending landfill and Provincial regulatory approval.

There are potential adverse human health impacts associated with disturbing (e.g., scraping, sanding, burning, etc.) lead, mercury or lead-containing paint finishes, due to the potential for dust, mist or fumes to be released and inhaled or ingested by workers. Given the lead-based paints were identified at the site, as a precautionary measure, Wood recommends handling these paint finishes, as follows:

- In areas of minor peeling or flaking, the paint should be removed using wet scraping techniques.
- In areas of extensive peeling and flaking, the paint should be removed and more extensive particulate control measures may be required.
- In areas where lead-containing paint finishes are present and in poor condition, an experienced contractor should be utilized for renovating, decommissioning or demolition activities.
- Prior to renovation, dismantling or demolition activities, all areas of extensive peeling and flaking of lead-containing paint finishes and paint debris/dust should be removed and/or remediated to ensure that building occupants/workers are protected from associated dust/particulate.
- Procedures should be implemented to ensure that workers and anyone present in and around areas being renovated, dismantled or demolished are protected. The contractor should also ensure that dust generation and migration is minimized.
- Precautions should be taken to prevent/reduce exposure to paint dust during any disturbance of lead-containing paint finishes, such as wetting the surface of the materials to prevent dust emissions, donning respiratory protection, and cleaning tools and clothing prior to exiting work areas.
- Where possible, lead-containing paint finishes should be removed from metal surfaces prior to welding

or cutting these materials.

If potential lead, mercury or PCB-containing paint finishes that were not sampled during this assessment are encountered in future, prior to any disturbance or removal, samples should be obtained and tested to verify concentrations of lead, mercury and PCBs. This includes materials that are currently concealed by walls and ceiling systems.

Any disturbance or removal of lead, mercury or PCB-containing paint finishes that may generate dust or respirable aerosols must conform to the Federal and Provincial OHS Regulations. All work should be carried out by individuals wearing proper PPE. The type of respiratory protection and control measures to be implemented during the removal of these types of paint finishes should be determined by a qualified person and based on the risk level of a particular work activity (i.e., scraping, sanding, abrasive blasting, etc.). Activities involving the disturbance and/or removal of lead, mercury or PCB-containing paint finishes should be carried out in a manner that ensures paint dust concentrations do not exceed the applicable ACGIH TLVs.

6.4.3 Potential UFFI

The sale and installation of UFFI was banned in 1980; since the original date of construction is unknown, it is possible that UFFI may be present in the building. Visual indicators suggesting the potential presence of UFFI were not observed in the building, as only fiberglass insulation was observed. It can be inferred that any UFFI present within the building is unlikely to affect the indoor air quality due to the amount of time that has passed since the insulation was likely installed (i.e., pre-1980) along with the likelihood that formaldehyde has off-gassed over this period of time. It should be noted that, the presence and concentration of formaldehyde cannot be determined or quantified without conducting site-specific testing for formaldehyde.

Although there is currently no Provincial regulations requiring that the removal of UFFI be conducted by a licensed/registered abatement contractor, based on discussions with representatives of the OHS Division of Service NL, it is strongly recommended that this material be abated using similar methods as required for asbestos abatement and that the insulation must be removed in a dry condition. Based on discussions with representatives of the NL MAE, for the purposes of disposal of UFFI, this material is permitted to be bagged and transported to an approved WDS and disposed in the special waste area (unlined area) of the site.

6.4.4 Mould

Wood inspected the interior areas of the accommodations cabin and outhouse for visual or olfactory evidence of suspected mould. SVG was noted the ceiling and wall surfaces inside the accommodations cabin during the Pre-Demolition HBMA site visit. Due to the level of dilapidation at the accommodations cabin, it was unsafe to enter the building to obtain a sample.

Mould spores are present in all indoor environments and cannot be completely eliminated. Cellulose based building materials provide a nutrient base for many mould species; however, mould cannot grow unless an adequate amount of excess moisture is present. The most effective way to prevent mould growth within a building is the prompt removal of any porous building materials with water damage or mould growth, and repairing the building components that lead to the water infiltration.

6.4.5 Potential ODS

Ozone depleting substances (ODS), if present, should be removed by an approved contractor prior to disposing of any cooling and/or refrigeration equipment from the building. The use, storage, operation, maintenance, decommissioning, and disposal of ODS containing equipment, in general, is regulated at both a Provincial and Federal level and must comply with the most recent NL Halocarbon Regulations and the Federal Halocarbon Regulations. The status of the potential ODS containing equipment should be confirmed through a mechanical contractor or consultant.

6.4.6 Potential Lead-Containing Materials/Equipment

Lead solder is likely to be present in plumbing and piping (e.g., cast iron and copper piping) within the accommodations cabin.

The disturbance, control or disposal of lead-containing material/equipment should be carried out in accordance with applicable criteria/regulations (refer to Section 1.6 of this report). The presence/absence of lead in these materials should be confirmed through a contractor or consultant prior to disturbance or disposal of these materials. Typically, these materials are sent to a metal recycling facility and not a landfill. Removal of lead-containing batteries should be completed in a manner that ensures structural integrity and no loss of fluid from the batteries. Should disposal be required, disposal of lead-containing batteries should be completed in accordance with hazardous waste procedures/guidelines (i.e., at an approved facility).

6.4.7 Potential Mercury-Containing Materials/Equipment

Should disposal may be required, mercury-containing equipment should be removed intact and returned to the manufacturer for recycling or disposed of at an approved hazardous waste disposal facility. The disturbance, control or disposal of mercury-containing materials/equipment should be carried out in accordance with applicable criteria/regulations (refer to Section 1.6 of this report). The presence/absence of mercury in these materials should be confirmed through a contractor or consultant prior to disturbance or disposal of these materials. Typically, these materials are sent to a recycling or hazardous waste disposal facility and not a landfill.

6.4.8 Potential PCB-Containing Materials/Equipment

According to the USEPA, PCBs may be present in caulking used in windows, door frames, masonry columns and other building materials in buildings built or renovated between 1950 and 1979. In addition, insulating fluids and cooling oils in electrical equipment (i.e., transformers, fluorescent light ballasts, capacitors, etc.) often contained PCBs until around 1980.

If PCB-containing materials or equipment are encountered in the future, and should disposal be required, the PCB content in the materials or equipment should be confirmed prior to disposal. Florescent light fixtures are present within the accommodations cabin. Any leaking light ballasts identified, whether PCB containing or not, should be removed and replaced to avoid potential concerns with electrical equipment in the future. All ballasts that are removed should be placed in a proper storage container(s). Leaks or stained areas should be cleaned and/or removed in accordance with applicable regulations or industry standards.

Any PCB-containing equipment (if present) should be handled, decontaminated, transported and disposed of as per current Federal and Provincial acts and regulations. Any PCB-containing equipment requiring removal from the building should be transported and disposed of at an approved hazardous waste disposal site, and not a landfill disposal site, by a registered hazardous waste transporter in accordance with applicable regulations.

6.4.9 Silica Containing Materials

Silica is expected to be present in exterior bricks and concrete used in the construction of the foundation for the accommodations cabin. Silica may also be present in asphalt shingles used in the construction of accommodations cabin. Precautions should be taken to prevent/reduce exposure to silica dust during any disturbance/ demolition of silica-containing products, such as wetting the surface of the materials to prevent dust emissions, donning respiratory protection, and cleaning tools and clothing prior to exiting work areas. Activities involving the disturbance and/or demolition of silica-containing materials should be carried out in a manner that ensures silica dust concentrations do not exceed the applicable ACGIH TLV.

6.4.10 Potential Radioactive Materials

Smoke detectors were not observed during the Pre-Demolition HBMA site visit; however, observation of the interior of the accommodations cabin was limited to the doorway and open wall cavities, so it is possible that smoke detectors are present. Smoke detectors observed may contain very small amounts of radioactive material (i.e., Americium 241). Smoke alarms that use radioactive material incorporated in an ionization chamber are called "ion chamber smoke alarms".

6.4.11 Summary of Findings

Hazardous building materials identified at Camp 100 during this Pre-Demolition HBMA and disposal options, if required, are summarized in Table 6-5. Conclusions and recommendations made with respect to the potential and actual presence of hazardous building materials within the accommodations cabin and outhouse are provided in Section 6.4 and should be reviewed in conjunction with Table 6-5.

Table 6-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
ACMs	NL Asbestos Abatement Regulations (Reg. 111/98)	Non-friable black tar sealant on the vent on exterior of the cabin (limited quantity). Note that asbestos was detected in the tar on a vent currently on the ground. There are other vents present on the exterior of the cabin. If black tar sealant is present around the windows and/or doorways when removed, it should be sampled for asbestos or treated as a ACM. Black felt and tar on the roof of the outhouse (~3m^2). Given that asbestos was detected in the roofing materials on the outhouse, it can be assumed that the roof materials of the cabin contains asbestos, or samples can be collected during demolition to assess handling and disposal options for the roofing materials (~65 m^2). Note that other possible hidden and inaccessible ACMs have the potential to be present within the accommodations cabin but were not identified or could not be sampled during the Pre-Demolition HBMA site visit.	ACMs cannot be disposed of at a Construction & Demolition Site; however, these materials can be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility. The transportation and disposal of asbestos should be conducted in accordance with the NL Asbestos Abatement Regulations (Reg. 111/98) and with Standard Operating Procedures (SOPs) for disposal of ACMs at the landfill.

Table 6-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
LBPs	Guidance Document for Leachable Toxic Waste and Disposal (GD-PPD-26.1) Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Surface Coating Materials Regulations (SOR/2016-193)	LBP (grey) on exterior door trim) of accommodations cabin. Same grey paint is present on floor of the cabin. LBP (grey) on plywood on exterior of outhouse.	Paints that were analyzed for lead and contained <5,000 mg/kg lead, may be disposed of at a Regional Solid Waste Disposal Facility (landfill), provided permission is obtained from the landfill owner/operator.
Potential UFFI	Federal HPA (R.S.1985, c. H-3)	None identified	UFFI is permitted to be bagged and transported to an approved WDS and disposed in the special waste area of the site.
Mould	Mould Guidelines for the Canadian Construction Industry, Canadian Construction Industry (CCI), 2004; Mould Abatement Guidelines, Environmental Abatement Council of Ontario (EACO), 2010	Possible mould observed on walls and ceiling in the accommodations cabin. It was unsafe to enter the building to obtain a sample.	All mould impacted materials may be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility.
Potential ODS	Federal Halocarbon Regulations (SOR/2003-289)	A chest freezer was observed in the accommodations cabin. Wood were no able to access the building to inspect the freezer to determine the type of refrigerant present within the freezer.	Materials containing ODS should be received by a contractor or facility that has the proper approvals to remove, handle and/or dispose of ODS. The remaining materials can be disposed of at a recycling facility, provided permission is obtained from the facility.

Table 6-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
Potential Lead-Containing Materials/ Equipment	Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149) Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301)	Potential lead-containing solder (piping and plumbing). Other lead containing materials may also be present.	Lead-containing materials and equipment can be disposed of at a metal recycling or hazardous waste disposal facility, in accordance with applicable regulations. The transportation and disposal of hazardous lead-containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.
Potential Mercury-Containing Materials/ Equipment	Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Products Containing Mercury Regulations (SOR/2014-254)	Fluorescent light fixtures are present inside accommodations cabin. The light tubes in fluorescent light fixtures often contain limited quantities of mercury in a powder or vapour form. Other mercury containing materials may also be present.	Mercury-containing materials and equipment can be disposed of at a recycling or hazardous waste disposal facility, in accordance with applicable regulations. The transportation and disposal of hazardous mercury-containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.

Table 6-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
Potential PCB-Containing Materials/ Equipment	Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149) Federal TDG Act (1992, c. 34) Guidance Document for Leachable Toxic Waste and Disposal (GD-PPD-26.1) Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301) PCB Regulations (SOR/2008-273) PCB Waste Export Regulations (SOR/97-109) Regulations Amending the PCB Regulations (SOR/2010-57)	Fluorescent light fixtures are present inside accommodations cabin. The ballast of the fluorescent light fixtures may contain PCBs. Other PCB containing materials may also be present.	Any PCB-containing materials and equipment should be handled, decontaminated, transported and disposed of as per current Federal and Provincial acts and regulations. Any PCB-containing materials and equipment requiring removal from the building should be transported and disposed of by a registered hazardous waste transporter in accordance with applicable regulations. The transportation and disposal of PCB containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.
Silica-Containing Materials	NL OHS Act (RSNL1990 Chapter O-3) NL OHS Regulations (5/12)	Asphalt shingles, brick and concrete.	These materials can be disposed of at a Solid Waste Disposal Facility (landfill).
Potential Radioactive Materials	Federal TDG Act (1992, c. 34)	Wood were no able to assess whether or not there were any smoke detectors present within accommodations cabin, due to unsafe access.	Smoke detectors that contain low level radioactive materials must be transported, as per Federal TDG Regulations, to a licensed disposal facility.

APPENDIX A6

FIGURES

NOTES:
1. ALL DIMENSIONS ARE IN METERS.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF NEWFOUNDLAND LABRADOR HYDRO AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.

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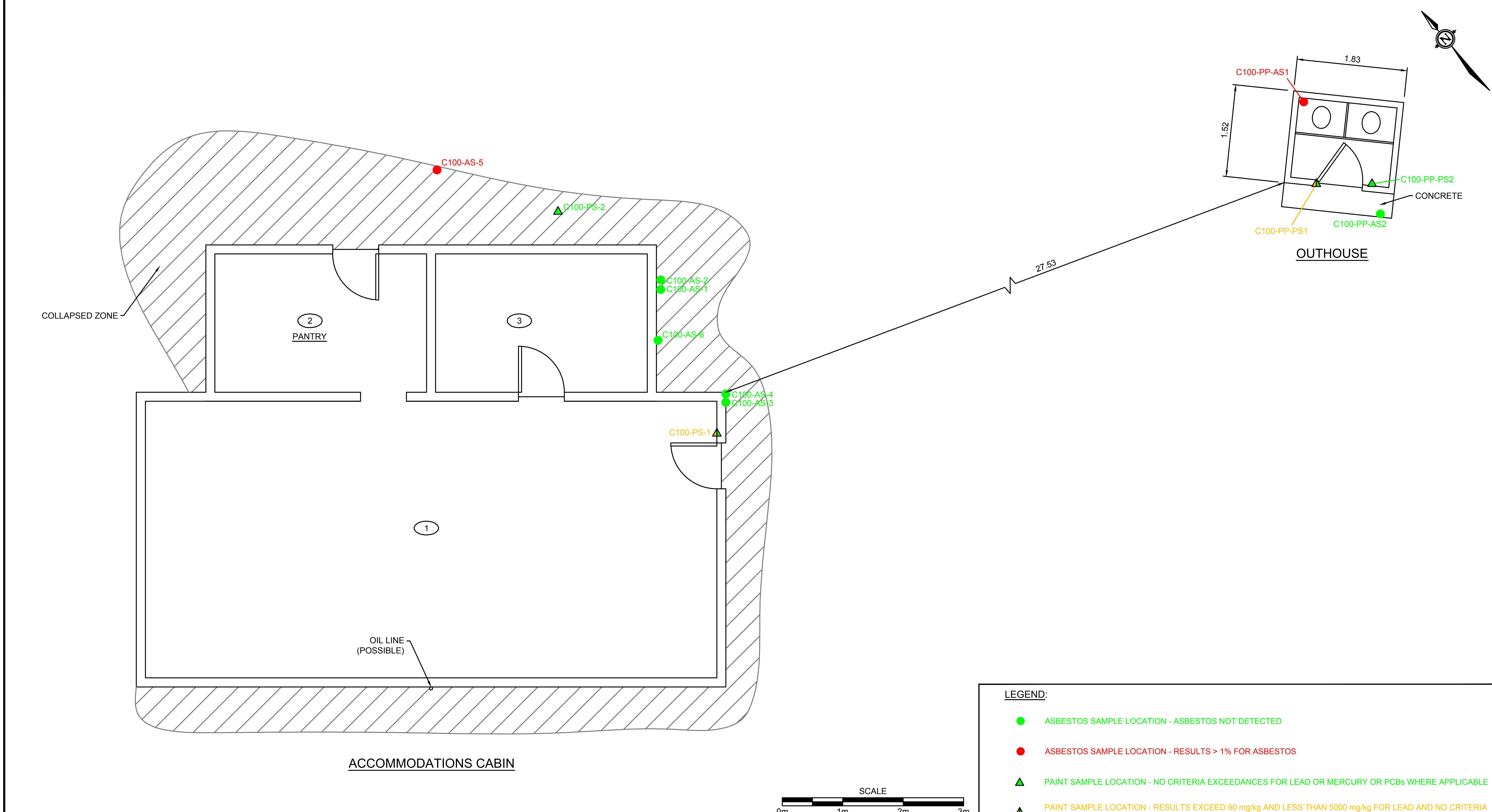
Drawn by:	T. Rideout
Approved by:	C. Finney
Scale:	As Shown
Project:	Pre-Demolition Hazardous Building Materials Assessment, Former Construction Camp Sites, Bay d'Espoir - Avalon Transmission Line, NL
Title:	Site Location Plan (Aerial) - Camp 100 Site
Date:	April 2019
Project No.	TF18104243.2000
Rev. No.	0
Figure No.	6.1



LEGEND:

- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED
- ASBESTOS SAMPLE LOCATION - RESULTS > 1% FOR ASBESTOS
- PAINT SAMPLE LOCATION - NO CRITERIA EXCEEDANCES FOR LEAD OR MERCURY OR PCBs WHERE APPLICABLE
- PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY OR PCBs WHERE APPLICABLE

NOTES:

1. ALL DIMENSIONS ARE IN METERS.
2. DO NOT SCALE FROM FIGURE.
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	wood.
Drawn by:	T. Rideout
Approved by:	C. Finney
Scale:	As Shown
Project:	Pre-Demolition Hazardous Building Materials Assessment, Former Construction Camp Sites, Bay d'Espoir - Avalon Transmission Line, NL
Title:	Sample Location Plan - Camp 100 Site
Date:	April 2019
Project No.	TF18104243.2000
Rev. No.	0
Figure No.	6.2

APPENDIX B6

PHOTOGRAPHIC RECORD


Photo 1: View of the accommodations cabin at Camp 100, looking northwest.


Photo 2: View of the accomodations cabin at Camp 100, looking north.


Photo 3: View of the accomodations cabin at Camp 100, looking northeast.


Photo 4: View of the accomodations cabin at Camp 100, looking east.

Photo 5: View of the accomodations cabin at Camp 100, looking east.

Photo 6: View of the bunk area of the accomodations cabin at Camp 100.

Photo 7: View of the kitchen area of the accomodations cabin at Camp 100.

Photo 8: View of the pantry area in the accommodations cabin at Camp 100.


Photo 9: View of collapsed room, on eastern corner of the accomodations cabin.


Photo 10: View of outhouse, looking east.


Photo 11: View of the exterior of the outhouse at Camp 100.


Photo 12: View of the interior of the outhouse at Camp 100.

Photo 13: View of bulk material sample C100-AS-1, grey mortar, cabin exterior.

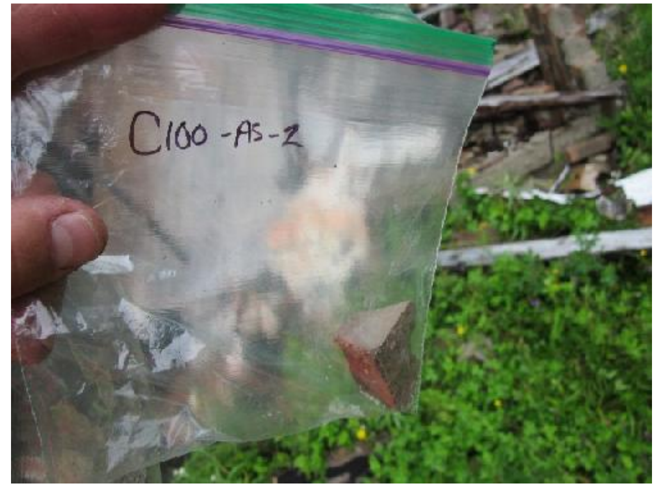

Photo 14: View of bulk material sample C100-AS-2, brown brick, cabin exterior.

Photo 15: View of bulk material sample C100-AS-3, grey mortar, cabin exterior.

Photo 16: View of bulk material sample C100-AS-4, red brick, cabin exterior.

Photo 17: View of bulk material sample C100-AS-5, black tar, cabin exterior. **21.2 % Crysotile Asbestos**

Photo 18: View of bulk material sample C100-PP-AS-6, black pressed board, outhouse exterior.

Photo 19: View of bulk material sample C100-PP-AS1, black felt and tar, outhouseexterior. **1.1 % Crysotile Asbestos**

Photo 20: View of bulk material sample C100-PP-AS2, concrete, outhouse exterior.

Photo 17: View of paint sample C100-PS-1, grey, cabin interior.

Photo 18: View of paint sample C100-PS-2, white, cabin interior.

Photo 19: View of location of paint sample C100-PP-1, grey, outhouse exterior.

Photo 20: View of location of paint sample C100-PP-2, white, outhouse interior.

APPENDIX C6

SAMPLE AND ANALYTICAL SUMMARY TABLES

Table C6-1: Bulk Sample Descriptions and Asbestos Analytical Results (Camp 100)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Sample Description	Layers Analyzed	Analytical Result
C100-AS-1	Exterior	Exterior	13	Wall	Grey mortar (on brown brick)	Mortar	ND
C100-AS-2	Exterior	Exterior	14	Wall	Brown brick	Brick	ND
C100-AS-3	Exterior	Exterior	15	Wall	Grey mortar (on red brick)	Mortar	ND
C100-AS-4	Exterior	Exterior	16	Wall	Red brick	Brick	ND
C100-AS-5	Exterior	Exterior	17	Wall	Tar sealant	Tar sealant	21.20%
C100-AS-6	Exterior	Exterior	18	Wall	Black pressed board	Board	ND
C100-PP-AS1	Exterior	Exterior	19	Roof	Black felt and tar	Felt and tar	1.10%
C100-PP-AS2	Exterior	Exterior	20	Foundation	Concrete	Concrete	ND

Notes:

ACM: Asbestos-Containing Material

DJC: Drywall Joint Compound

VFT: Vinyl Floor Tile

VSF: Vinyl Sheet Flooring

ND: Non-Detect (<0.1%)

*Brown paper and tar analyzed as one layer because the laboratory could not separate these materials.

Bold and underlined value indicates asbestos was detected but is below 1% by dry weight.

Shaded value exceeds 1% asbestos by dry weight and is considered to be an ACM as outlined in the Newfoundland and Labrador Asbestos Abatement Regulations (Reg. 111/98).

Table C6-2: Paint Sample Descriptions and Lead Analytical Results (Camp 100)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Lead (mg/kg)
C100-PS1	Exterior	Exterior	17	Wall	Wood Door and Trim	Grey on wood (sample includes wood)	15.0	**<u>489</u>**
C100-PS2	1	Kitchen/Bunks	18	Wall	Plywood	White on plywood (sample includes plywood)	15.0	17
C100-PP-PS1	Interior	Outhouse	19	Floor	Plywood	Grey on plywood (sample includes plywood)	15.0	**<u>101</u>**
C100-PP-PS2	Interior	Outhouse	20	Wall	Plywood	White on plywood (sample includes plywood)	15.0	22

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

HPA: Hazardous Products Act

<u>Bold and underlined value exceeds Federal HPA criterion (90 mg/kg).</u>

Shaded value exceeds former Federal HPA criterion (5,000 mg/kg).

Table C6-3: Paint Sample Descriptions and Mercury Analytical Results (Camp 100)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Mercury (mg/kg)
C100-PS1	Exterior	Exterior	17	Wall	Wood Door and Trim	Grey on wood (sample includes wood)	0.05	0.52
C100-PS2	1	Kitchen/Bunks	18	Wall	Plywood	White on plywood (sample includes plywood)	0.05	3.83
C100-PP-PS1	Interior	Outhouse	19	Floor	Plywood	Grey on plywood (sample includes plywood)	0.05	0.21
C100-PP-PS2	Interior	Outhouse	20	Wall	Plywood	White on plywood (sample includes plywood)	0.05	1.08

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

HPA: Hazardous Products Act

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guideline

Bold and underlined value exceeds Federal HPA criterion (10 mg/kg).

Shaded value exceeds CCME CSQG for an industrial site (50 mg/kg).

Table C6-4: Paint Sample Descriptions and PCB Analytical Results (Camp 100)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Total PCB (mg/kg)
C100-PS1	Exterior	Exterior	17	Wall	Wood Door and Trim	Grey on wood (sample includes wood)	0.5	<0.5
C100-PS2	1	Kitchen/Bunks	18	Wall	Plywood	White on plywood (sample includes plywood)	0.5	<0.5
C100-PP-PS1	Interior	Outhouse	19	Floor	Plywood	Grey on plywood (sample includes plywood)	0.5	<0.5
C100-PP-PS2	Interior	Outhouse	20	Wall	Plywood	White on plywood (sample includes plywood)	0.5	<0.5

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guideline

NL MAE: Newfoundland and Labrador Department of Municipal Affairs and Environment

TDG: Transportation of Dangerous Goods

Bold and underlined value exceeds CCME CSQG for an industrial site (33 mg/kg).

Shaded value exceeds the criterion for PCB solid provided in the NL MAE Leachable Toxic Waste, Testing and Disposal Guidance Document and the TDG Regulations (50 mg/kg).

APPENDIX D6

ROOM-BY-ROOM INSPECTION SHEETS

Building	Room #	Floor #	Room Description	Dimensions
Camp 100	1	1	Kitchen	L = 24' W = 24' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	WOOD			
Walls (include window caulking)	WOOD			
Ceiling	WOOD			
Paint (and substrate)	Walls: White Ceiling: white Floor: grey Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	— Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: 2 → 1'x4' 2bulb	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	4 → incandescent			
Thermostats	Manufacturer Colour, Shape — Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	Water + propane copper lines			
Mould / Water Staining	Area impacted			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials ** Building ready to collapse, No access **			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
Camp 100	2	1	Pantry	L = 8' W = 8' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Wood			
Walls (include window caulking)	Wood			
Ceiling	Wood			
Paint (and substrate)	Walls: White Ceiling: White Floor: grey Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	— Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	1 → incandescent			
Thermostats	Manufacturer Colour, Shape — Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,				
Mould / Water Staining	Area impacted			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials * NO ACCESS *			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
Camp 100	3	1	Storage	L = 8' W = 8' H = 8'

	Description		Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Same as Room 2				
Walls (include window caulking)					
Ceiling					
Paint (and substrate)	Walls: Ceiling: Floor: Other:				
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	Fire Door Manufacturer: Fire Door Serial #:				
Piping / Mechanical Equipment					
Fluorescent Lighting	Ballast Manufacturer: Serial #:		Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)					
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted Dial	Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,					
Mould / Water Staining	Area impacted				
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext				
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials * NO ACCESS **				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
Camp 100			Exterior	L = 32' W = 24' H =

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
~~Floor~~ Foundation	Cinder block			
Walls (include window caulking)	Red brick on 2/3 Brown brick on 1/3			
~~Ceiling~~	black shingles			
Paint (and substrate)	Walls: Ceiling: Floor: — Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	Fire Door Manufacturer: Fire Door Serial #: —			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	2 → incandescent,			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted — Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	—			
Mould / Water Staining	Area impacted			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials * Limited Access **			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
Camp 100			Outhouse	L = 6' W = 5' H = 7'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Concrete & Wood			
Walls (include window caulking)	WooD interior & Exterior			
Ceiling	Wood Felt on roof			
Paint (and substrate)	Walls: Grey Ext, white int. Ceiling: White Floor: Other: –			
Insulation (Piping/Mechanical/Wall/Ceiling/Ducting)	Fire Door Manufacturer: – Fire Door Serial #:			
Piping / Mechanical Equipment	–			
Fluorescent Lighting	Ballast Manufacturer: Serial #: –	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	1 incandescent			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted – Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	–			
Mould / Water Staining	Area impacted –			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext –			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials –			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

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APPENDICES

7.0 MEDONNEGONIK CAMP

Medonnegonik Lake Camp is located approximately 24 km east of the Town of Milltown-Head of Bay d'Espoir, NL and is accessed via gravel access road from the Bay d'Espoir Highway (Route 360) (refer to Figure 7.1, Appendix A7). The site is comprised of an accommodations cabin, a helicopter pad and an outhouse.

7.1 BUILDING DESCRIPTION

The accommodations cabin is a one-storey, rectangular structure with a footprint area of approximately 66 m^2 (refer to Photos 1 to 8, Appendix B7). The floor plan of the cabin consists of a kitchen, a bathroom and two bedrooms (refer to Figure 7.2, Appendix A7). The foundation of the accommodations cabin consists of concrete block footings and there is a dirt floor crawl space beneath the accommodations cabin (refer to Photo 12, Appendix B7). The structure of the accommodations cabin consists of brick. The exterior walls on the accommodations cabin are finished with brick and the roof is finished with asphalt shingles. The window and exterior door openings on the accommodations cabin are barricaded with metal covers for security purposes (refer to Photos 1 to 4, Appendix B7). Interior wall and ceiling finishes in the accommodations cabin consists of painted plywood. Floors/floor finishes consist of plywood. Fluorescent lighting was observed on the interior of the cabin. The accommodations cabin is not currently heated. There were building upgrades completed at the site, reportedly in the mid 1990's. The new areas are brown brick and the original areas are red brick (refer to Photos 2 and 3, Appendix B7).

The outhouse is a one-storey, rectangular structure with a footprint area of approximately 3 m^2. The foundation and structure of the outhouse consists of wood framing and concrete. The exterior walls on the outhouse are finished with plywood and the roof is finished with asphalt shingles (refer to Photos 9 and 10, Appendix B7). Interior wall and ceiling finishes in the outhouse consist of painted plywood. Floor finishes consist of plywood. The outhouse does not contain any lighting or heating.

The helicopter pad is located to the northwest of the accommodations cabin and is comprised of treated wood timbers (refer to Photo 13, Appendix B7).

A description of accommodations cabin is outlined in Table 7-1 and a description of the outhouse is outlined in Table 7-2. Photographs of the buildings are provided in Appendix B7.

Table 7-1: Site Building Description – Accommodations Cabin

Building Name	Accommodations cabin	Photo No. (Appendix B7)
Date of Construction	Approximately late 1960's/early 1970's	-
Date of Renovations	Unknown	-
No. of Stories	One	1 to 4
Crawl Space (Yes/No)	Yes	12
Attic (Yes/No)	Yes	-
Type of Structure	Wood Frame and bricks	1 to 4
Type of Foundation	Wood Beams and concrete blocks	12
Exterior	Red and Brown brick	1 to 4
Window/Door Frames	Painted Metal and Wood	1 to 4
Exterior Doors	Painted Metal	1 and 4

Table 7-1: Site Building Description – Accommodations Cabin

Building Name	Accommodations cabin	Photo No. (Appendix B7)
Roofing Materials	Asphalt Shingles	4
Interior Walls Finishes	Painted Plywood	5 to 6
Interior Ceiling Finishes	Plywood	5, 6 and 8
Floor Finishes	Plywood	5 and 7
Interior Doors	NA	-
Interior Lighting	Fluorescent and Incandescent	6 and 8
Exterior Lighting	Incandescent	1
Heating	Propane stove	5

Table 7-2: Site Building Description – Outhouse

Building Name	Outhouse	Photo No. (Appendix B7)
Date of Construction	Approximately late 1960's/early 1970's	-
Date of Renovations	Unknown	-
No. of Stories	One	9
Crawl Space (Yes/No)	No	-
Attic (Yes/No)	No	-
Type of Structure	Wood Frame	9 and 10
Type of Foundation	Wood Frame	-
Exterior	Plywood	9
Window/Door Frames	NA	-
Exterior Doors	Painted wood	9
Roofing Materials	Asphalt Shingles	9
Interior Walls Finishes	Painted Plywood	10
Interior Ceiling Finishes	Plywood	-
Floor Finishes	NA	-
Interior Doors	NA	-
Interior Lighting	NA	-
Exterior Lighting	NA	-
Heating	NA	-

7.2 ROOM DESIGNATION

Each room at Medonnegonik Camp was assigned a specific room name. The designated room names are presented in Table 7-3 and graphically illustrated on the sample location plan (refer to Figure 7.2, Appendix A7).

Table 7-3: Assigned Rooms

Level No.	Room Name – Accommodations Cabin	Room Number
1	Kitchen/Bunk Area	Room 1
1	Bathroom	Room 2
1	Bedroom/Portch	Room 3
1	Bedroom	Room 4
1	Outhouse	Outhouse

7.3 FINDINGS

The findings documented in this section are based on observations made by Wood personnel at the time of the site visit on August 7, 2018 and the results of laboratory analyses of samples collected from Medonnegonik Camp. During the Pre-Demolition HBMA site visit, Wood personnel were accompanied by a representative of Hydro (Mr. Wayne Lidster). Copies of room-by-room inspection sheets for the accommodations building and outhouse are provided in Appendix E6. Photos of the samples collected from the accommodations building and outhouse during the site visits are provided in Appendix B7.

7.3.1 Asbestos-Containing Materials (ACMs)

There are over 3,000 ACMs that are commercially available, which can be divided into two broad categories: friable and non-friable. ACMs were discontinued from use in Canada in the late 1970s/early 1980s, although non-friable asbestos is still found in many more recent buildings.

During the Pre-Demolition HBMA site visit, a total of 11 building material samples (MDX-AS1 to MDX-AS11) were collected from the accommodations cabin and one (1) building material sample (MDX-PP-AS1) from the outhouse (refer to Photos 14 to 25, Appendix B7) and analyzed for asbestos content. Bulk sample descriptions and asbestos analytical results are summarized in Table C7-1, Appendix C7. Sample locations and analytical results are graphically illustrated on Figure 7.2, Appendix A7.

7.3.1.1 Friable Materials

Friable ACMs are defined as materials that can be crumbled, pulverized and reduced to powder when dry using hand pressure. Typical friable materials include acoustical or decorative spray applications, fireproofing and thermal insulation.

7.3.1.1.1 Spray-Applied Fireproofing, Insulation and Texture Finishes

There were no spray-applied fireproofing, insulation or texture finishes observed in the accommodations cabin or outhouse during the Pre-Demolition HBMA site visit; therefore, no samples of these materials were collected for analysis.

7.3.1.1.2 Building and Thermal System Insulation

During the Pre-Demolition HBMA site visit, pink fiberglass insulation was observed between the particle board and plywood in the walls of the accommodations cabin. During the Pre-Demolition HBMA site visit, one (1) sample of black paper on pink fiberglass insulation (MDX-AS1) was collected from the wall of the accommodations cabin and analyzed for asbestos content (refer to Photo 14, Appendix B7). Asbestos was not detected in the insulation sample collected from the accommodations cabin.

7.3.1.1.3 Non-Friable and Potentially Friable Materials

Non-friable ACMs are hard or manufactured products such as floor tiles, fire blankets, pre-formed manufactured cementitious insulation and wallboards, pipes, and siding, wherein the asbestos fibres are bound to the substrate. Note that although a product may be considered non-friable when new, the product may release fine dust when disturbed (e.g., deterioration, removal, renovations) and the free dust is considered friable.

7.3.1.1.4 Ceiling Tile

There were no ceiling tiles observed at Medonnegonik Camp during the Pre-Demolition HBMA site visit; therefore, no samples of ceiling tile were collected for analysis.

7.3.1.1.5 Drywall Joint Compound

There was no drywall joint compound observed at Medonnegonik Camp during the Pre-Demolition HBMA site visit; therefore, no samples of drywall joint compound were collected for analysis.

7.3.1.1.6 Vinyl Flooring Products and Mastics

There was no vinyl flooring or products observed at Medonnegonik Camp during the Pre-Demolition HBMA site visit; therefore, no samples of vinyl flooring or products were collected for analysis.

7.3.1.1.7 Baseboard, Carpet and Stair Tread Adhesives/Mastics

There were no baseboard, carpet or stair tread adhesives/mastics observed at Medonnegonik Camp during the Pre-Demolition HBMA site visit; therefore, no samples of these types of adhesives/mastics were collected for analysis.

7.3.1.1.8 Roofing Products

During the Pre-Demolition HBMA site visit, one (1) sample of black shingle and tar (MDX-AS10) and one (1) sample of green/black shingle and tar (MDX-AS11) was collected from the roof of the accommodations cabin and one (1) sample of black shingle and tar (MDX-PP-AS1) was collected from the roof of the accommodations cabin and analyzed for asbestos content (refer to Photos 23 to 25, Appendix B7). Asbestos was detected in MDX-PP-AS1 containing 0.79 % chrysotile asbestos. According to the NL asbestos abatement regulations (Reg. 111/98), this material is not considered asbestos-containing materials.

It is important to note that, due to height and safety constraints, no samples of roofing, building materials around roof penetrations (e.g., caulking or sealants around vents or electrical conduit) or roof seams were collected from the accommodations cabin for analysis.

7.3.1.1.9 Caulking/Sealant

During the Pre-Demolition HBMA site visit, one (1) sample of white caulking (MDX-AS7) was collected from around the brick on the accommodations cabin and analyzed for asbestos content (refer to Photo 20, Appendix B7). Asbestos was not detected in the caulking sample collected from the accommodations cabin.

7.3.1.1.10 Mortar, Grout and Other Cementitious Materials

During the Pre-Demolition HBMA site visit, one (1) sample of grey mortar on red brick (MDX-AS3), one (1) sample of red brick (MDX-AS4), one (1) sample of concrete block (MDX-AS5), one (1) sample of grey mortar on concrete block (MDX-AS6), one (1) sample of brown brick (MDX-AS8) and one (1) sample of grey mortar on brown brick (MDX-AS9) collected from the exterior of the accommodations cabin and analyzed for asbestos content (refer to Photos 16, 17, 18, 19, 21 and 22, Appendix B7). Asbestos was not detected in the brick, concrete and mortar samples analyzed.

7.3.1.1.11 Fire-Rated Doors

Fire-rated doors and door frames were not observed during the Pre-Demolition HBMA site visit.

7.3.1.1.12 Other Potential ACMs

During the Pre-Demolition HBMA site visit, one (1) sample of black pressed board and tar paper (MDX-AS2) from the exterior of the accommodations cabin and analyzed for asbestos content (refer to Photo 15, Appendix B7). Asbestos was not detected in the pressed board / tar paper sample analyzed.

Other potential ACMs were observed (or suspected to be present) and were not sampled due to the nature of the materials and/or hazards associated with sampling these materials. These materials included, but are not limited to, electrical and mechanical components and insulators such as wiring and gaskets, heat shields inside incandescent/fluorescent light fixtures, and caulking or sealants around or along roof seams, vent pipes, electrical conduits or other penetrations (refer to Photos 4, 5, 6 and 8, Appendix B7).

Other possible hidden and inaccessible ACMs have the potential to be present within the accommodations cabin but were not identified during the Pre-Demolition HBMA site visit. These possible ACMs could include possible fireproofing materials in the wall or ceiling cavities, piping/pipe joint sealants/gaskets and packing associated with cast iron pipe joints, fire rated structures or building materials, vapour barriers in walls, undercoatings on sinks, interior heat resistant components or gaskets inside appliances, concrete lining the interior of hot water tanks, and underground infrastructure or piping.

7.3.2 Paint Additives

Lead compounds have been used in paint as pigment and durability additives since the early 1800s. Mercury compounds have been used in paint as anti-microbial additives up until the 1990s. PCBs have been used in paint as plasticizers and corrosion resistance additives from the 1950s to the 1970s.

During the Pre-Demolition HBMA site visit, three (3) samples (MDX-PS1 to MDX-PS3) were collected from painted surfaces of the accommodations cabin and one (1) sample (MDX-PP-PS1) collected from painted surfaces of the outhouse and analyzed for lead, mercury and PCB content (refer to Photos 26 to 29, Appendix B7). Paint sample descriptions and lead, mercury and PCBs analytical results are summarized in Tables C7-2 to C7-4, Appendix C7. Sample locations and analytical results are graphically illustrated on Figure 7.2, Appendix A7.

7.3.2.1 Lead in Paint

Concentrations of lead in the three (3) samples (MDX-PS1 to MDX-PS3) collected from painted surfaces of the accommodations cabin and one (1) sample (MDX-PP-PS1) collected from the outhouse ranged from 109 mg/kg to 1,110 mg/kg (refer to Table C7-2, Appendix C7). All four (4) paint samples (MDX-PS1 to MDX-PS3 and MDX-PP-PS1) contained lead at concentrations above the Federal HPA criterion of 90 mg/kg and below the former Federal HPA criterion of 5,000 mg/kg (refer to Table C7-2, Appendix C7).

7.3.2.2 Mercury in Paint

Concentrations of mercury in the three (3) samples (MDX-PS1 to MDX-PS3) collected from painted surfaces of the accommodations cabin and one (1) sample (MDX-PP-PS1) collected from the outhouse ranged from 0.06 to 7.87 mg/kg, and therefore, the concentrations of mercury in these samples were below the Federal HPA criterion (10 mg/kg) (refer to Table C7-3, Appendix C7).

7.3.2.3 PCBs in Paint

PCBs were not detected (<0.5 mg/kg) in any of the paint samples analyzed, and therefore, were below the CCME CSQG for PCBs in soil at an industrial site (33 mg/kg) and the applicable criterion for PCB solid (50 mg/kg) (refer to Table C7-4, Appendix C7).

7.3.3 Urea Formaldehyde Foam Insulation (UFFI)

Visual indicators suggesting the potential presence of UFFI were not observed at Medonnegonik Camp. The nature of the insulation in the walls and ceilings throughout the accommodations cabin consisted of fiberglass insulation.

Since the original date of construction of Medonnegonik (assumed construction commenced the same timeframe as the original transmission line, late 1960's/early 1970's) is unknown, it is possible that UFFI may be present.

In the event that UFFI is present, the CMHC state that "tests show that UFFI is not a source of over-exposure to formaldehyde after the initial curing and release of excess gas". The general view based on studies concerning formaldehyde emissions is that as a product ages, the amount of formaldehyde off-gassed from the product decreases over time. The amount of formaldehyde released is reportedly dependent on temperature, humidity and whether or not the product is exposed to excessive moisture or water.

7.3.4 Suspected Visible Mould Growth (SVG)

Wood inspected the interior areas of the accommodations cabin and outhouse for visual or olfactory evidence of suspected mould. SVG was noted on much of the ceiling and wall surfaces inside the accommodations cabin during the Pre-Demolition HBMA site visit. A sample, MDX-MS1, was collected in Room 3 (refer to Figure 7.2, Appendix A7 and Photo 30, Appendix B7).

The results of mould analysis determined that bulk sample MDX-MS1 contained *Cladosporium Acremonium* mould with sparse growth (refer to Table C7-5, Appendix C7).

7.3.5 Mercury-Containing Thermostats

Thermostats were not identified inside the accommodations cabin at Medonnegonik Camp during the Pre-Demolition HBMA site visit.

7.3.6 PCB-Containing Light Ballasts

Fluorescent and incandescent light fixtures were observed on the interior of the accommodations cabin and incandescent light fixtures were observed on the exterior of the accommodations cabin, as observed from the exterior of the cabin, during the Pre-Demolition HBMA site visit (refer to Photos 1, 6 and 8, Appendix B7). No light ballasts were inspected during the Pre-Demolition HBMA site visit.

7.3.7 Potential Sources of ODS and Halocarbons

During the Pre-Demolition HBMA, potential sources of ODS was identified within the accommodations cabin. Results of the ODS inspection is summarized in Table 7-4.

Table 7-4: Potential Sources of ODSs

Item	Manufacturer	Model (Serial No.)	Location Observed	Photo No. (Appendix B2)	Refrigerant	Potential ODS
Freezer	Woods	WE25-T6	Room 3	32	R12	Yes
Refrigerator	Danby	D730	Room 1	5	R12	Yes

Based on observations made during the site visit, ODSs are present in the accommodations cabin in the form of refrigerant R12 contained in a refrigerator located in Room 1 (refer to Photo 5, Appendix B7) and a freezer located in Room 3 (refer to Photo 32, Appendix B7). This refrigerant (R12) is a hydrochlorofluorocarbon (HCFC) and is regulated under the Federal Halocarbon Regulations.

Fire extinguishers were not observed at Medonnegonik during the Pre-Demolition HBMA site visit.

7.3.8 Other Potentially Hazardous Building Materials or Substances

Other potentially hazardous building materials or substances identified during this assessment are presented in the following sections.

7.3.8.1 Lead-Containing Materials and Equipment

Lead is typically associated with plumbing solder and older pipe materials (e.g., cast iron pipe joints), as well as products such as radiation protective shielding and lead-acid batteries. Lead can also be present in steel and iron primer, industrial electrical jacketing, roof flashing and tank linings.

Since the actual date that Medonnegonik Camp was constructed is unknown (assumed to be late 1960's/early 1970's), it is possible that lead solder is present in plumbing and piping (i.e., cast iron and copper piping) in the accommodations cabin.

7.3.8.2 Mercury-Containing Materials and Equipment

The light tubes and bulbs in HID and fluorescent light fixtures often contain limited quantities of mercury in a powder or vapour form. Fluorescent light fixtures were observed inside the accommodations cabin during the Pre-Demolition HBMA site visit and the light tubes may contain mercury (refer to Photo 6, Appendix B7).

7.3.8.3 PCB-Containing Materials and Equipment

According to the USEPA, PCBs may be present in caulking used in windows, door frames, masonry columns and other building materials in buildings built or renovated between 1950 and 1979. In addition, and as mentioned previously, insulating fluids and cooling oils in electrical equipment (i.e., transformers, fluorescent light ballasts, capacitors, etc.) often contained PCBs until around 1980.

7.3.8.4 Treated Wood Chemicals

The chemicals that are used to protect and preserve wood products from insect attack and fungal decay may pose risks to human health and the environment. Depending on the wood treatment used, treated wood may be considered a hazardous waste upon disposal. The NL Department of Environment and Conservation (currently the NL MAE), 2015 Guidance Document for Treated Wood Waste Disposal (GD-PPD-075.1) provides landfill disposal standards for "pressure treated" inorganic preservatives (i.e., arsenic and chromium) and creosote (i.e., total cresol and benzo(a)pyrene) and chlorophenolic (i.e., pentachlorophenol) formulations used to preserve wood. These landfill disposal standards for treated wood waste (TWW) are used to assess the results of leachability testing to determine disposal options for treated wood to be removed during renovation or demolition activities.

During the Pre-Demolition HBMA site visit, suspected "creosote treated" inorganic (i.e., chromated copper arsenate (CCA)) preservatives appear to have been applied to wood that was used as the foundation of the outhouse. One (1) sample of treated wood (MDX-TW1) was collected from the foundation and analyzed for leachable benzo(a)pyrene and leachable cresols to determine whether or not the treated wood would be considered hazardous waste upon removal from the site, if required (refer to Photo 31, Appendix B7). The bulk sample description and leachable treated wood parameter analytical results are summarized in Table C7-6, Appendix C7. The sample location and analytical results are graphically illustrated on Figure 7.2, Appendix A7.

Leachable benzo(a)pyrene and leachable cresols were not detected above the RDLs in the treated wood sample MDX-TW1; therefore, the concentrations of these leachable treated wood parameters were below the TCLP landfill disposal standards for leachable benzo(a)pyrene (1 µg/L) and leachable cresols (20,000 µg/L) provided in the NL Department of Environment and Conservation (currently the NL MAE), 2015 Guidance Document for Treated Wood Waste Disposal (GD-PPD-075.1).

7.3.8.5 Silica

According to the CPWR – The Center for Construction Research and Training, many common construction materials contain silica including, asphalt, brick, cement, concrete, drywall, grout, mortar, stone, sand and tile. The dust created by cutting, grinding, drilling or otherwise disturbing these materials can contain crystalline silica particles.

Based on the Pre-Demolition HBMA site visit, silica is expected to be present in the exterior brick and concrete used in the construction of the foundation for the accommodations building. Silica may also be present in the asphalt shingles used in the construction of the accommodations cabin and outhouse.

7.3.8.6 Radioactive Materials

Smoke detectors were not observed during the Pre-Demolition HBMA site visit. Smoke detectors observed may contain very small amounts of radioactive material (i.e., Americium 241). Smoke alarms that use radioactive material incorporated in an ionization chamber are called "ion chamber smoke alarms".

7.4 CONCLUSIONS AND RECOMMENDATIONS

Based on observations made and information gathered during the Pre-Demolition HBMA, the following conclusions and recommendations are made with respect to the potential and actual presence of hazardous building materials at Medonnegonik Camp.

7.4.1 ACMs

Results of the asbestos sampling and analytical program for the Medonnegonik Camp revealed that all building materials sampled contained less than 1% asbestos by dry weight, and not considered asbestos-containing.

Other potential ACMs were observed (or suspected to be present) and were not sampled due to the nature of the materials and/or hazards associated with sampling these materials. These materials included, but are not limited to:

- Electrical and mechanical components and insulators such as wiring and gaskets.
- Heat shields inside incandescent/ fluorescent light fixtures.
- Caulking or sealants around or along roof seams, vent pipes, electrical conduits or other penetrations.

Other possible hidden and inaccessible ACMs have the potential to be present within the buildings at Medonnegonik Camp but were not identified during the Pre-Demolition HBMA site visit. These possible ACMs could include concrete leveling compound (existing concrete foundation), possible fireproofing materials in the wall or ceiling cavities, piping/pipe joint sealants/gaskets and packing associated with cast iron pipe joints, fire rated structures or building materials, vapour barriers in walls, undercoatings on sinks, interior heat resistant components, and underground infrastructure or piping.

If other potential ACMs that were not sampled as part of this assessment are encountered in the future, these materials should be treated as ACMs or samples should be collected and tested to verify asbestos content. This should be done as soon as these materials are encountered and before these materials are disturbed. This includes materials that are currently concealed by walls and ceiling systems.

In accordance with the NL Asbestos Abatement Regulations (Reg. 111/98), which provide the legislative requirements for safe handling of ACMs in workplaces in the Province of NL, the following is recommended:

- Safe work procedures shall be established.
- All buildings constructed during the period when asbestos was readily used in construction (generally prior to the early 1980s) or any buildings that are suspected as having asbestos must have a written assessment and management plan (where applicable) for potential ACMs.
- Materials suspected of containing asbestos are required to be handled as ACMs, until analysis by a competent laboratory determines whether or not it does contain asbestos.
- Prior to general demolition, all ACMs must be safely removed from the building and disposed of in accordance with appropriate environmental guidelines by an asbestos abatement contractor registered with the Occupational Health and Safety (OHS) Division of Service NL.
- Most work involving ACMs (i.e., disturbance, removal and encapsulation) must be conducted by a contractor registered with the OHS Division of Service NL.
- ACMs in good condition should be inspected on an annual basis.
- ACMs in poor condition should be removed from the building and transported off-site for proper disposal.
- Workers should don adequate respiratory protection and personal protective equipment (PPE) when working with ACMs.

Prior to the removal and/or abatement of any identified ACMs (or any other hazardous building materials), an abatement plan including technical specifications should be designed, prepared and supervised by a qualified professional and should be undertaken by qualified trades, in accordance with applicable standards. Activities involving the disturbance and/or removal of ACMs should be carried out in a manner that ensures asbestos fiber concentrations do not exceed the applicable American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV). ACMs can be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility.

7.4.2 Lead, Mercury and PCBs in Paint

Results of the paint sampling and analytical program revealed the following:

- **Lead in Paint**
  - Concentrations of lead in three (3) samples (MDX-PS1 to MDX-PS3) collected from painted surfaces of the accommodations cabin and one (1) sample (MDX-PP-PS1) collected from the outhouse ranged from 109 mg/kg to 1,110 mg/kg.
  - All four (4) paint samples (MDX-PS1 to MDX-PS3 and MDX-PP-PS1) contained lead at concentrations above the Federal HPA criterion of 90 mg/kg and below the former Federal HPA criterion of 5,000 mg/kg; therefore, these paints are considered to be LBPs, but are not likely to be leachable for lead.

- **Mercury in Paint**
  - Concentrations of mercury in the three (3) samples (MDX-PS1 to MDX-PS3) collected from painted surfaces of the accommodations cabin and one (1) sample (MDX-PP-PS1) collected from the outhouse ranged from 0.06 to 7.87 mg/kg; below the Federal HPA criterion (10 mg/kg). These paints are not considered to be MBPs and are not likely to be leachable for mercury.

- **PCBs in Paint**
  - PCBs were not detected (<0.5 mg/kg) in the three (3) samples (MDX-PS1 to MDX-PS3) collected from painted surfaces of the accommodations cabin and one (1) sample (MDX-PP-PS1) from the painted surfaces of the outhouse, and therefore, were below the CCME CSQG for PCBs in soil at an industrial site (33 mg/kg) and the applicable criterion for PCB solid (50 mg/kg).

Based on the paint sample analytical results, the other paint samples collected from accommodations cabin and outhouse are not likely to be leachable for lead, PCBs or mercury; therefore, should disposal be required (e.g., renovation or demolition activities), the paints analyzed for lead and mercury content may be disposed of at an approved landfill facility, pending landfill and Provincial regulatory approval.

There are potential adverse human health impacts associated with disturbing (e.g., scraping, sanding, burning, etc.) lead, mercury or PCB-containing paint finishes, due to the potential for dust, mist or fumes to be released and inhaled or ingested by workers. Given the lead-based paints were identified at the site, as a precautionary measure, Wood recommends handling these paint finishes, as follows:

- In areas of minor peeling or flaking, the paint should be removed using wet scraping techniques.
- In areas of extensive peeling and flaking, the paint should be removed and more extensive particulate control measures may be required.
- In areas where lead-containing paint finishes are present and in poor condition, an experienced contractor should be utilized for renovating, decommissioning or demolition activities.
- Prior to renovation, dismantling or demolition activities, all areas of extensive peeling and flaking of lead-containing paint finishes and paint debris/dust should be removed and/or remediated to ensure that building occupants/workers are protected from associated dust/particulate.
- Procedures should be implemented to ensure that workers and anyone present in and around areas being renovated, dismantled or demolished are protected. The contractor should also ensure that dust generation and migration is minimized.
- Precautions should be taken to prevent/reduce exposure to paint dust during any disturbance of lead-containing paint finishes, such as wetting the surface of the materials to prevent dust emissions, donning respiratory protection, and cleaning tools and clothing prior to exiting work areas.
- Where possible, lead-containing paint finishes should be removed from metal surfaces prior to welding or cutting these materials.

If potential lead, mercury or PCB-containing paint finishes that were not sampled during this assessment are encountered in future, prior to any disturbance or removal, samples should be obtained and tested to verify concentrations of lead, mercury and PCBs. This includes materials that are currently concealed by walls and ceiling systems.

Any disturbance or removal of lead, mercury or PCB-containing paint finishes that may generate dust or respirable aerosols must conform to the Federal and Provincial OHS Regulations. All work should be carried out by individuals wearing proper PPE. The type of respiratory protection and control measures to be implemented during the removal of these types of paint finishes should be determined by a qualified person and based on the risk level of a particular work activity (i.e., scraping, sanding, abrasive blasting, etc.). Activities involving the disturbance and/or removal of lead, mercury or PCB-containing paint finishes should be carried out in a manner that ensures paint dust concentrations do not exceed the applicable ACGIH TLVs.

7.4.3 Potential UFFI

The sale and installation of UFFI was banned in 1980; since the original date of construction is unknown, it is possible that UFFI may be present in the building. Visual indicators suggesting the potential presence of UFFI were not observed in the building (i.e. only fiberglass insulation was observed). It can be inferred that any UFFI present within the building is unlikely to affect the indoor air quality due to the amount of time that has passed since the insulation was likely installed (i.e., pre-1980) along with the likelihood that formaldehyde has off-gassed over this period of time. It should be noted that, the presence and concentration of formaldehyde cannot be determined or quantified without conducting site-specific testing for formaldehyde.

Although there is currently no Provincial regulations requiring that the removal of UFFI be conducted by a licensed/registered abatement contractor, based on discussions with representatives of the OHS Division of Service NL, it is strongly recommended that this material be abated using similar methods as required for asbestos abatement and that the insulation must be removed in a dry condition. Based on discussions with representatives of the NL MAE, for the purposes of disposal of UFFI, this material is permitted to be bagged and transported to an approved WDS and disposed in the special waste area (unlined area) of the site.

7.4.4 Mould

SVG was noted on much of the ceiling and wall surfaces inside the accommodations cabin during the Pre-Demolition HBMA site visit. The results of mould analysis determined that bulk sample MDX-MS1 contained *Cladosporium Acremonium* mould with sparse growth.

Mould spores are present in all indoor environments and cannot be completely eliminated. Cellulose based building materials provide a nutrient base for many mould species; however, mould cannot grow unless an adequate amount of excess moisture is present. The most effective way to prevent mould growth within a building is the prompt removal of any porous building materials with water damage or mould growth and repairing the building components that lead to the water infiltration.

7.4.5 ODS

Based on observations made during the site visit, ODSs are present in the accommodations cabin in the form of refrigerant R12 contained in a refrigerator located in Room 1 and a freezer located in Room 3. This refrigerant (R12) is a hydrochlorofluorocarbon (HCFC) and is regulated under the Federal Halocarbon Regulations.

Ozone depleting substances (ODS), if present, should be removed by an approved contractor prior to disposing of any cooling and/or refrigeration equipment from the building. The use, storage, operation, maintenance, decommissioning, and disposal of ODS containing equipment, in general, is regulated at both a Provincial and Federal level and must comply with the most recent NL Halocarbon Regulations and the Federal Halocarbon Regulations. The status of the potential ODS containing equipment should be confirmed through a mechanical contractor or consultant.

7.4.6 Potential Lead-Containing Materials/Equipment

Lead solder may be likely to be present in plumbing and piping (e.g., cast iron and copper piping) within the accommodations cabin.

The disturbance, control or disposal of lead-containing material/equipment should be carried out in accordance with applicable criteria/regulations (refer to Section 1.6 of this report). The presence/absence of lead in these materials should be confirmed through a contractor or consultant prior to disturbance or disposal of these materials. Typically, these materials are sent to a metal recycling facility and not a landfill. Removal of lead-containing batteries should be completed in a manner that ensures structural integrity and no loss of fluid from the batteries. Should disposal be required, disposal of lead-containing batteries should be completed in accordance with hazardous waste procedures/guidelines (i.e., at an approved facility).

7.4.7 Potential Mercury-Containing Materials/Equipment

Should disposal be required, mercury-containing equipment should be removed intact and returned to the manufacturer for recycling or disposed of at an approved hazardous waste disposal facility. The disturbance, control or disposal of mercury-containing materials/equipment should be carried out in accordance with applicable criteria/regulations (refer to Section 1.6 of this report). The presence/absence of mercury in these materials should be confirmed through a contractor or consultant prior to disturbance or disposal of these materials. Typically, these materials are sent to a recycling or hazardous waste disposal facility and not a landfill.

7.4.8 Potential PCB-Containing Materials/Equipment

According to the USEPA, PCBs may be present in caulking used in windows, door frames, masonry columns and other building materials in buildings built or renovated between 1950 and 1979. In addition, insulating fluids and cooling oils in electrical equipment (i.e., transformers, fluorescent light ballasts, capacitors, etc.) often contained PCBs until around 1980.

If PCB-containing materials or equipment are encountered in the future, and should disposal be required, the PCB content in the materials or equipment should be confirmed prior to disposal. Florescent light fixtures are present within the accommodations cabin. Any leaking light ballasts identified, whether PCB containing or not, should be removed and replaced to avoid potential concerns with electrical equipment in the future. All ballasts that are removed should be placed in a proper storage container(s). Leaks or stained areas should be cleaned and/or removed in accordance with applicable regulations or industry standards.

Any PCB-containing equipment (if present) should be handled, decontaminated, transported and disposed of as per current Federal and Provincial acts and regulations. Any PCB-containing equipment requiring removal from the building should be transported and disposed of at an approved hazardous waste disposal site, and not a landfill disposal site, by a registered hazardous waste transporter in accordance with applicable regulations.

7.4.9 Silica Containing Materials

Silica is expected to be present in concrete used in the construction foundation and bricks of the accommodations cabin. Silica may also be present in asphalt shingles used in the construction of accommodations cabin and outhouse. Precautions should be taken to prevent/reduce exposure to silica dust during any disturbance/ demolition of silica-containing products, such as wetting the surface of the materials to prevent dust emissions, donning respiratory protection, and cleaning tools and clothing prior to exiting work areas. Activities involving the disturbance and/or demolition of silica-containing materials should be carried out in a manner that ensures silica dust concentrations do not exceed the applicable ACGIH TLV.

7.4.10 Potential Radioactive Materials

Smoke detectors were not observed during the Pre-Demolition HBMA site visit. Smoke detectors observed may contain very small amounts of radioactive material (i.e., Americium 241). Smoke alarms that use radioactive material incorporated in an ionization chamber are called "ion chamber smoke alarms".

7.4.11 Summary of Findings

Hazardous building materials identified at Hungry Grove Camp during this Pre-Demolition HBMA and disposal options, if required, are summarized in Table 7-5. Conclusions and recommendations made with respect to the potential and actual presence of hazardous building materials within the accommodations cabin and outhouse are provided in Section 3.4 and should be reviewed in conjunction with Table 7-5.

Table 7-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
ACMs	NL Asbestos Abatement Regulations (Reg. 111/98)	None identified at locations sampled. Note that other possible hidden and inaccessible ACMs have the potential to be present within the accommodations building, but were not identified during the Pre-Demolition HBMA site visit.	ACMs cannot be disposed of at a Construction & Demolition Site; however, these materials can be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility. The transportation and disposal of asbestos should be conducted in accordance with the NL Asbestos Abatement Regulations (Reg. 111/98) and with Standard Operating Procedures (SOPs) for disposal of ACMs at the landfill.

Table 7-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
LBPs	Guidance Document for Leachable Toxic Waste and Disposal (GD-PPD-26.1) Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Surface Coating Materials Regulations (SOR/2016-193)	LBP (white) on plywood floor of accommodations cabin. LBP (grey) on door of accommodations cabin. LBP (grey) on plywood interior accommodations cabin. LBP (grey) on plywood interior outhouse.	Paints that were analyzed for lead and contained <5,000 mg/kg lead, may be disposed of at a Regional Solid Waste Disposal Facility (landfill), provided permission is obtained from the landfill.
Potential UFFI	Federal HPA (R.S.1985, c. H-3)	None identified	UFFI is permitted to be bagged and transported to an approved WDS and disposed in the special waste area of the site.
Mould	Mould Guidelines for the Canadian Construction Industry, Canadian Construction Industry (CCI), 2004; Mould Abatement Guidelines, Environmental Abatement Council of Ontario (EACO), 2010	Bulk sample MDX-MS1 contained Cladosporium Acremonium mould with sparse growth.	All mould impacted materials may be disposed of at a Regional Solid Waste Landfill, provided permission is obtained from the facility.
Potential ODS	Federal Halocarbon Regulations (SOR/2003-289)	R12 refrigerant in refrigerator in Room 1 and freezer of Room 3.	Materials containing ODS should be received by a contractor or facility that has the proper approvals to remove, handle and/or dispose of ODS. The remaining materials can be disposed of at a recycling facility, provided permission is obtained from the facility.

Table 7-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
Potential Lead-Containing Materials/ Equipment	Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149) Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301)	Potential lead-containing solder (piping and plumbing).	Lead-containing materials and equipment can be disposed of at a metal recycling or hazardous waste disposal facility, in accordance with applicable regulations. The transportation and disposal of hazardous lead-containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.
Potential Mercury-Containing Materials/ Equipment	Federal HPA (R.S.1985, c. H-3) Federal TDG Act (1992, c. 34) Products Containing Mercury Regulations (SOR/2014-254)	Fluorescent light fixtures are present inside accommodations cabin. The light tubes in fluorescent light fixtures often contain limited quantities of mercury in a powder or vapour form.	Mercury-containing materials and equipment can be disposed of at a recycling or hazardous waste disposal facility, in accordance with applicable regulations. The transportation and disposal of hazardous mercury-containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.

Table 7-5: Summary of Disposal Options for Confirmed and Potential Hazardous Building Materials

Hazardous Material	Applicable Acts, Regulations or Guidance Documents	Description and Location	Disposal
Potential PCB-Containing Materials/ Equipment	Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149) Federal TDG Act (1992, c. 34) Guidance Document for Leachable Toxic Waste and Disposal (GD-PPD-26.1) Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301) PCB Regulations (SOR/2008-273) PCB Waste Export Regulations (SOR/97-109) Regulations Amending the PCB Regulations (SOR/2010-57)	Fluorescent light fixtures are present inside accommodations cabin. The ballast of the fluorescent light fixtures may contain PCBs.	Any PCB-containing materials and equipment should be handled, decontaminated, transported and disposed of as per current Federal and Provincial acts and regulations. Any PCB-containing materials and equipment requiring removal from the building should be transported and disposed of by a registered hazardous waste transporter in accordance with applicable regulations. The transportation and disposal of PCB containing materials and equipment should be conducted in accordance with the Federal TDG Act and with SOPs for disposal of hazardous waste at the disposal or recycling facility.
Silica-Containing Materials	NL OHS Act (RSNL1990 Chapter O-3) NL OHS Regulations (5/12)	Asphalt shingles, brick and concrete.	These materials can be disposed of at a Regional Solid Waste Disposal Facility (landfill).
Potential Radioactive Materials	Federal TDG Act (1992, c. 34)	None identified.	Smoke detectors that contain low level radioactive materials must be transported, as per Federal TDG Regulations, to a licensed disposal facility.

APPENDIX A7

FIGURES

NOTES:

1. ALL DIMENSIONS ARE IN METERS.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF NEWFOUNDLAND LABRADOR HYDRO AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.

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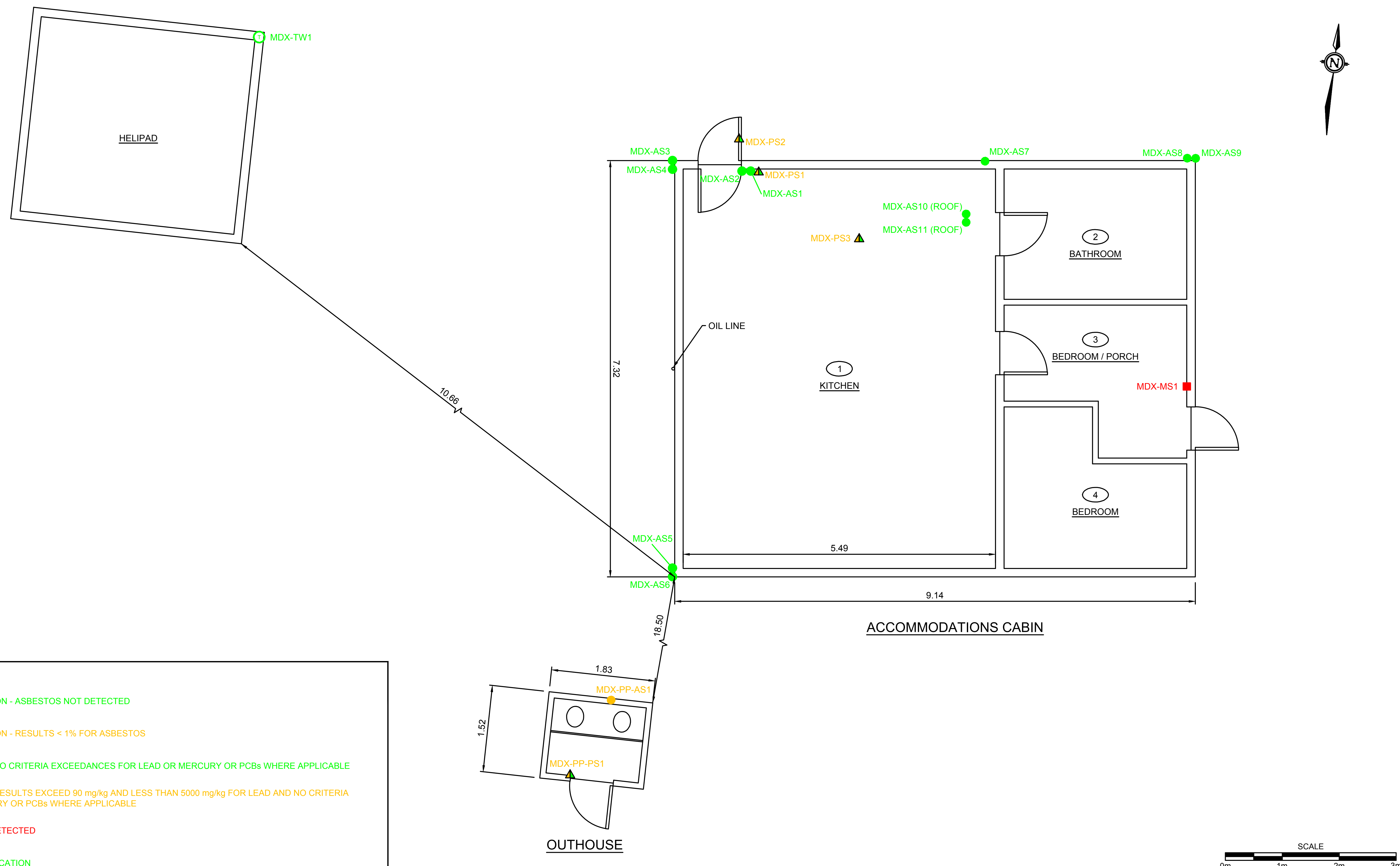
wood.

Drawn by:	T. Rideout
Approved by:	C. Finney
Scale:	As Shown
Project:	Pre-Demolition Hazardous Building Materials Assessment, Former Construction Camp Sites, Bay d'Espoir - Avalon Transmission Line, NL
Title:	Site Location Plan (Aerial) - Medonnegonik Lake Camp Site
Date:	April 2019
Project No.	TF18104243.2000
Rev. No.	0
Figure No.	7.1



LEGEND:

- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED
- ASBESTOS SAMPLE LOCATION - RESULTS < 1% FOR ASBESTOS
- PAINT SAMPLE LOCATION - NO CRITERIA EXCEEDANCES FOR LEAD OR MERCURY OR PCBs WHERE APPLICABLE
- PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY OR PCBs WHERE APPLICABLE
- SPARSE MOULD GROWTH DETECTED
- TREATED WOOD SAMPLE LOCATION

NOTES:

1. ALL DIMENSIONS ARE IN METERS.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
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Drawn by:	T. Rideout
Approved by:	C. Finney
Scale:	As Shown
Project:	Pre-Demolition Hazardous Building Materials Assessment, Former Construction Camp Sites, Bay d'Espoir - Avalon Transmission Line, NL
Title:	Sample Location Plan - Medonnegonik Lake Camp Site
Date:	April 2019
Project No.	TF18104243.2000
Rev. No.	0
Figure No.	7.2

APPENDIX B7

PHOTOGRAPHIC RECORD

Photo 1: View of the accommodations cabin at Medonnegonik Camp, looking south.

Photo 2: View of the accomodations cabin at Medonnegonik Camp, looking south.

Photo 3: View of the accommodations cabin at Medonnegonik Camp, looking east.

Photo 4: View of the accomodations cabin at Medonnegonik Camp, looking northwest.

Photo 5: View of the entryway/kitchen area at Medonnegonik Camp.

Photo 6: View of the kitchen/bunk area at Medonnegonik Camp.

Photo 7: View of the kitchen area at Medonnegonik Camp.

Photo 8: View of the bathroom at Medonnegonik Camp.


Photo 9: View of the outhouse at Medonnegonik Camp.


Photo 10: View of the outhouse at Medonnegonik Camp.


Photo 11: View of cavity inspection in wall of accommodations cabin at Medonnegonik Camp.


Photo 12: View of cavity inspection in the floor of the accommodations cabin at Medonnegonik Camp.

Photo 13: View of helipad adjacent to the accommodations cabin at Medonnegonik Camp.

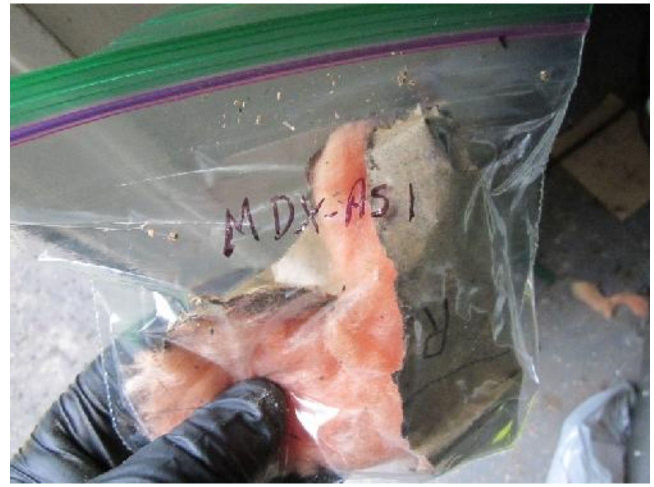

Photo 14: View of bulk material sample MDX-AS1, black paper on fibreglass insulation, Room 1.

Photo 15: View of bulk material sample MDX-AS2, black pressboard and tar paper, Room 1.

Photo 16: View of bulk material sample MDX-AS3, grey mortar, cabin exterior.

Photo 17: View of bulk material sample MDX-AS4, red brick, cabin exterior.

Photo 18: View of bulk material sample MDX-AS5, concrete block, cabin exterior.

Photo 19: View of bulk material sample MDX-AS6, grey mortar, cabin exterior.

Photo 20: View of bulk material sample MDX-AS7, white caulking, cabin exterior.

Photo 21: View of bulk material sample MDX-AS8, brown brick, cabin exterior.

Photo 22: View of bulk material sample MDX-AS9, grey mortar, cabin exterior.

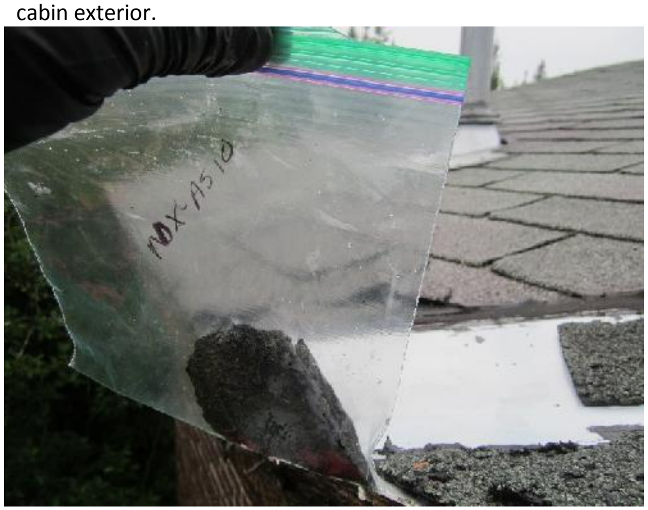

Photo 23: View of bulk material sample MDX-AS10, black shingle and tar, cabin exterior.

Photo 24: View of bulk material sample MDX-AS11, green/black shingle and tar, cabin exterior.

Photo 25: View of bulk material sample MDX-PP-AS1, black shingle and tar, outhouse exterior.


Photo 26: View of paint sample MDX-PS1, white, cabin interior.

Photo 27: View of paint sample MDX-PS2, grey, cabin exterior.


Photo 28: View of paint sample MDX-PS3, grey, cabin interior.

Photo 29: View of paint sample MDX-PP-PS1, grey, cabin exterior.

Photo 30: View of mould sample MDX-MS-1, cabin interior.

Photo 31: View of treated wood sample MDX-TW1, heli-pad.

Photo 32: View of freezer, containting R12 refridgerant, cabin interior.

APPENDIX C7

SAMPLE AND ANALYTICAL SUMMARY TABLES

Table C7-1: Bulk Sample Descriptions and Asbestos Analytical Results (Medonnegonik Camp Site)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Sample Description	Layers Analyzed	Analytical Result
MDX-AS1	1	Kitchen	14	Wall	Black paper on pink fibreglass insulation	Black paper and insulation	ND
MDX-AS2	1	Kitchen	15	Wall	Black pressboard and tar paper	Pressboard and tar paper	ND
MDX-AS3	Exterior	Exterior	16	Wall	Grey mortar (on red brick)	Mortar	ND
MDX-AS4	Exterior	Exterior	17	Wall	Red brick	Brick	ND
MDX-AS5	Exterior	Exterior	18	Foundation	Concrete block	Concrete block	ND
MDX-AS6	Exterior	Exterior	19	Foundation	Grey mortar (on concrete block)	Mortar	ND
MDX-AS7	Exterior	Exterior	20	Wall	White caulking (on brown brick)	Caulking	ND
MDX-AS8	Exterior	Exterior	21	Wall	Brown brick	Brick	ND
MDX-AS9	Exterior	Exterior	22	Foundation	Grey mortar (on brown brick)	Mortar	ND
MDX-AS10	Exterior	Exterior	23	Roof	Black shingle and tar	Shingle and tar	ND
MDX-AS11	Exterior	Exterior	24	Roof	Green/black shingle and tar	Shingle and tar	ND
MDX-PP-AS1	Exterior	Exterior	25	Roof	Black shingle and tar	Shingle and tar	**<u>0.79%</u>**

Notes:

ACM: Asbestos-Containing Material

DJC: Drywall Joint Compound

VFT: Vinyl Floor Tile

VSF: Vinyl Sheet Flooring

ND: Non-Detect (<0.1%)

*Brown paper and tar analyzed as one layer because the laboratory could not separate these materials.

Bold and underlined value indicates asbestos was detected but is below 1% by dry weight.

Shaded value exceeds 1% asbestos by dry weight and is considered to be an ACM as outlined in the Newfoundland and Labrador Asbestos Abatement Regulations (Reg. 111/98).

Table C7-2: Paint Sample Descriptions and Lead Analytical Results (Medonnegonik Camp Site)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Lead (mg/kg)
MDX-PS1	1	Kitchen	26	Wall	Plywood	White on plywood (sample includes plywood)	5.0	**185**
MDX-PS2	Exterior	Exterior	27	Exterior	Metal	Grey on metal door	5.0	**1,110**
MDX-PS3	1	Kitchen	28	Interior	Concrete	Grey on floor (sample includes plywood)	5.0	**725**
MDX-PP-PS1	Exterior	Outhouse	29	Wall	Plywood	Grey on plywood (sample includes plywood)	5.0	**109**

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

HPA: Hazardous Products Act

Bold and underlined value exceeds Federal HPA criterion (90 mg/kg).

Shaded value exceeds former Federal HPA criterion (5,000 mg/kg).

Table C7-3: Paint Sample Descriptions and Mercury Analytical Results (Medonnegonik Camp Site)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Mercury (mg/kg)
MDX-PS1	1	Kitchen	26	Wall	Plywood	White on plywood (sample includes plywood)	5.0	7.87
MDX-PS2	Exterior	Exterior	27	Exterior	Metal	Grey on metal door	5.0	0.14
MDX-PS3	1	Kitchen	28	Interior	Concrete	Grey on floor (sample includes plywood)	5.0	1.42
MDX-PP-PS1	Exterior	Outhouse	29	Wall	Plywood	Grey on plywood (sample includes plywood)	5.0	0.06

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

HPA: Hazardous Products Act

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guideline

Bold and underlined value exceeds Federal HPA criterion (10 mg/kg).

Shaded value exceeds CCME CSQG for an industrial site (50 mg/kg).

Table C7-4: Paint Sample Descriptions and PCB Analytical Results (Medonnegonik Camp Site)

Sample ID	Room No.	Room Description	Photo No.	Sample Location	Substrate	Sample Description	RDL (mg/kg)	Total PCB (mg/kg)
MDX-PS1	1	Kitchen	26	Wall	Plywood	White on plywood (sample includes plywood)	0.5	<0.5
MDX-PS2	Exterior	Exterior	27	Exterior	Metal	Grey on metal door	0.5	<0.5
MDX-PS3	1	Kitchen	28	Interior	Concrete	Grey on floor (sample includes plywood)	0.5	<0.5
MDX-PP-PS1	Exterior	Outhouse	29	Wall	Plywood	Grey on plywood (sample includes plywood)	0.5	<0.5

Notes:

<X: Non-Detect

RDL: Reportable Detection Limit

CCME: Canadian Council of Ministers of the Environment

CSQG: Canadian Soil Quality Guideline

NL MAE: Newfoundland and Labrador Department of Municipal Affairs and Environment

TDG: Transportation of Dangerous Goods

#Sample collected by Hydro on May 5, 2018.

Bold and underlined value exceeds CCME CSQG for an industrial site (33 mg/kg).

Shaded value exceeds the criterion for PCB solid provided in the NL MAE Leachable Toxic Waste, Testing and Disposal Guidance Document and the TDG Regulations (50 mg/kg).

Table C7-5: Bulk Sample Descriptions and Mould Analytical Results (Medonnegonik Camp Site)

Sample ID	Detailed Material Description	Sample Location	Mould Identified	Analytical Result
MDX-MS1	Tape lift on wall	Room 3	*Cladosporium Acremonium*	Sparse

Notes:

1. Mould growth is subjectively assessed with description terms sparse, moderate and abundant.
2. The presence of spores (lacking other fungal structures associated) is assessed as following: a few spores (< 10 spores average per microscopic field at 400X), some spores (10 - 100 spores average per microscopic field at 400X), many spores (> 100 spores average per microscopic field at 400X).
3. The presence of a few spores generally represents settled spores on the surface of the sample rather than indicating mould growth.

Table C7-6: Bulk Sample Descriptions and Leachable Treated Wood Parameter Analytical Results (Medonnegonik Camp Site)

		Data	Guidelines		
Sample ID		MDX-TW1	ENVC Guidance Document Treated Wood Waste Disposal Amended September 2015 (GD-PPD-075.1)		ENVC Guidance Document Leachable Toxic Waste, Testing and Disposal Revised November 2003 (GD-PPD-26.1)
Sample Location and Room No.		Helipad			
Detailed Material Description		Treated Wood			
Location (Photo No.)		31			
Parameters	**RDL (µg/L)**	(µg/L)	Column 2: TCLP Limits (CEPA) (µg/L)	Column 3: Double TCLP Limits (µg/L)	Schedule II (Interprovincial Movement of Hazardous Waste Regulations (pending)) (µg/L)
Leachable Benzo(a)pyrene	0.001	<0.001	1	2	1
Leachable m/p-Cresol	0.0	<0.008	-	-	200,000
Leachable o-Cresol	0.0	<0.004	-	-	200,000
Leachable Cresol Total	0.0	<0.012	200,000	400,000	200,000

Notes:

RDL: Reportable detection limit

ENVC: Newfoundland and Labrador Department of Environment and Conservation

TCLP: Toxicity Characteristic Leaching Procedure

CEPA: Canadian Environmental Protection Act

TWW: Treated Wood Waste

-: Value Not Established

Shaded results indicate that TCLP concentration exceeds Column 2 TCLP limits provided in the TWW Disposal Guidance Document.

Bold results indicate that TCLP concentration exceeds Schedule II TCLP limits provided in the Leachable Toxic Waste Guidance Document.

Underlined results indicate that TCLP concentration exceeds Column 3 TCLP limits provided in the TWW Disposal Guidance Document.

APPENDIX D7

ROOM-BY-ROOM INSPECTION SHEETS

Building	Room #	Floor #	Room Description	Dimensions
MDX	1	1	Kitchen	L = 24' W = 18' H =

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Wood			
Walls (include window caulking)	Wood Pese board type sheeting & paper backing			MDX-AS-2
Ceiling	Wood.			
Paint (and substrate)	Walls: Biege Ceiling: Floor: Grey Other: Grey on Metal door			MDX-PS1 MDX-PS-3 MDX-PS-2
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	Pink fibreglass & paper backing Fire Door Manufacturer: Fire Door Serial #:			MDX-AS-1
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: 2 → 2bulb	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	4 → incandescent			
Thermostats	Manufacturer Colour, Shape — Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,				
Mould / Water Staining	Area impacted Potential Mould.			MDX-MS-1
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext Danby fridge, R12, Model D730, Type HDS			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
MDX	2	1	Pantry	L = 12' W = 8' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Wood			
Walls (include window caulking)	Wood			
Ceiling	Wood			
Paint (and substrate)	Walls: Ceiling: Same as 1 Floor: Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	Fire Door Manufacturer: — Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	(			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	—			
Mould / Water Staining	Area impacted Potential Mould. Floors collapsed.			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext —			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials —			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
MDX	3	1	Room/Porch	L = 12' W = 8' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Wood			
Walls (include window caulking)	Wood			
Ceiling	Wood			
Paint (and substrate)	Walls: Ceiling: Same as 1 Floor: Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	— Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	1			
Thermostats	Manufacturer Colour, Shape — Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	—			
Mould / Water Staining	Area impacted Mould			MDX-MS-1
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext deep freeze.			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
MDY	4	1	Room	L = 12' W = 8' H = 8'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Wood			
Walls (include window caulking)	Wood			
Ceiling	Wood.			
Paint (and substrate)	Walls: Ceiling: Same as ↑ Floor: Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	— Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	|			
Thermostats	Manufacturer Colour, Shape — Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	—			
Mould / Water Staining	Area impacted Mould Potential			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext —			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials —			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
MDX			Exterior	L = 30' W = 24' H =

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
~~Floor~~ foundation	Cinder block		Block Mortar	MDX-AS5 MDX-AS6
Walls (include window caulking)	Red brick w̄ grey mortar 1/2		Mortar Red Brick	MDX-AS3 MDX-AS4
	Brown brick w̄ grey mortar 1/2 (New 1990)		Brown Brick Mortar	MDX-AS8 MDX-AS9
~~Ceiling~~ Roof	Black shingles on 1/2 Green/black shingles on 1/2		Black Shingle w̄ Tar Green Shingle w̄ Tar	MDX-AS10 MDX-AS11
Paint ~~(and substrate)~~	Walls: Caulking White ~~Ceiling:~~ ~~Floor:~~ ~~Other:~~			MDX-AS7
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment				
Fluorescent Lighting	Ballast Manufacturer: Serial #:	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)				
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted Dial Casing # Observed # Checked Mercury switch: Y/N			
~~**LCMs** (saudering/pipes batteries/ exit/ emerg lighting,~~				
Mould / Water Staining	Area impacted			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

Building	Room #	Floor #	Room Description	Dimensions
MDx			Outhouse	L = 6' W = 5' H = 7'

	Description	Condition (good/fair/poor)	Quantity (SF/LF/total)	Samples Collected (actual/visual reference)
Floor	Wood			
Walls (include window caulking)	Wood (Int+Ext)			
Ceiling	Wood black shingles			
Paint (and substrate)	Walls: Grey Ceiling: Floor: Other:			
Insulation (Piping/Mechanical/ Wall/Ceiling/Ducting)	— Fire Door Manufacturer: Fire Door Serial #:			
Piping / Mechanical Equipment	—			
Fluorescent Lighting	Ballast Manufacturer: Serial #: —	Leaking / Other	# Total: # Checked:	Suspect PCBs:
Other Lighting (e.g., incandescent, HID)	—			
Thermostats	Manufacturer Colour, Shape Wall/Floor Mounted — Dial Casing # Observed # Checked Mercury switch: Y/N			
LCMs (saudering, pipes batteries, exit/ emerg lighting,	—			
Mould / Water Staining	Area impacted			
ODS ODSs (e.g., refrigerator, drinking fountain, fire extinguishers)	Fire ext			
Other / Photos	e.g. Treated timber, UFFI, CO, VOCs, furnace, ASTs, USTs, drums, silica-containing materials			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); LCM (lead-containing material); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile – specify 1 x 1', 9 x 9"); ACT (acoustic ceiling tile – specify pattern e.g. speckled); LF (linear feet); SF (square feet).

Notes/Comments:

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APPENDICES

8.0 CLOSURE AND LIMITATIONS

8.1 QA/QC DISCUSSION

Details regarding the QC assessment of surrogate recoveries, laboratory blank and laboratory duplicate samples are presented in this section. The QA/QC results are reported on the laboratory certificates of analyses included in Appendix A8.

8.1.1 Surrogate Recoveries

The surrogate (chrysene-d12) recoveries (69% to 99%) for the treated wood sample analyzed for SVOC's were within the laboratory's acceptable QC limit of 50% - 130% (refer to Appendix A8).

The surrogate (decachlorobiphenyl) recoveries (77% to 123%) for the paint samples analyzed for PCBs were within the laboratory's acceptable QC limits of 50% to 130% (refer to Appendix A8).

8.1.2 Laboratory Method Blank Samples

Laboratory method blank samples were analyzed for mercury, PCBs, cresols, ortho-cresol, meta & para-cresol and/or benzo(a)pyrene. The purpose of the laboratory blank samples were to assess the quality of the laboratory results with respect to the presence/absence of instrument cross contamination at the laboratory.

Analysis of the laboratory blank samples indicated non-detectable concentrations; therefore, no evidence of cross contamination at the laboratory was identified during the laboratory analytical program (refer to Appendix A8).

8.1.3 Laboratory Duplicates

The analytical data for the laboratory duplicate and original paint samples analyzed for, mercury, PCBs, cresols, ortho-cresol, meta & para-cresol and/or benzo(a)pyrene were compared as relative percent differences (RPDs). Generally, these evaluations are only applicable when both results are at least five times the reporting limit. RPD values less than 35% are acceptable for lead, mercury, PCBs, cresols, ortho-cresol, meta & para-cresol and benzo(a)pyrene.

The RPDs were not calculable (i.e., concentrations less than fie times the reporting limit) for lead, mercury, PCBs, cresols, ortho-cresol, meta & para-cresol and benzo(a)pyrene and not calculable (i.e., concentrations less than two times the reporting limit) (refer to Appendix A8).

8.1.4 Summary of QA/QC Discussion

Overall, based on these QC reviews, the analytical results are considered representative of the site conditions in the immediate vicinity of the sample locations.

8.2 CLOSURE

This report was prepared for the exclusive use of Newfoundland and Labrador Hydro, a Nalcor Energy Company. The findings of this report are based solely on the conditions of the site buildings encountered at the time of the site visit, and are limited by the availability of information at the time of the Pre-Demolition HBMA, lack of accessibility to areas within the buildings, project scope and budget. The findings of this assessment are based on the interpretation of data from a limited number of areas investigated and analytical results pertaining to specific samples. It is possible that materials exist which could not be reasonably identified within the scope of the Pre-Demolition HBMA or which were not apparent or accessible during the site visit. This Report is also subject to the further limitations contained in Appendix B8.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third party. Should additional parties require reliance on this report, written authorization from Wood is required. With respect to third parties, Wood has no liability or responsibility for losses of any kind whatsoever, including direct or consequential financial effects on transactions or property values, or requirements for follow-up actions and costs. This assessment has been carried out using commercially reasonable best efforts consistent with the level and skill ordinarily exercised by members of the profession currently practicing under similar conditions.

Except when otherwise specified, Wood disclaims any obligation to update this report for events taking place, or with respect to information that becomes available to Wood after the time during which Wood conducted the hazardous building materials assessment.

In evaluating the property, Wood has relied in good faith on information provided by other individuals noted in this report. Wood has assumed that the information provided is factual and accurate. In addition, some of the findings in this report are based upon information provided by the current owner/occupant. Wood accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.

Wood makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

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

Respectfully Submitted,

Wood Environment & Infrastructure Solutions,
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APPENDIX A8

LABORATORY CERTIFICATES OF ANALYSES

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ATTENTION TO: Lori Wiseman

PROJECT: TF18104243

AGAT WORK ORDER: 18K378239

SOIL ANALYSIS REVIEWED BY: Laura Baker, Inorganics Data Reporter

TRACE ORGANICS REVIEWED BY: Amy Hunter, Trace Organics Supervisor, B.Sc.

DATE REPORTED: Sep 05, 2018

PAGES (INCLUDING COVER): 8

VERSION*: 1

Should you require any information regarding this analysis please contact your client services representative at (709)747-8573

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

AGAT Laboratories
57 Old Pennywell Road, Unit I
St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
FAX (709 747-2139
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 18K378239

PROJECT: TF18104243

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd.

ATTENTION TO: Lori Wiseman

SAMPLING SITE:

SAMPLED BY:

Lead In Paint

DATE RECEIVED: 2018-08-27

DATE REPORTED: 2018-08-31

			SAMPLE DESCRIPTION:	C1-PS1	C1-PS2	C1-PS3	C1-PS4	C1-PS5	C1-PS6	C1-PP-PS1	C1-PP-PS2
			SAMPLE TYPE:	Paint	Paint	Paint	Paint	Paint	Paint	Paint	Paint
			DATE SAMPLED:	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13
Parameter	**Unit**	**G / S**	**RDL**	**9501085**	**9501086**	**9501087**	**9501088**	**9501089**	**9501090**	**9501091**	**9501092**
Lead in Paint	mg/kg		15	60	57	36	194	300	259	319	122
Total Sample Mass	g			0.5030	0.4972	0.2125	0.4995	0.4934	0.5076	0.5033	0.4964

			SAMPLE DESCRIPTION:	C1-PP-PS3
			SAMPLE TYPE:	Paint
			DATE SAMPLED:	2018-08-13
Parameter	**Unit**	**G / S**	**RDL**	**9501093**
Lead in Paint	mg/kg		15	40
Total Sample Mass	g			0.4964

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By: Laura Baker

Results relate only to the items tested and to all the items tested

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CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**

SAMPLING SITE: **SAMPLED BY:**

Mercury Analysis in Paint

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-08-31**

			SAMPLE DESCRIPTION:	C1-PS1	C1-PS2	C1-PS3	C1-PS4	C1-PS5	C1-PS6	C1-PP-PS1	C1-PP-PS2
			SAMPLE TYPE:	Paint	Paint	Paint	Paint	Paint	Paint	Paint	Paint
			DATE SAMPLED:	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13
Parameter	**Unit**	**G / S**	**RDL**	9501085	9501086	9501087	9501088	9501089	9501090	9501091	9501092
Mercury	mg/kg		0.05	0.11	1.04	<0.05	1.80	<0.05	0.34	<0.05	<0.05

			SAMPLE DESCRIPTION:	C1-PP-PS3
			SAMPLE TYPE:	Paint
			DATE SAMPLED:	2018-08-13
Parameter	**Unit**	**G / S**	**RDL**	9501093
Mercury	mg/kg		0.05	<0.05

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

Certificate of Analysis

AGAT WORK ORDER: 18K378239
PROJECT: TF18104243

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CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**
SAMPLING SITE: **SAMPLED BY:**

Total Polychlorinated Biphenyls in Paint

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-09-05**

		SAMPLE DESCRIPTION:		C1-PS1	C1-PS2	C1-PS3	C1-PS4	C1-PS5	C1-PS6	C1-PP-PS1	C1-PP-PS2
		SAMPLE TYPE:		Paint	Paint	Paint	Paint	Paint	Paint	Paint	Paint
		DATE SAMPLED:		2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13
Parameter	**Unit**	**G / S**	**RDL**	9501085	9501086	9501087	9501088	9501089	9501090	9501091	9501092
Total PCBs	mg/kg		0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate	**Unit**	**Acceptable Limits**									
Decachlorobiphenyl	%	50-130		115	90	77	92	88	92	91	87

		SAMPLE DESCRIPTION:		C1-PP-PS3
		SAMPLE TYPE:		Paint
		DATE SAMPLED:		2018-08-13
Parameter	**Unit**	**G / S**	**RDL**	9501093
Total PCBs	mg/kg		0.5	<0.5
Surrogate	**Unit**	**Acceptable Limits**		
Decachlorobiphenyl	%	50-130		96

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

AGAT Laboratories

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Quality Assurance

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of
PROJECT: TF18104243
SAMPLING SITE:

AGAT WORK ORDER: 18K378239
ATTENTION TO: Lori Wiseman
SAMPLED BY:

Soil Analysis

RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Lead In Paint															
Lead in Paint	8312018	9507202	< 15	< 15	0.0%	< 15	108%	70%	130%	109%	70%	130%	106%	70%	130%
Mercury Analysis in Paint															
Mercury	1	9501093	<0.05	<0.05	NA	< 0.05	106%	70%	130%	NA	70%	130%	71%	70%	130%

Certified By:

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Quality Assurance

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of **AGAT WORK ORDER: 18K378239**

PROJECT: TF18104243 **ATTENTION TO: Lori Wiseman**

SAMPLING SITE: **SAMPLED BY:**

Trace Organics Analysis

RPT Date:			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Total Polychlorinated Biphenyls in Paint															
Total PCBs	1	9500855	<0.5	<0.5	NA	< 0.5	94%	60%	140%	102%	60%	130%	92%	60%	130%

Comments: If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution.
If RPD value is NA, the results of the duplicates are less than 5x the RDL and the RPD will not be calculated.

PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Total Polychlorinated Biphenyls in Paint															
Total PCBs	1	9500914	<0.5	<0.5	NA	< 0.5	98%	60%	140%	100%	60%	130%	112%	60%	130%

Comments: If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution.
If RPD value is NA, the results of the duplicates are less than 5x the RDL and the RPD will not be calculated.

Certified By:

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Method Summary

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of
AGAT WORK ORDER: 18K378239
PROJECT: TF18104243
ATTENTION TO: Lori Wiseman
SAMPLING SITE:
SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Lead in Paint	MET-121-6105 & MET-121-6103	EPA SW 846 6020A/3050B & SM 3125	ICP-MS
Total Sample Mass			
Mercury	INOR-121-6101 & INOR-121-6107	Based on EPA 245.5 & SM 3112B	CV/AA
Trace Organics Analysis			
Total PCBs	ORG-120-5107	EPA SW-846 8082	GC/ECD
Decachlorobiphenyl	ORG-120-5106	EAP SW846 3510C/8080/8010	GC/ECD

AGAT Laboratories

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Chain of Custody Record

Laboratory Use Only

Arrival Condition: ☒ Good ☐ Poor (see notes)
Arrival Temperature: 22.3°C
Hold Time:
AGAT Job Number: 18K378239
Notes:

Report Information

Company: Wood E&I Solutions (formerly Amec Foster Wheeler E&I)
Contact: Lori Wiseman
Address: 133 CROSBIE ROAD
ST. JOHNS, NL A1B 4A5
Phone: 1-709-722-7023 Fax: 1-709-722-7353
Client Project #: TF18104243
AGAT Quotation: NALCOR ESA (MIS-016)
Please Note: If quotation number is not provided client will be billed full price for analysis.

Report Information (Please print):

1. Name: Lori Wiseman
   Email: lori.wiseman@woodplc.com
2. Name:
   Email:

Report Format

☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Turnaround Time Required (TAT)

Regular TAT ☒ 5 to 7 working days
Rush TAT ☐ Same day ☐ 1 day ☐ 2 days ☐ 3 days
Date Required:

Invoice To Same Yes ■ / No ☐

Company: Wood E&I Solutions
Contact: Sandra LeDrew and Project Manager indicated above
Address: 133 CROSBIE ROAD
ST. JOHNS, NL AIB 4A5
Phone: 1-709-722-7023 Fax: 1-709-722-7353
PO/Credit Card#:

Regulatory Requirements (Check):

☐ List Guidelines on Report ☐ Do not list Guidelines on Report
☐ PIRI
☐ Tier 1 ☐ Res ☐ Pot ☐ Coarse
☐ Tier 2 ☐ Com ☐ N/Pot ☐ Fine
☐ Gas ☐ Fuel ☐ Lube
☒ CCME ☐ CDWQ
☐ Industrial ☒ Other TDG; HPA
☒ Commercial
☐ Res/Park
☐ Agricultural
☐ FWAL
☐ Sediment

Drinking Water Sample: ☐ Yes ☒ No **Salt Water:** ☐ Yes ☒ No
Reg. No.:

Sample Identification	Date/Time Sampled	Sample Matrix	# Containers	Comments – Site/Sample Info. Sample Containment	Field Filtered/Preserved	Standard Water Analysis	Metals: ☐ Total ☐ Diss ☐ Available	Mercury	☐ BOD ☐ CBOD	pH	☐ TSS ☐ TDS ☐ VSS	TKN	Total Phosphorus	Phenols	Tier 1: TPH/BTEX (PIRI) ☐ low level	Tier 2: TPH/BTEX Fractionation	CCME-CWS TPH/BTEX	VOC	THM	HAA	PAH	PCB	TC + EC ☐ P/A ☐ MPN ☐ MF	☐ HPC ☐ Pseudomonas	Fecal Coliform ☐ MPN ☐ MF	Other: Lead	Other:	Hazardous (Y/N)
C1-PS1	Aug 13 2018	Paint	Baggie	Camp 1 / Cabin				X														X				X		
C1-PS2								X														X				X		
C1-PS3								X														X				X		
C1-PS4								X														X				X		
C1-PS5								X														X				X		
C1-PS6								X														X				X		
C1-PP-PS1				Camp 1 / Outhouse				X														X				X		
C1-PP-PS2								X														X				X		
C1-PP-PS3								X														X				X		

Samples Relinquished By (Print Name): Lori Wiseman Date/Time: Aug. 27/2018
Samples Relinquished By (Sign): Date/Time:
Samples Received By (Print Name): Date/Time:
Samples Received By (Sign): Date/Time:

Pink Copy - Client
Yellow Copy - AGAT
White Copy- AGAT

Page 1 of 1
Nº:

Document ID: DIV-138-1502
Date revised: January 11, 2016

EMSL Canada Inc.
2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 551810146
Customer ID: 55MEEN26
Customer PO: TF18104243
Project ID:

Attn: Lori Wiseman
Wood Env. & Infrastructure Solutions
PO Box 13216
133 Crosbie Road
Saint John's, NL A1B 4A5

Phone: (709) 722-7023
Fax: (709) 722-7353
Collected: 8/13/2018
Received: 8/29/2018
Analyzed: 9/05/2018

Proj: HBMA TL Camps/TF18104243

Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: C1-AS1 ***Lab Sample ID:*** **551810146-0001**

Sample Description: Camp 1 - Cabin - Wall/Black Paper on Pink Fibreglass Insulation

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	9/05/2018	Black	3.8%	96.2%	None Detected	

Client Sample ID: C1-AS2 ***Lab Sample ID:*** **551810146-0002**

Sample Description: Camp 1 - Cabin - Ceiling/Black Paper on Yellow Fibreglass Insulation

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	9/05/2018	Black	<0.25%	100%	None Detected	

Client Sample ID: C1-AS3 ***Lab Sample ID:*** **551810146-0003**

Sample Description: Camp 1 - Cabin - Foundation/Concrete

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	9/05/2018	Gray/Red	2%	98%	None Detected	

Client Sample ID: C1-AS4 ***Lab Sample ID:*** **551810146-0004**

Sample Description: Camp 1 - Cabin - Foundation/Cinder Block

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	9/05/2018	Gray/Red	0%	100%	None Detected	

Client Sample ID: C1-AS5 ***Lab Sample ID:*** **551810146-0005**

Sample Description: Camp 1 - Cabin - Roof/Black Shingle and Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	9/05/2018	Black	0.0%	100%	None Detected	

Client Sample ID: C1-PP-AS1 ***Lab Sample ID:*** **551810146-0006**

Sample Description: Camp 1 - Outhouse - Roof/Black Shingle and Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	9/05/2018	Black	0.0%	100%	None Detected	

EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 551810146
Customer ID: 55MEEN26
Customer PO: TF18104243
Project ID:

Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Analyst(s):

Ioana Taina	PLM (2)
Natalie D'Amico	PLM Grav. Reduction (4)

Reviewed and approved by:

Matthew Davis or other approved signatory
or Other Approved Signatory

Samples analyzed by EPA 600/R-93/116 consistent with NLR 111/98. The estimated limit of detection for non-detect samples is <0.1%. Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL`s liability is limited to the cost of analysis. 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 or any agency of the US Government.

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

Initial report from: 09/05/201815:06:43

OrderID: 551810146

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 551810146

EMSL Analytical, Inc.
2756 Slough Street
Mississauga, ON L4T 1G3
PHONE: 289-997-4602
FAX: 289-997-4607

VP

Company : Wood Environment & Infrastructure Solutions	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 133 Crosbie Road	
City: St. John's **State/Province:** NL	**Zip/Postal Code:** A1B 4A5 **Country:** CA
Report To (Name): Lori Wiseman	**Telephone #:** (709) 722-7023
Email Address: lori.wiseman@woodplc.com	**Fax #:** (709) 722-7353 **Purchase Order:** TF18104243
Project Name/Number: HBMA TL Camps/TF18104243	**Please Provide Results:** ☐ Fax ✔ Email ☐ Mail
U.S. State Samples Taken: NL	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ■ 1 Week ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PLM - Bulk (reporting limit)	TEM – Bulk
■ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
■ PLM EPA NOB (<1%), IF REQUIRED BASED ON SAMPLE	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☐ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** August 13, 2018

Samplers Name: Craig Taylor **Samplers Signature:** [signature]

Sample #	HA #	Sample Location	Material Description
C1-AS1		Camp 1 – Cabin – Wall	Black paper on pink fibreglass insulation
C1-AS2		Camp 1 – Cabin – Ceiling	Black paper on yellow fibreglass insulati
C1-AS3		Camp 1 – Cabin – Foundation	Concrete
C1-AS4		Camp 1 – Cabin – Foundation	Cinder block and mortar
C1-AS5		Camp 1 – Cabin – Roof	Black shingle and tar
C1-PP-AS1		Camp 1 – Outhouse – Roof	Black shingle and tar

Client Sample # (s): - **Total # of Samples:** 6

Relinquished (Client): Lori Wiseman **Date:** August 24, 2018 **Time:** 3:45 p.m.

Received (Lab): **Date:** **Time:**

Comments/Special Instructions:
Please advise if any samples require PLM NOB analysis.
Analyze seperate layers in each sample; excluding fibreglass insulation.

Page 1 of 1 pages

29AUG 18 10:56AM

FDX 7730 7628 6820 VP

Camp #2 COAs

emcscientific INCORPORATED

Laboratory Analysis Report

To:

Cary Hutchinson
AGAT Laboratories Ltd.
11 Morris Drive, Unit 122
Dartmouth, Nova Scotia
B3B 1M2

EMC LAB REPORT NUMBER: 67991
Job/Project Name:
Job/Project No: 18k378220 **No. of Samples:** 1
Sample Type: Bulk **Date Received:** Aug 29/18
Analysis Method(s): Direct Microscopic Examination
Date Analyzed: Sep 4/18 **Date Reported:** Sep 4/18
Analyst: Weizhong Liu, Ph.D., *Mycologist*
Approved By: Fajun Chen, Ph.D., *Principal Mycologist*

Client's Sample ID	Lab Sample No.	Date Sampled	Description/Location	Mould Identified, in Rank Order	Mould Growth
18k378220	296478	Aug 13/18	9500919 – PP-MS1	*Cladosporium*	Abundant

Note:
1. Mould growth is subjectively assessed with description terms sparse, moderate and abundant.
2. The presence of spores (lacking other fungal structures associated) is assessed as following: a few spores (< 10 spores average per microscopic field at 400X), some spores (10 - 100 spores average per microscopic field at 400X), many spores (> 100 spores average per microscopic field at 400X).
3. The presence of a few spores generally represents settled spores on the surface of the sample rather than indicating mould growth.
4. The results are only related to the samples analyzed.

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CLIENT NAME: **WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd.**
36 PIPPY PLACE
St. John's, NL A1B4A5
(709) 722-5062

ATTENTION TO: **Lori Wiseman**

PROJECT: **TF18104243**

AGAT WORK ORDER: **18K378220**

SOIL ANALYSIS REVIEWED BY: **Laura Baker, Inorganics Data Reporter**

TRACE ORGANICS REVIEWED BY: **Pinkal Patel, Report Reviewer**

DATE REPORTED: **Sep 07, 2018**

PAGES (INCLUDING COVER): **11**

VERSION*: **1**

Should you require any information regarding this analysis please contact your client services representative at (709)747-8573

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

Certificate of Analysis

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AGAT WORK ORDER: 18K378220

PROJECT: TF18104243

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**

SAMPLING SITE: **SAMPLED BY:**

Lead In Paint

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-09-07**

			SAMPLE DESCRIPTION:	PP-PS1	PP-PS2	PP-PS3	PP-PS4	PP-PS5	PP-PS6	PP-PP-PS1
			SAMPLE TYPE:	Paint	Paint	Paint	Paint	Paint	Paint	Paint
			DATE SAMPLED:	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13
Parameter	**Unit**	**G / S**	**RDL**	**9500878**	**9500910**	**9500912**	**9500913**	**9500914**	**9500915**	**9500917**
Lead in Paint	mg/kg		15	103	64	122	<15	<15	40400	<15
Total Sample Mass	g			0.5002	0.2166	0.5085	0.4974	0.4975	0.4946	0.5065

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

Results relate only to the items tested and to all the items tested

Certificate of Analysis

AGAT WORK ORDER: 18K378220
PROJECT: TF18104243

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CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**

SAMPLING SITE: **SAMPLED BY:**

Mercury Analysis in Paint

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-09-07**

			SAMPLE DESCRIPTION:	PP-PS1	PP-PS2	PP-PS3	PP-PS4	PP-PS5	PP-PS6	PP-PP-PS1
			SAMPLE TYPE:	Paint	Paint	Paint	Paint	Paint	Paint	Paint
			DATE SAMPLED:	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13
Parameter	**Unit**	**G / S**	**RDL**	9500878	9500910	9500912	9500913	9500914	9500915	9500917
Mercury	mg/kg		0.05	2.35	<0.05	0.78	0.19	<0.05	0.81	0.16

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

AGAT Laboratories

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Certificate of Analysis

AGAT WORK ORDER: 18K378220

PROJECT: TF18104243

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd.

ATTENTION TO: Lori Wiseman

SAMPLING SITE:

SAMPLED BY:

O. Reg. 558 - SVOCs

DATE RECEIVED: 2018-08-27

DATE REPORTED: 2018-09-07

			SAMPLE DESCRIPTION:	PP-TW1
			SAMPLE TYPE:	Wood
			DATE SAMPLED:	2018-08-13
Parameter	**Unit**	**G / S**	**RDL**	**9500920**
Cresols	mg/L		0.012	<0.012
Ortho-Cresol	mg/L		0.004	<0.004
Meta & Para-Cresol	mg/L		0.008	<0.008
Benzo(a)pyrene	mg/L		0.001	<0.001
Surrogate	**Unit**	**Acceptable Limits**		
Chrysene-d12	%	50-130		99

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

9500920 Due to insufficient sample volume, the Toxicity Characteristic Leaching Procedure (TCLP) was completed using a sample mass which did not meet the prescriptive, minimum sample requirements to perform the TCLP as specified in the reference method (EPA Method 1311) as mandated under R.R.O. 1990, Reg. 347: GENERAL - WASTE MANAGEMENT under Environmental Protection Act, R.S.O. 1990, c. E.19

Certified By: Pinkal Patel

Certificate of Analysis

AGAT WORK ORDER: 18K378220

PROJECT: TF18104243

57 Old Pennywell Road, Unit I
St. John's, NL
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CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**

SAMPLING SITE: **SAMPLED BY:**

Total Polychlorinated Biphenyls in Paint

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-09-07**

			SAMPLE DESCRIPTION:	PP-PS1	PP-PS2	PP-PS3	PP-PS4	PP-PS5	PP-PS6	PP-PP-PS1
			SAMPLE TYPE:	Paint	Paint	Paint	Paint	Paint	Paint	Paint
			DATE SAMPLED:	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13	2018-08-13
Parameter	**Unit**	**G / S**	**RDL**	9500878	9500910	9500912	9500913	9500914	9500915	9500917
Total PCBs	mg/kg		0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate	**Unit**	**Acceptable Limits**								
Decachlorobiphenyl	%	50-130		92	102	84	84	96	109	112

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By: Pinkal Patel

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Quality Assurance

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of
PROJECT: TF18104243
SAMPLING SITE:

AGAT WORK ORDER: 18K378220
ATTENTION TO: Lori Wiseman
SAMPLED BY:

Soil Analysis

RPT Date: Sep 07, 2018			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Mercury Analysis in Paint															
Mercury	1	9500917	0.13	0.16	NA	< 0.05	92%	70%	130%	NA	70%	130%	81%	70%	130%

Certified By:

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Quality Assurance

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of **AGAT WORK ORDER: 18K378220**

PROJECT: TF18104243 **ATTENTION TO: Lori Wiseman**

SAMPLING SITE: **SAMPLED BY:**

Trace Organics Analysis

RPT Date: Sep 07, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Total Polychlorinated Biphenyls in Paint															
Total PCBs	1	9500914	<0.5	<0.5	NA	< 0.5	98%	60%	140%	100%	60%	130%	112%	60%	130%

Comments: If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution.
If RPD value is NA, the results of the duplicates are less than 5x the RDL and the RPD will not be calculated.

PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Lower	Upper	Recovery	Lower	Upper	Recovery	Lower	Upper
O. Reg. 558 - SVOCs															
Cresols		NA	NA	NA	NA	< 0.012	89%	60%	130%	87%	35%	110%	NA	30%	130%
Ortho-Cresol		NA	NA	NA	NA	< 0.004	87%	50%	130%	76%	50%	130%	NA	50%	130%
Meta & Para-Cresol		NA	NA	NA	NA	< 0.008	81%	50%	130%	94%	50%	130%	NA	50%	130%
Benzo(a)pyrene		NA	NA	NA	NA	< 0.001	87%	60%	130%	99%	60%	130%	NA	60%	130%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By: Pinkal Patel

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Method Summary

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of **AGAT WORK ORDER: 18K378220**
PROJECT: TF18104243 **ATTENTION TO: Lori Wiseman**
SAMPLING SITE: **SAMPLED BY:**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Lead in Paint	MET-121-6105 & MET-121-6103	EPA SW 846 6020A/3050B & SM 3125	ICP-MS
Total Sample Mass			
Mercury	INOR-121-6101 & INOR-121-6107	Based on EPA 245.5 & SM 3112B	CV/AA
Trace Organics Analysis			
Cresols	ORG-91-5114	EPA SW846 3510C & 8270	GC/MS
Ortho-Cresol	ORG-91-5114	EPA SW846 3510C & 8270	GC/MS
Meta & Para-Cresol	ORG-91-5114	EPA SW846 3510C & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5114	EPA SW846 3510C & 8270	GC/MS
Chrysene-d12	ORG-91-5114	EPA SW846 3510C & 8270	GC/MS
Total PCBs	ORG-120-5107	EPA SW-846 8082	GC/ECD
Decachlorobiphenyl	ORG-120-5106	EAP SW846 3510C/8080/8010	GC/ECD

AGAT Laboratories

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Chain of Custody Record

Laboratory Use Only

Arrival Condition: ☒ Good ☐ Poor (see notes)
Arrival Temperature: 24.6
Hold Time:
AGAT Job Number: 18K378220
Notes:

Report Information

Company: Wood E&I Solutions (formerly Amec Foster Wheeler E&I)
Contact: Lori Wiseman
Address: 133 CROSBIE ROAD
ST. JOHNS, NL A1B 4A5
Phone: 1-709-722-7023 Fax: 1-709-722-7353
Client Project #: TF18104 243
AGAT Quotation: NALCOR ESA (MIS-016)
Please Note: If quotation number is not provided client will be billed full price for analysis.

Report Information (Please print):

1. Name: Lori Wiseman
   Email: lori.wiseman@woodplc.com
2. Name:
   Email:

Report Format

☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Turnaround Time Required (TAT)

Regular TAT ☒ 5 to 7 working days
Rush TAT ☐ Same day ☐ 1 day ☐ 2 days ☐ 3 days
Date Required:

Regulatory Requirements (Check):

☐ List Guidelines on Report ☐ Do not list Guidelines on Report
☐ PIRI
☐ Tier 1 ☐ Res ☐ Pot ☐ Coarse
☐ Tier 2 ☐ Com ☐ N/Pot ☐ Fine
☐ Gas ☐ Fuel ☐ Lube
☒ CCME ☐ CDWQ
☐ Industrial ☒ Other TDG; HPA
☒ Commercial
☐ Res/Park
☐ Agricultural
☐ FWAL
☐ Sediment

Drinking Water Sample: ☐ Yes ☒ No Salt Water: ☐ Yes ☒ No
Reg. No.:

Invoice To

Same Yes ☒ / No ☐

Company: Wood E&I Solutions
Contact: Sandra LeDrew and Project Manager indicated above
Address: 133 CROSBIE ROAD
ST. JOHNS, NL AIB 4A5
Phone: 1-709-722-7023 Fax: 1-709-722-7353
PO/Credit Card#:

Sample Identification	Date/Time Sampled	Sample Matrix	# Containers	Comments - Site/Sample Info. Sample Containment	Field Filtered/Preserved	Standard Water Analysis	Metals: ☐ Total ☐ Diss ☐ Available	Mercury	☐ BOD ☐ CBOD	Treated Wood - Creosote	☐ TSS ☐ TDS ☐ VSS Formaldehyde	TKN	Total Phosphorus	Phenols	Tier 1: TPH/BTEX (PIRI) ☐ low level	Tier 2: TPH/BTEX Fractionation	CCME-CWS TPH/BTEX	VOC	THM	HAA	PAH	PCB	TC + EC ☐ P/A ☐ MPN ☐ MF	☐ HPC ☐ Pseudomonas	Fecal Coliform ☐ MPN ☐ MF	Other: Lead	Other: Mould - DME	Hazardous (Y/N)
PP-PS1	Aug. 13, 2018	Paint	Baggie	Pin Hill Pond Camp/Cabin				X														X				X		
PP-PS2								X														X				X		
PP-PS3								X														X				X		
PP-PS4								X														X				X		
PP-PS5								X														X				X		
PP-PS6								X														X				X		
PP-PP-PS1				Pin Hill Pond Camp/Outhouse				X														X				X		
PP-MS1		Bulk		Pin Hill Pond Camp/Cabin																							X	
PP-TW1		Wood	Bag	Pin Hill Pond Camp/Outhouse						X																		

Samples Relinquished By (Print Name):	Date/Time	Samples Received By (Print Name):	Date/Time		
Lori Wiseman	Aug. 27, 2018	Samantha Murphy	1:50pm	Pink Copy - Client	Page 1 of 1
Samples Relinquished By (Sign):	**Date/Time**	**Samples Received By (Sign):**	**Date/Time**	Yellow Copy - AGAT	
		SMurphy	Aug27118	White Copy - AGAT	Nº:

Document ID: DIV-138-1502

Date revised: January 11, 2016

AGAT Laboratories

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Chain of Custody Record

Laboratory Use Only

Arrival Condition: ☒ Good ☐ Poor (see notes)
Arrival Temperature: 25.4
Hold Time:
AGAT Job Number: 18K378258
Notes:

Report Information

Company: Wood E&I Solutions (formerly Amec Foster Wheeler E&I)
Contact: Lori Wiseman
Address: 133 CROSBIE ROAD
ST. JOHNS, NL A1B 4A5
Phone: 1-709-722-7023 Fax: 1-709-722-7353
Client Project #: TF18104243
AGAT Quotation: NALCOR ESA (MIS-016)
Please Note: If quotation number is not provided client will be billed full price for analysis.

Invoice To

Same Yes ■ / No ☐

Company: Wood E&I Solutions
Contact: Sandra LeDrew and Project Manager indicated above
Address: 133 CROSBIE ROAD
ST. JOHNS, NL AIB 4A5
Phone: 1-709-722-7023 Fax: 1-709-722-7353
PO/Credit Card#:

Report Information (Please print):

1. Name: Lori Wiseman
Email: lori.wiseman@woodplc.com
2. Name:
Email:

Report Format

☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Regulatory Requirements (Check):

☐ List Guidelines on Report ☐ Do not list Guidelines on Report
☐ PIRI
☐ Tier 1 ☐ Tier 2 ☐ Gas ☐ Res ☐ Com ☐ Fuel ☐ Lube ☐ Pot ☐ N/Pot ☐ Coarse ☐ Fine
☒ CCME ☐ CDWQ
☐ Industrial ☒ Other TDG; HPA
☒ Commercial
☐ Res/Park
☐ Agricultural
☐ FWAL
☐ Sediment

Turnaround Time Required (TAT)

Regular TAT ☒ 5 to 7 working days
Rush TAT ☐ Same day ☐ 1 day ☐ 2 days ☐ 3 days
Date Required:

Drinking Water Sample: ☐ Yes ☒ No Salt Water: ☐ Yes ☒ No
Reg. No.:

Sample Identification	Date/Time Sampled	Sample Matrix	# Containers	Comments – Site/Sample Info. Sample Containment	Field Filtered/Preserved	Standard Water Analysis	Metals: ☐ Total ☐ Diss ☐ Available	Mercury	☐ BOD ☐ CBOD	Treated Wood-Inorganic	☐ TSS ☐ TDS ☐ VSS	Treated Wood-Chlorophenolic Formulation	Total Phosphorus	Phenols	Tier 1: TPH/BTEX (PIRI) ☐ low level	Tier 2: TPH/BTEX Fractionation	CCME-CWS TPH/BTEX	VOC	THM	HAA	PAH	PCB	TC + EC ☐ P/A ☐ MPN ☐ MF	☐ HPC ☐ Pseudomonas	Fecal Coliform ☐ MPN ☐ MF	Other: Lead	Other: Mould – DME	Hazardous (Y/N)
MDX – PS1	Aug. 7, 2018	Paint	Baggie	Medonnegonik Camp/Cabin				X														X				X		
MDX – PS2	↓	↓	↓	↓				X														X				X		
MDX – PS3	↓	↓	↓	↓				X														X				X		
MDX – PP-PS1	↓	↓	↓	Medonnegonik Camp/Outhouse				X														X				X		
MDX – MS1	↓	Bulk	↓	Medonnegonik Camp/Cabin																							X	
MDX – PT1	↓	Wood	↓	Medonnegonik Camp/Heli-Pad						X		X																

Samples Relinquished By (Print Name):	Date/Time	Samples Received By (Print Name):	Date/Time		
Lori Wiseman	Aug. 27, 2018	[signature]	150 pm	Pink Copy - Client	Page 1 of 1
Samples Relinquished By (Sign):	Date/Time	Samples Received By (Sign):	Date/Time	Yellow Copy - AGAT	
			Aug 27/18	White Copy- AGAT	Nº:

Document ID: DIV-138-1502

Date revised: January 11, 2016

AGAT Laboratories

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Chain of Custody Record

Laboratory Use Only

Arrival Condition: ☒ Good ☐ Poor (see notes)
Arrival Temperature: 22.0
Hold Time:
AGAT Job Number: 18K378265
Notes:

Report Information

Company: Wood E&I Solutions (formerly Amec Foster Wheeler E&I)
Contact: Lori Wiseman
Address: 133 CROSBIE ROAD
ST. JOHNS, NL A1B 4A5
Phone: 1-709-722-7023 Fax: 1-709-722-7353
Client Project #: TF18104243
AGAT Quotation: NALCOR ESA (MIS-016)
Please Note: If quotation number is not provided client will be billed full price for analysis.

Report Information (Please print):

1. Name: Lori Wiseman
Email: lori.wiseman@woodplc.com
2. Name:
Email:

Report Format

☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Turnaround Time Required (TAT)

Regular TAT ☒ 5 to 7 working days
Rush TAT ☐ Same day ☐ 1 day ☐ 2 days ☐ 3 days
Date Required:

Invoice To

Same Yes ■ / No ☐

Company: Wood E&I Solutions
Contact: Sandra LeDrew and Project Manager indicated above
Address: 133 CROSBIE ROAD
ST. JOHNS, NL AIB 4A5
Phone: 1-709-722-7023 Fax: 1-709-722-7353
PO/Credit Card#:

Regulatory Requirements (Check):

☐ List Guidelines on Report ☐ Do not list Guidelines on Report
☐ PIRI
☐ Tier 1 ☐ Tier 2 ☐ Gas ☐ Res ☐ Com ☐ Fuel ☐ Lube ☐ Pot ☐ N/Pot ☐ Coarse ☐ Fine
☒ CCME
☐ Industrial ☒ Commercial ☐ Res/Park ☐ Agricultural ☐ FWAL ☐ Sediment
☐ CDWQ ☒ Other TDG, HPA

Drinking Water Sample: ☐ Yes ☒ No
Reg. No.:
Salt Water: ☐ Yes ☒ No

Sample Identification	Date/Time Sampled	Sample Matrix	# Containers	Comments – Site/Sample Info. Sample Containment	Field Filtered/Preserved	Standard Water Analysis	Metals: ☐ Total ☐ Diss ☐ Available	Mercury	☐ BOD ☐ CBOD	pH	☐ TSS ☐ TDS ☐ VSS	TKN	Total Phosphorus	Phenols	Tier 1: TPH/BTEX (PIRI) ☐ low level	Tier 2: TPH/BTEX Fractionation	CCME-CWS TPH/BTEX	VOC	THM	HAA	PAH	PCB	TC + EC ☐ P/A ☐ MPN ☐ MF	☐ HPC ☐ Pseudomonas	Fecal Coliform ☐ MPN ☐ MF	Other: Lead	Other: Mould - DME	Hazardous (Y/N)
MP-PS1	Aug. 8, 2018	Paint	Baggie	Mitchell's Pond Camp/Cabin				X														X				X		
MP-PS2								X														X				X		
MP-PS3								X														X				X		
MP-MS1		Bulk																									X	
MP-PP-PS1		Paint		Michell's Pond Camp/Outhouse				X														X				X		
MP-PP-PS2								X														X				X		

Samples Relinquished By (Print Name): Lori Wiseman
Date/Time: Aug. 27, 2018
Samples Received By (Print Name): S Murphy
Date/Time: 150PM
Samples Relinquished By (Sign):
Date/Time:
Samples Received By (Sign):
Date/Time: Aug27/18

Pink Copy - Client
Yellow Copy - AGAT
White Copy- AGAT

Page 1 of 1
Nº:

Document ID: DIV-138-1502
Date revised: January 11, 2016

EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 551810131
Customer ID: 55MEEN26
Customer PO: TF18104243
Project ID:

Attn: Lori Wiseman
Wood Env. & Infrastructure Solutions
PO Box 13216
133 Crosbie Road
Saint John's, NL A1B 4A5

Phone: (709) 722-7023
Fax: (709) 722-7353
Collected: 8/13/2018
Received: 8/29/2018
Analyzed: 9/05/2018

Proj: HBMA TL CMAPS/TF18104243

Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: PP-AS1 ***Lab Sample ID:*** **551810131-0001**

Sample Description: PIN HILL POND CAMP - CABIN - WALL/BLACK PAPER ON PINK FIBREGLASS INSULATION

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	09/05/2018	Brown/Black/Pink	90%	10%	None Detected	

Client Sample ID: PP-AS2 ***Lab Sample ID:*** **551810131-0002**

Sample Description: PIN HILL POND CAMP - CABIN - WALL/TAR PAPER

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	09/05/2018	Brown	90%	10%	None Detected	

Client Sample ID: PP-AS3 ***Lab Sample ID:*** **551810131-0003**

Sample Description: PIN HILL POND CAMP - CABIN - ROOF/BLACK SHINGLE

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	09/05/2018	Black	0.0%	97.8%	**2.2% Chrysotile**	

Client Sample ID: PP-AS4 ***Lab Sample ID:*** **551810131-0004**

Sample Description: PIN HILL POND CAMP - CABIN - FOUNDATION/CONCRETE

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	09/05/2018	Gray	0%	100%	None Detected	

Client Sample ID: PP-AS5 ***Lab Sample ID:*** **551810131-0005**

Sample Description: PIN HILL POND CAMP - CABIN/CINDERBLOCK AND MORTAR

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	09/05/2018	Gray	0%	100%	None Detected	

Client Sample ID: PP-PP-AS1 ***Lab Sample ID:*** **551810131-0006**

Sample Description: PIN HILL POND CAMP - OUTHOUSE/BLACK SHINGLE AND TAR

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	09/05/2018	Black	0.0%	98.9%	**1.1% Chrysotile**	

EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 551810131
Customer ID: 55MEEN26
Customer PO: TF18104243
Project ID:

Attn:	Lori Wiseman Wood Env. & Infrastructure Solutions PO Box 13216 133 Crosbie Road Saint John's, NL A1B 4A5	Phone: Fax: Collected: Received: Analyzed:	(709) 722-7023 (709) 722-7353 8/13/2018 8/29/2018 9/05/2018
Proj:	HBMA TL CMAPS/TF18104243		

The samples in this report were submitted for asbestos bulk analysis. The reference number for these samples is the Order ID above. Please use this reference number when calling about these samples.

Sample Receipt Date:	08/29/2018	Sample Receipt Time:	5:00 pm
Analysis Completed Date:	09/05/2018	Analysis Completed Time:	3:23 pm

Analyst(s):

Signature Not Loaded
Caroline Allen PLM Grav. Reduction (2)

Signature Not Loaded
Ioana Taina PLM (4)

Reviewed and approved by:

Matthew Davis or other approved signatory
or Other Approved Signatory

Samples analyzed by EPA 600/R-93/116 consistent with NLR 111/98. The estimated limit of detection for non-detect samples is <0.1%. Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL`s liability is limited to the cost of analysis. 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 or any agency of the US Government.

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

OrderID: 551810131

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 551810131

EMSL Analytical, Inc.
2756 Slough Street
Mississauga, ON L4T 1G3
PHONE: 289-997-4602
FAX: 289-997-4607

Company: Wood Environment & Infrastructure Solutions	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 133 Crosbie Road	
City: St. John's **State/Province:** NL	**Zip/Postal Code:** A1B 4A5 **Country:** CA
Report To (Name): Lori Wiseman	**Telephone #:** (709) 722-7023
Email Address: lori.wiseman@woodplc.com	**Fax #:** (709) 722-7353 **Purchase Order:** TF18104243
Project Name/Number: HBMA TL Camps/TF18104243	**Please Provide Results:** ☐ Fax ✔ Email ☐ Mail
U.S. State Samples Taken: NL	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ■ 1 Week ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PLM - Bulk (reporting limit)	TEM – Bulk
■ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
■ PLM EPA NOB (<1%), IF REQUIRED BASED ON SAMPLE	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☐ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** August 13, 2018

Samplers Name: Craig Taylor **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description
PP-AS1		Pin Hill Pond Camp-Cabin – Wall	Black paper on pink fibreglass insulation
PP-AS2		Pin Hill Pond Camp-Cabin – Wall	Tar paper
PP-AS3		Pin Hill Pond Camp-Cabin – Roof	Black shingle
PP-AS4		Pin Hill Pond Camp-Cabin – Foundation	Concrete
PP-AS5		Pin Hill Pond Camp-Cabin	Cinder block and mortar
PP-PP-AS1		Pin Hill Pond Camp-Outhouse	Black shingle and tar

Client Sample # (s): - **Total # of Samples:** 6

Relinquished (Client): Lori Wiseman **Date:** August 27, 2018 **Time:** 9:47a.m.

Received (Lab): **Date:** **Time:**

Comments/Special Instructions:
Please advise if any samples require PLM NOB analysis
Analyze separate layers in each sample; excluding fibreglass insulation.

29AUG 18 10:55AM FDX 7730 7688 6820 VP

Mitchell’s Pond Camp Site COAs

emcscientific INCORPORATED

Laboratory Analysis Report

To:

Cary Hutchinson
AGAT Laboratories Ltd.
11 Morris Drive, Unit 122
Dartmouth, Nova Scotia
B3B 1M2

EMC LAB REPORT NUMBER: 67992
Job/Project Name:
Job/Project No: 18k378265 **No. of Samples:** 1
Sample Type: Bulk **Date Received:** Aug 28/18
Analysis Method(s): Direct Microscopic Examination
Date Analyzed: Sep 4/18 **Date Reported:** Sep 4/18
Analyst: Fajun Chen, Ph.D., *Principal Mycologist*

Client's Sample ID	Lab Sample No.	Date Sampled	Description/Location	Mould Identified, in Rank Order	Mould Growth
18k378265	296479	Aug 8/18	9501710 – MP-MS1	Myxomycete-like *Monodictys*-like *Septonema* *Aspergillus*	Sparse to moderate

Note:
1. Mould growth is subjectively assessed with description terms sparse, moderate and abundant.
2. The presence of spores (lacking other fungal structures associated) is assessed as following: a few spores (< 10 spores average per microscopic field at 400X), some spores (10 - 100 spores average per microscopic field at 400X), many spores (> 100 spores average per microscopic field at 400X).
3. The presence of a few spores generally represents settled spores on the surface of the sample rather than indicating mould growth.
4. The results are only related to the samples analyzed.

OrderID: 551810130

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 551810130

EMSL Analytical, Inc.
2756 Slough Street
Mississauga, ON L4T 1G3
PHONE: 289-997-4602
FAX: 289-997-4607

VP

Company: Wood Environment & Infrastructure Solutions	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments**
Street: 133 Crosbie Road	*Third Party Billing requires written authorization from third party*
City: St. John's **State/Province:** NL	**Zip/Postal Code:** A1B 4A5 **Country:** CA
Report To (Name): Lori Wiseman	**Telephone #:** (709) 722-7023
Email Address: lori.wiseman@woodplc.com	**Fax #:** (709) 722-7353 **Purchase Order:** TF18104243
Project Name/Number: HBMA TL Camps/TF18104243	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: NL	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☑ 1 Week ☐ 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT You will be asked to sign an authorization form for this service Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

PLM - Bulk (reporting limit)

- ☑ PLM EPA 600/R-93/116 (<1%)
- ☑ PLM EPA NOB (<1%), IF REQUIRED BASED ON SAMPLE
- Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- ☐ NIOSH 9002 (<1%)
- ☐ NY ELAP Method 198.1 (friable in NY)
- ☐ NY ELAP Method 198.6 NOB (non-friable-NY)
- ☐ OSHA ID-191 Modified
- ☐ Standard Addition Method

TEM – Bulk

- ☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
- ☐ NY ELAP Method 198.4 (TEM)
- ☐ Chatfield Protocol (semi-quantitative)
- ☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
- ☐ TEM Qualitative via Filtration Prep Technique
- ☐ TEM Qualitative via Drop Mount Prep Technique

Other

- ☐

☐ **Check For Positive Stop – Clearly Identify Homogenous Group**

Date Sampled: August 8, 2018

Samplers Name: Craig Taylor **Samplers Signature:** [signature]

Sample #	HA #	Sample Location	Material Description
MP-AS1		Mitchell's Pond Camp-Cabin - Wall	Foil with paper backing
MP-AS2		" " Camp - Cabin - Wall	Black pressboard
MP-AS3		" " Camp - Cabin - Wall	Tar paper
MP-AS4		" " Camp - Cabin - Exterior	Red brick
MP-AS5		" " Camp - Cabin - Exterior	Grey mortar (red brick)
MP-AS6		" " Camp - Cabin - Foundation	Grey mortar (cinder block)
MP-AS7		" " Camp - Cabin - Foundation	Cinder block
MP-AS8		" " Camp - Cabin - Roof	Black shingle and tar
MP-AS9		" " Camp - Cabin - chimney	Red sealant
MP-AS10		" " Camp - Cabin - Exterior	White caulking (vent)

Client Sample # (s): - **Total # of Samples:** 11

Relinquished (Client): Lori Wiseman **Date:** August 24, 2018 **Time:** 4:45 p.m.

Received (Lab): **Date:** **Time:**

Comments/Special Instructions:
Please advise if any samples require PLM NOB analysis.
Analyze separate layers in each sample, where applicable.

29AUG 18 10:57AM

FDX 7730 7688 6820 VP

OrderID: 551810130

EMSL Analytical, Inc.
2756 Slough Street
Mississauga, ON L4T 1G3
PHONE: 289-997-4602
FAX: 289-997-4607

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*:

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
MP-PP-AS1		Mitchell's Pond Camp-Outhouse-Roof	Shingle and tar
MP-PP-AS2		Mitchell's Pond Camp-Outhouse-Foundation	Concrete

***Comments/Special Instructions:**
Please advise if any samples require PLM NOB analysis.

57 Old Pennywell Road, Unit I
St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
FAX (709 747-2139
http://www.agatlabs.com

CLIENT NAME: **WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd.**
36 PIPPY PLACE
St. John's, NL A1B4A5
(709) 722-5062

ATTENTION TO: **Lori Wiseman**

PROJECT: **TF18104543**

AGAT WORK ORDER: **18K378265**

SOIL ANALYSIS REVIEWED BY: **Laura Baker, Inorganics Data Reporter**

TRACE ORGANICS REVIEWED BY: **Amy Hunter, Trace Organics Supervisor, B.Sc.**

DATE REPORTED: **Sep 06, 2018**

PAGES (INCLUDING COVER): **8**

VERSION*: **1**

Should you require any information regarding this analysis please contact your client services representative at (709)747-8573

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

Certificate of Analysis

AGAT WORK ORDER: 18K378265
PROJECT: TF18104543

57 Old Pennywell Road, Unit I
St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
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http://www.agatlabs.com

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**

SAMPLING SITE: **SAMPLED BY:**

Lead In Paint

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-09-06**

			SAMPLE DESCRIPTION:	MP-PS1	MP-PS2	MP-PS3	MP-PP-PS1	MP-PP-PS2
			SAMPLE TYPE:	Paint	Paint	Paint	Paint	Paint
			DATE SAMPLED:	2018-08-08	2018-08-08	2018-08-08	2018-08-08	2018-08-08
Parameter	**Unit**	**G / S**	**RDL**	9501707	9501708	9501709	9501711	9501712
Lead in Paint	mg/kg		15	199	56	18	205	<15
Total Sample Mass	g			0.4950	0.4984	0.5044	0.4943	0.4955

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

Certificate of Analysis

AGAT WORK ORDER: 18K378265

PROJECT: TF18104543

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St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
FAX (709 747-2139
http://www.agatlabs.com

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**

SAMPLING SITE: **SAMPLED BY:**

Mercury Analysis in Paint

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-09-06**

			SAMPLE DESCRIPTION:	MP-PS1	MP-PS2	MP-PS3	MP-PP-PS1	MP-PP-PS2
			SAMPLE TYPE:	Paint	Paint	Paint	Paint	Paint
			DATE SAMPLED:	2018-08-08	2018-08-08	2018-08-08	2018-08-08	2018-08-08
Parameter	Unit	G / S	RDL	9501707	9501708	9501709	9501711	9501712
Mercury	mg/kg		0.05	0.20	0.08	<0.05	0.10	<0.05

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

Certificate of Analysis

AGAT Laboratories

AGAT WORK ORDER: 18K378265

PROJECT: TF18104543

57 Old Pennywell Road, Unit I
St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
FAX (709 747-2139
http://www.agatlabs.com

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**

SAMPLING SITE: **SAMPLED BY:**

Total Polychlorinated Biphenyls in Paint

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-09-06**

			SAMPLE DESCRIPTION:	MP-PS1	MP-PS2	MP-PS3	MP-PP-PS1	MP-PP-PS2
			SAMPLE TYPE:	Paint	Paint	Paint	Paint	Paint
			DATE SAMPLED:	2018-08-08	2018-08-08	2018-08-08	2018-08-08	2018-08-08
Parameter	**Unit**	**G / S**	**RDL**	9501707	9501708	9501709	9501711	9501712
Total PCBs	mg/kg		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate	**Unit**	**Acceptable Limits**						
Decachlorobiphenyl	%	50-130		86	86	100	93	110

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

57 Old Pennywell Road, Unit I
St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
FAX (709 747-2139
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of
AGAT WORK ORDER: 18K378265
PROJECT: TF18104543
ATTENTION TO: Lori Wiseman
SAMPLING SITE:
SAMPLED BY:

Soil Analysis

RPT Date: Sep 06, 2018			DUPLICATE				REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Mercury Analysis in Paint															
Mercury	1	9500917	0.13	0.16	NA	< 0.05	92%	70%	130%	NA	70%	130%	81%	70%	130%
Lead In Paint															
Lead in Paint	1	9500917	< 15	< 15	0.0%	< 15	100%	70%	130%	105%	70%	130%	120%	70%	130%

Certified By:

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http://www.agatlabs.com

Quality Assurance

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of
PROJECT: TF18104543
SAMPLING SITE:

AGAT WORK ORDER: 18K378265
ATTENTION TO: Lori Wiseman
SAMPLED BY:

Trace Organics Analysis

RPT Date: Sep 06, 2018			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Total Polychlorinated Biphenyls in Paint															
Total PCBs	1	9500855	<0.5	<0.5	NA	< 0.5	94%	60%	140%	102%	60%	130%	92%	60%	130%

Comments: If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution.
If RPD value is NA, the results of the duplicates are less than 5x the RDL and the RPD will not be calculated.

Certified By:

57 Old Pennywell Road, Unit I
St. John's, NL
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TEL (709)747-8573
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Method Summary

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of

AGAT WORK ORDER: 18K378265

PROJECT: TF18104543

ATTENTION TO: Lori Wiseman

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Lead in Paint	MET-121-6105 & MET-121-6103	EPA SW 846 6020A/3050B & SM 3125	ICP-MS
Total Sample Mass			
Mercury	INOR-121-6101 & INOR-121-6107	Based on EPA 245.5 & SM 3112B	CV/AA
Trace Organics Analysis			
Total PCBs	ORG-120-5107	EPA SW-846 8082	GC/ECD
Decachlorobiphenyl	ORG-120-5106	EAP SW846 3510C/8080/8010	GC/ECD

AGAT Laboratories

Unit I, 57 Old Pennywell Rd
St John's, NL
A1E 6A8
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P: 709.747.8573 • F: 709.747.2139

Chain of Custody Record

Laboratory Use Only
Arrival Condition: ☒ Good ☐ Poor (see notes)
Arrival Temperature: 22.0
Hold Time:
AGAT Job Number: 18K378265
Notes:

Report Information

Company: Wood E&I Solutions (formerly Amec Foster Wheeler E&I)
Contact: Lori Wiseman
Address: 133 CROSBIE ROAD
ST. JOHNS, NL A1B 4A5
Phone: 1-709-722-7023 Fax: 1-709-722-7353
Client Project #: TF18104243
AGAT Quotation: NALCOR ESA (MIS-016)
Please Note: If quotation number is not provided client will be billed full price for analysis.

Report Information (Please print):

1. Name: Lori Wiseman
   Email: lori.wiseman@woodplc.com
2. Name:
   Email:

Report Format

☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Turnaround Time Required (TAT)

Regular TAT ☒ 5 to 7 working days
Rush TAT ☐ Same day ☐ 1 day ☐ 2 days ☐ 3 days
Date Required:

Regulatory Requirements (Check):

☐ List Guidelines on Report ☐ Do not list Guidelines on Report
☐ PIRI
☐ Tier 1 ☐ Res ☐ Pot ☐ Coarse
☐ Tier 2 ☐ Com ☐ N/Pot ☐ Fine
☐ Gas ☐ Fuel ☐ Lube
☒ CCME ☐ CDWQ
☐ Industrial ☒ Other TDG; HPA
☒ Commercial
☐ Res/Park
☐ Agricultural
☐ FWAL
☐ Sediment

Drinking Water Sample: ☐ Yes ☒ No Salt Water: ☐ Yes ☒ No
Reg. No.:

Invoice To

Same Yes ■ / No ☐

Company: Wood E&I Solutions
Contact: Sandra LeDrew and Project Manager indicated above
Address: 133 CROSBIE ROAD
ST. JOHNS, NL AIB 4A5
Phone: 1-709-722-7023 Fax: 1-709-722-7353
PO/Credit Card#:

Sample Identification	Date/Time Sampled	Sample Matrix	# Containers	Comments – Site/Sample Info. Sample Containment	Field Filtered/Preserved	Standard Water Analysis	Metals: ☐ Total ☐ Diss ☐ Available	Mercury	☐ BOD ☐ CBOD	pH	☐ TSS ☐ TDS ☐ VSS	TKN	Total Phosphorus	Phenols	Tier 1: TPH/BTEX (PIRI) ☐ low level	Tier 2: TPH/BTEX Fractionation	CCME-CWS TPH/BTEX	VOC	THM	HAA	PAH	PCB	TC + EC ☐ P/A ☐ MPN ☐ MF	☐ HPC ☐ Pseudomonas	Fecal Coliform ☐ MPN ☐ MF	Other: Lead	Other: Mould - DME	Hazardous (Y/N)
MP-PS1	Aug. 8, 2018	Paint	Baggie	Mitchell's Pond Camp/Cabin				X														X				X		
MP-PS2	↓	↓	↓	↓				X														X				X		
MP-PS3	↓	↓	↓	↓				X														X				X		
MP-MS1	↓	Bulk	↓	↓																							X	
MP-PP-PS1	↓	Paint	↓	Michell's Pond Camp/Outhouse				X														X				X		
MP-PP-PS2	↓	↓	↓	↓				X														X				X		

Samples Relinquished By (Print Name): Lori Wiseman
Date/Time: Aug. 27, 2018
Samples Relinquished By (Sign):
Date/Time:
Samples Received By (Print Name): [signature]
Date/Time: 150PM
Samples Received By (Sign):
Date/Time: Aug27/18

Pink Copy - Client
Yellow Copy - AGAT
White Copy- AGAT

Page 1 of 1
Nº:

Document ID: DIV-138-1502
Date revised: January 11, 2016

EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 551810130
Customer ID: 55MEEN26
Customer PO: TF18104243
Project ID:

Attn: Lori Wiseman
Wood Env. & Infrastructure Solutions
PO Box 13216
133 Crosbie Road
Saint John's, NL A1B 4A5

Phone: (709) 722-7023
Fax: (709) 722-7353
Collected: 8/ 8/2018
Received: 8/29/2018
Analyzed: 9/05/2018

Proj: HBMA TL Campus/ TF18104243

Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: MP-AS1 ***Lab Sample ID:*** **551810130-0001**

Sample Description: Mitchells Pond Camp - Cabin Wall/Foil with paper backing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	9/05/2018	Brown/Silver	50%	50%	None Detected	

Client Sample ID: MP-AS2 ***Lab Sample ID:*** **551810130-0002**

Sample Description: Mitchells Pond Camp - Cabin Wall/Black Pressboard

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	9/05/2018	Black/Beige	0.0%	100%	None Detected	

Client Sample ID: MP-AS3 ***Lab Sample ID:*** **551810130-0003**

Sample Description: Mitchells Pond Camp - Cabin Wall/Tar Paper

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	9/05/2018	Black	0.0%	100%	None Detected	

Client Sample ID: MP-AS4 ***Lab Sample ID:*** **551810130-0004**

Sample Description: Mitchells Pond Camp - Cabin Exterior/Red Brick

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	9/05/2018	Red	0%	100%	None Detected	

Client Sample ID: MP-AS5 ***Lab Sample ID:*** **551810130-0005**

Sample Description: Mitchells Pond Camp - Cabin Exterior/Grey Mortar (Red Brick)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	9/05/2018	Gray	0%	100%	None Detected	

Client Sample ID: MP-AS6 ***Lab Sample ID:*** **551810130-0006**

Sample Description: Mitchells Pond Camp - Cabin Foundation/Grey Mortar (Cinder Brick)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	9/05/2018	Gray	0%	100%	None Detected	

Client Sample ID: MP-AS7 ***Lab Sample ID:*** **551810130-0007**

Sample Description: Mitchells Pond Camp - Cabin Foundation/Cinder Block

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	9/05/2018	Gray	0%	100%	None Detected	

EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3

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

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

EMSL Canada Order 551810130
Customer ID: 55MEEN26
Customer PO: TF18104243
Project ID:

Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: MP-AS8 ***Lab Sample ID:*** **551810130-0008**

Sample Description: Mitchells Pond Camp - Cabin Roof/Black Shingle and Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	9/05/2018	Black	0.0%	100%	None Detected	

Client Sample ID: MP-AS9 ***Lab Sample ID:*** **551810130-0009**

Sample Description: Mitchells Pond Camp - Cabin Chimney/Red Sealant

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	9/05/2018	Brown	0.0%	100%	None Detected	

Client Sample ID: MP-AS10 ***Lab Sample ID:*** **551810130-0010**

Sample Description: Mitchells Pond Camp - Cabin Exterior/White Caulking (vent)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	9/05/2018	White	0.0%	100%	**<0.25% Chrysotile**	

Client Sample ID: MP-PP-AS1 ***Lab Sample ID:*** **551810130-0011**

Sample Description: Mitchells Pond Camp - Outhouse Roof/Shingle and Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	9/05/2018	Black	0.0%	100%	None Detected	

Client Sample ID: MP-PP-AS2 ***Lab Sample ID:*** **551810130-0012**

Sample Description: Mitchells Pond Camp - Outhouse Foundation/Concrete

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	9/05/2018	Gray	0%	100%	None Detected	

Analyst(s):

Harman Sohi PLM (6)
Natalie D'Amico PLM Grav. Reduction (6)

Reviewed and approved by:

Matthew Davis or other approved signatory
or Other Approved Signatory

Samples analyzed by EPA 600/R-93/116 consistent with NLR 111/98. The estimated limit of detection for non-detect samples is <0.1%. Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL`s liability is limited to the cost of analysis. 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 or any agency of the US Government.

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

Initial report from: 09/05/201815:19:51

Hungry Grove Camp Site COAs

57 Old Pennywell Road, Unit I
St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
FAX (709 747-2139
http://www.agatlabs.com

CLIENT NAME: **WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd.**
36 PIPPY PLACE
St. John's, NL A1B4A5
(709) 722-5062

ATTENTION TO: **Lori Wiseman**

PROJECT: **TF18104243**

AGAT WORK ORDER: **18K378211**

SOIL ANALYSIS REVIEWED BY: **Laura Baker, Inorganics Data Reporter**

TRACE ORGANICS REVIEWED BY: **Amy Hunter, Trace Organics Supervisor, B.Sc.**

DATE REPORTED: **Sep 05, 2018**

PAGES (INCLUDING COVER): **8**

VERSION*: **1**

Should you require any information regarding this analysis please contact your client services representative at (709)747-8573

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

Certificate of Analysis

AGAT WORK ORDER: 18K378211

PROJECT: TF18104243

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FAX (709 747-2139
http://www.agatlabs.com

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**

SAMPLING SITE: **SAMPLED BY:**

Lead In Paint

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-08-29**

			SAMPLE DESCRIPTION:	HG-PS1	HG-PS2	HG-PP-PS1
			SAMPLE TYPE:	Paint	Paint	Paint
			DATE SAMPLED:	2018-08-07	2018-08-07	2018-08-07
Parameter	**Unit**	**G / S**	**RDL**	**9500853**	**9500854**	**9500855**
Lead in Paint	mg/kg		15	868	228	280
Total Sample Mass	g			0.4932	0.5029	0.5019

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By: Laura Baker

Certificate of Analysis

AGAT WORK ORDER: 18K378211

PROJECT: TF18104243

57 Old Pennywell Road, Unit I
St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
FAX (709 747-2139
http://www.agatlabs.com

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**

SAMPLING SITE: **SAMPLED BY:**

Mercury Analysis in Paint

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-08-30**

			SAMPLE DESCRIPTION:	HG-PS1	HG-PS2	HG-PP-PS1
			SAMPLE TYPE:	Paint	Paint	Paint
			DATE SAMPLED:	2018-08-07	2018-08-07	2018-08-07
Parameter	**Unit**	**G / S**	**RDL**	9500853	9500854	9500855
Mercury	mg/kg		0.05	0.44	0.55	0.09

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

Certificate of Analysis

AGAT WORK ORDER: 18K378211
PROJECT: TF18104243

57 Old Pennywell Road, Unit I
St. John's, NL
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http://www.agatlabs.com

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**
SAMPLING SITE: **SAMPLED BY:**

Total Polychlorinated Biphenyls in Paint

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-09-05**

			SAMPLE DESCRIPTION:	HG-PS1	HG-PS2	HG-PP-PS1
			SAMPLE TYPE:	Paint	Paint	Paint
			DATE SAMPLED:	2018-08-07	2018-08-07	2018-08-07
Parameter	**Unit**	**G / S**	**RDL**	9500853	9500854	9500855
Total PCBs	mg/kg		0.5	<0.5	<0.5	<0.5
Surrogate	**Unit**	**Acceptable Limits**				
Decachlorobiphenyl	%	50-130		89	104	97

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

AGAT Laboratories

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St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
FAX (709 747-2139
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of
AGAT WORK ORDER: 18K378211
PROJECT: TF18104243
ATTENTION TO: Lori Wiseman
SAMPLING SITE:
SAMPLED BY:

Soil Analysis

RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Lead In Paint															
Lead in Paint	8292018	9500282	181	177	2.2%	< 15	116%	70%	130%	109%	70%	130%	95%	70%	130%
Mercury Analysis in Paint															
Mercury	1	9500917	0.13	0.16	NA	< 0.05	92%	70%	130%	NA	70%	130%	81%	70%	130%

Certified By:

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St. John's, NL
CANADA A1E 6A8
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Quality Assurance

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of
AGAT WORK ORDER: 18K378211
PROJECT: TF18104243
ATTENTION TO: Lori Wiseman
SAMPLING SITE:
SAMPLED BY:

Trace Organics Analysis

RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Total Polychlorinated Biphenyls in Paint															
Total PCBs	1	9500855	< 0.5	< 0.5	NA	< 0.5	94%	60%	140%	102%	60%	130%	92%	60%	130%

Comments: If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution.
If RPD value is NA, the results of the duplicates are less than 5x the RDL and the RPD will not be calculated.

Certified By:

57 Old Pennywell Road, Unit I
St. John's, NL
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FAX (709 747-2139
http://www.agatlabs.com

Method Summary

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of **AGAT WORK ORDER: 18K378211**

PROJECT: TF18104243 **ATTENTION TO: Lori Wiseman**

SAMPLING SITE: **SAMPLED BY:**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Lead in Paint	MET-121-6105 & MET-121-6103	EPA SW 846 6020A/3050B & SM 3125	ICP-MS
Total Sample Mass			
Mercury	INOR-121-6101 & INOR-121-6107	Based on EPA 245.5 & SM 3112B	CV/AA
Trace Organics Analysis			
Total PCBs	ORG-120-5107	EPA SW-846 8082	GC/ECD
Decachlorobiphenyl	ORG-120-5106	EAP SW846 3510C/8080/8010	GC/ECD

AGAT Laboratories

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Chain of Custody Record

Laboratory Use Only

Arrival Condition: ☑ Good ☐ Poor (see notes)
Arrival Temperature: 23.7°C
Hold Time:
AGAT Job Number: 18K378211
Notes:

Report Information

Company: Wood E&I Solutions (formerly Amec Foster Wheeler E&I)
Contact: Lori Wiseman
Address: 133 CROSBIE ROAD
ST. JOHNS, NL A1B 4A5
Phone: 1-709-722-7023 Fax: 1-709-722-7353
Client Project #: TF18104243
AGAT Quotation: NALCOR ESA (MIS-016)
Please Note: If quotation number is not provided client will be billed full price for analysis.

Report Information (Please print):

1. Name: Lori Wiseman
   Email: lori.wiseman@woodplc.com
2. Name:
   Email:

Report Format

☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Turnaround Time Required (TAT)

Regular TAT ☒ 5 to 7 working days
Rush TAT ☐ Same day ☐ 1 day ☐ 2 days ☐ 3 days
Date Required:

Drinking Water Sample: ☐ Yes ☒ No **Salt Water:** ☐ Yes ☒ No
Reg. No.:

Invoice To

Same Yes ■ / No ☐

Company: Wood E&I Solutions
Contact: Sandra LeDrew and Project Manager indicated above
Address: 133 CROSBIE ROAD
ST. JOHNS, NL AIB 4A5
Phone: 1-709-722-7023 Fax: 1-709-722-7353
PO/Credit Card#:

Regulatory Requirements (Check):

☐ List Guidelines on Report ☐ Do not list Guidelines on Report
☐ PIRI
☐ Tier 1 ☐ Res ☐ Pot ☐ Coarse
☐ Tier 2 ☐ Com ☐ N/Pot ☐ Fine
☐ Gas ☐ Fuel ☐ Lube
☒ CCME ☐ CDWQ
☐ Industrial ☒ Other TDG; HPA
☒ Commercial
☐ Res/Park
☐ Agricultural
☐ FWAL
☐ Sediment

Sample Identification	Date/Time Sampled	Sample Matrix	# Containers	Comments – Site/Sample Info. Sample Containment	Field Filtered/Preserved	Standard Water Analysis	Metals: ☐ Total ☐ Diss ☐ Available	Mercury	☐ BOD ☐ CBOD	pH	☐ TSS ☐ TDS ☐ VSS	TKN	Total Phosphorus	Phenols	Tier 1: TPH/BTEX (PIRI) ☐ low level	Tier 2: TPH/BTEX Fractionation	CCME-CWS TPH/BTEX	VOC	THM	HAA	PAH	PCB	TC + EC ☐ P/A ☐ MPN ☐ MF	☐ HPC ☐ Pseudomonas	Fecal Coliform ☐ MPN ☐ MF	Other: Lead	Other:	Hazardous (Y/N) Potential to Contain Bat Feces
HG-PS1	Aug. 7, 2018	Paint	Baggie	Hungry Grove Camp/Cabin				X														X				X		
HG-PS2	↓	↓	↓	↓				X														X				X		
HG-PP-PS1	↓	↓	↓	Hungry Grove Camp/Outhouse				X														X				X		

Samples Relinquished By (Print Name):	Date/Time	Samples Received By (Print Name):	Date/Time		
Lori Wiseman	Aug. 27, 2018	Samantha Murphy	1:50pm	Pink Copy - Client	Page 1 of 1
Samples Relinquished By (Sign):	Date/Time	Samples Received By (Sign):	Date/Time	Yellow Copy - AGAT	
		SMurphy	Aug 27/18	White Copy- AGAT	Nº:

EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 551810132
Customer ID: 55MEEN26
Customer PO: TF18104243
Project ID:

Attn: Lori Wiseman
Wood Env. & Infrastructure Solutions
PO Box 13216
133 Crosbie Road
Saint John's, NL A1B 4A5

Phone: (709) 722-7023
Fax: (709) 722-7353
Collected: 8/ 7/2018
Received: 8/29/2018
Analyzed: 9/05/2018

Proj: HBMA TL Camps/TF18104243

Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: HG-AS1 — ***Lab Sample ID:*** **551810132-0001**
Sample Description: Hungry Grove Pond Camp - Cabin - Exterior - Brown Brick

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	09/04/2018	Gray/Red	0%	100%	None Detected	

Client Sample ID: HG-AS2 — ***Lab Sample ID:*** **551810132-0002**
Sample Description: Hungry Grove Pond Camp - Cabin - Exterior - Grey mortar (brown brick)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	09/04/2018	Gray	0%	100%	None Detected	

Client Sample ID: HG-AS3 — ***Lab Sample ID:*** **551810132-0003**
Sample Description: Hungry Grove Pond Camp - Cabin - Exterior - White caulking (brick)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	09/05/2018	White	0.0%	100%	None Detected	

Client Sample ID: HG-AS4 — ***Lab Sample ID:*** **551810132-0004**
Sample Description: Hungry Grove Pond Camp - Cabin - Exterior - Grey mortar (red brick)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	09/04/2018	Gray	0%	100%	None Detected	

Client Sample ID: HG-AS5 — ***Lab Sample ID:*** **551810132-0005**
Sample Description: Hungry Grove Pond Camp - Cabin - Exterior - Red brick

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	09/04/2018	Red	0%	100%	None Detected	

Client Sample ID: HG-AS6 — ***Lab Sample ID:*** **551810132-0006**
Sample Description: Hungry Grove Pond Camp - Cabin - Foundation - Cinder block

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	09/04/2018	Gray	0%	100%	None Detected	

Client Sample ID: HG-AS7 — ***Lab Sample ID:*** **551810132-0007**
Sample Description: Hungry Grove Pond Camp - Cabin - Foundation - Grey mortar (cinder block)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	09/04/2018	Gray	0%	100%	None Detected	

Client Sample ID: HG-AS8 — ***Lab Sample ID:*** **551810132-0008**
Sample Description: Hungry Grove Pond Camp - Cabin - Roof - Black caulking/sealant

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	09/05/2018	White/Black	0.0%	100%	None Detected	

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

EMSL Canada Order 551810132
Customer ID: 55MEEN26
Customer PO: TF18104243
Project ID:

Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: HG-AS9 — ***Lab Sample ID:*** **551810132-0009**

Sample Description: Hungry Grove Pond Camp - Cabin - Roof - Black shingle and tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	09/05/2018	Black	0.0%	95.2%	**4.8% Chrysotile**	

Client Sample ID: HG-AS10 — ***Lab Sample ID:*** **551810132-0010**

Sample Description: Hungry Grove Pond Camp - Cabin - Chimney - Red sealant

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	09/05/2018	Brown	0.0%	100%	None Detected	

Client Sample ID: HG-AS11 — ***Lab Sample ID:*** **551810132-0011**

Sample Description: Hungry Grove Pond Camp - Cabin - Wall - Tar paper

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	09/05/2018	Brown/Black	0.0%	100%	None Detected	

Client Sample ID: HG-AS12 — ***Lab Sample ID:*** **551810132-0012**

Sample Description: Hungry Grove Pond Camp - Cabin - Wall - Black pressboard

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	09/05/2018	Brown/Black	0.0%	100%	None Detected	

Client Sample ID: HG-AS13 — ***Lab Sample ID:*** **551810132-0013**

Sample Description: Hungry Grove Pond Camp - Cabin - Wall - Tar paper

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	09/05/2018	Black	0.0%	100%	None Detected	

Client Sample ID: HG-PP-AS1 — ***Lab Sample ID:*** **551810132-0014**

Sample Description: Hungry Grove Pond Camp - Outhouse-Foundation - Concrete

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	09/04/2018	Gray	0%	100%	None Detected	

Client Sample ID: HG-PP-AS2 — ***Lab Sample ID:*** **551810132-0015**

Sample Description: Hungry Grove Pond Camp - Outhouse-Roof - Black shingle and tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	09/05/2018	Black	0.0%	100%	None Detected	

EMSL Canada Inc.

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

EMSL Canada Order 551810132
Customer ID: 55MEEN26
Customer PO: TF18104243
Project ID:

Attn:	Lori Wiseman Wood Env. & Infrastructure Solutions PO Box 13216 133 Crosbie Road Saint John's, NL A1B 4A5	Phone: Fax: Collected: Received: Analyzed:	(709) 722-7023 (709) 722-7353 8/ 7/2018 8/29/2018 9/05/2018
Proj:	HBMA TL Camps/TF18104243		

The samples in this report were submitted for asbestos bulk analysis. The reference number for these samples is the Order ID above. Please use this reference number when calling about these samples.

Sample Receipt Date:	08/29/2018	Sample Receipt Time:	10:56 am
Analysis Completed Date:	09/05/2018	Analysis Completed Time:	3:16 pm

Analyst(s):

Signature Not Loaded

Caroline Allen PLM Grav. Reduction (8)

Signature Not Loaded

Harman Sohi PLM (7)

Reviewed and approved by:

Matthew Davis or other approved signatory
or Other Approved Signatory

Samples analyzed by EPA 600/R-93/116 consistent with NLR 111/98. The estimated limit of detection for non-detect samples is <0.1%. Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL`s liability is limited to the cost of analysis. 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 or any agency of the US Government.

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

OrderID: 551810132

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 55181O132

EMSL Analytical, Inc.
2756 Slough Street

Mississauga, ON L4T 1G3
PHONE: 289-997-4602
FAX: 289-997-4607

VP

Company: Wood Environment & Infrastructure Solutions	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments**
Street: 133 Crosbie Road	*Third Party Billing requires written authorization from third party*
City: St. John's **State/Province:** NL	**Zip/Postal Code:** A1B 4A5 **Country:** CA
Report To (Name): Lori Wiseman	**Telephone #:** (709) 722-7023
Email Address: lori.wiseman@woodplc.com	**Fax #:** (709) 722-7353 **Purchase Order:** TF18104243
Project Name/Number: HBMA TL Camps/TF18104243	**Please Provide Results:** ☐ Fax ✔ Email ☐ Mail
U.S. State Samples Taken: NL	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ■ 1 Week ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PLM - Bulk (reporting limit)	**TEM – Bulk**
■ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
■ PLM EPA NOB (<1%), IF REQUIRED BASED ON SAMPLE	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☐ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** August 7, 2018

Samplers Name: Craig Taylor **Samplers Signature:**

Sample #	HA #	Sample Location	Material Description
HG-AS1		Hungry Grove Pond Camp – Cabin – Exterior	Brown brick
HG-AS2		" " " Camp – Cabin – Exterior	Grey mortar (brown brick)
HG-AS3		" " " Camp – Cabin – Exterior	White caulking (brick)
HG-AS4		" " " Camp – Cabin – Exterior	Grey mortar (red brick)
HG-AS5		" " " Camp – Cabin – Exterior	Red brick
HG-AS6		" " " Camp – Cabin – Foundation	Cinder block
HG-AS7		" " " Camp – Cabin – Foundation	Grey mortar (cinder block)
HG-AS8		" " " Camp – Cabin – Roof	Black caulking/sealant
HG-AS9		" " " Camp – Cabin – Roof	Black shingle and tar
HG-AS10		" " " Camp – Cabin – Chimney	Red sealant

Client Sample # (s): - **Total # of Samples:** 15

Relinquished (Client): Lori Wiseman **Date:** August 24, 2018 **Time:** 4:30p.m.

Received (Lab): **Date:** **Time:**

Comments/Special Instructions:
Please advise if any samples require PLM NOB analysis.

29AUG 18 10:56AM FDX 7730 7608 6020 VP

OrderID: 551810132

EMSL Analytical, Inc.
2756 Slough Street

Mississauga, ON L4T 1G3
PHONE: 289-997-4602
FAX: 289-997-4607

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*:

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
HG-AS11		Hungry Grove Pond Camp-Cabin-Wall	Tar paper
HG-AS12		" " " Camp-Cabin-Wall	Black pressboard
HG-AS13		" " " Camp-Cabin-Wall	Tar paper
HG-PPAS1		" " " Camp-Outhouse-Foundation	Concrete
HG-PPAS2		" " " Camp-Outhouse-Roof	Black shingle and tar

***Comments/Special Instructions:**
Please advise if any samples require PLM NOB analysis.

Camp 100 Site COAs

57 Old Pennywell Road, Unit I
St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
FAX (709 747-2139
http://www.agatlabs.com

CLIENT NAME: **WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd.**
36 PIPPY PLACE
St. John's, NL A1B4A5
(709) 722-5062

ATTENTION TO: **Lori Wiseman**

PROJECT: **TF18104243**

AGAT WORK ORDER: **18K378248**

SOIL ANALYSIS REVIEWED BY: **Laura Baker, Inorganics Data Reporter**

TRACE ORGANICS REVIEWED BY: **Amy Hunter, Trace Organics Supervisor, B.Sc.**

DATE REPORTED: **Sep 05, 2018**

PAGES (INCLUDING COVER): **8**

VERSION*: **1**

Should you require any information regarding this analysis please contact your client services representative at (709)747-8573

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

57 Old Pennywell Road, Unit I
St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
FAX (709 747-2139
http://www.agatlabs.com

Certificate of Analysis

AGAT WORK ORDER: 18K378248
PROJECT: TF18104243

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**
SAMPLING SITE: **SAMPLED BY:**

Lead In Paint

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-08-30**

			SAMPLE DESCRIPTION:	C100-PS1	C100-PS2	C100-PP-PS1	C100-PP-PS2
			SAMPLE TYPE:	Other	Other	Other	Other
			DATE SAMPLED:	2018-08-08	2018-08-08	2018-08-08	2018-08-08
Parameter	Unit	G / S	RDL	9501275	9501280	9501281	9501282
Lead in Paint	mg/kg		15	489	17	101	22
Total Sample Mass	g			0.4999	0.4985	0.4955	0.4980

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

Results relate only to the items tested and to all the items tested

Certificate of Analysis

AGAT WORK ORDER: 18K378248
PROJECT: TF18104243

57 Old Pennywell Road, Unit I
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TEL (709)747-8573
FAX (709 747-2139
http://www.agatlabs.com

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**
SAMPLING SITE: **SAMPLED BY:**

Mercury Analysis in Paint

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-08-30**

			SAMPLE DESCRIPTION:	C100-PS1	C100-PS2	C100-PP-PS1	C100-PP-PS2
			SAMPLE TYPE:	Other	Other	Other	Other
			DATE SAMPLED:	2018-08-08	2018-08-08	2018-08-08	2018-08-08
Parameter	**Unit**	**G / S**	**RDL**	**9501275**	**9501280**	**9501281**	**9501282**
Mercury	mg/kg		0.05	0.52	3.83	0.21	1.08

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

57 Old Pennywell Road, Unit I
St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
FAX (709 747-2139
http://www.agatlabs.com

AGAT Laboratories

Certificate of Analysis

AGAT WORK ORDER: 18K378248

PROJECT: TF18104243

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd.

ATTENTION TO: Lori Wiseman

SAMPLING SITE:

SAMPLED BY:

Total Polychlorinated Biphenyls in Paint

DATE RECEIVED: 2018-08-27

DATE REPORTED: 2018-09-05

			SAMPLE DESCRIPTION:	C100-PS1	C100-PS2	C100-PP-PS1	C100-PP-PS2
			SAMPLE TYPE:	Other	Other	Other	Other
			DATE SAMPLED:	2018-08-08	2018-08-08	2018-08-08	2018-08-08
Parameter	**Unit**	**G / S**	**RDL**	9501275	9501280	9501281	9501282
Total PCBs	mg/kg		0.5	<0.5	<0.5	<0.5	<0.5
Surrogate	**Unit**	**Acceptable Limits**					
Decachlorobiphenyl	%	50-130		110	95	105	94

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

Results relate only to the items tested and to all the items tested

57 Old Pennywell Road, Unit I
St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
FAX (709 747-2139
http://www.agatlabs.com

Quality Assurance

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of
AGAT WORK ORDER: 18K378248
PROJECT: TF18104243
ATTENTION TO: Lori Wiseman
SAMPLING SITE:
SAMPLED BY:

Soil Analysis

RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Lead In Paint															
Lead in Paint	1	9500917	< 15	< 15	0.0%	< 15	100%	70%	130%	105%	70%	130%	120%	70%	130%
Mercury Analysis in Paint															
Mercury	1	9500917	0.13	0.16	NA	< 0.05	92%	70%	130%	NA	70%	130%	81%	70%	130%

Certified By:

AGAT Laboratories

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Quality Assurance

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of
PROJECT: TF18104243
SAMPLING SITE:

AGAT WORK ORDER: 18K378248
ATTENTION TO: Lori Wiseman
SAMPLED BY:

Trace Organics Analysis

RPT Date:			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Total Polychlorinated Biphenyls in Paint															
Total PCBs	1	9500855	<0.5	<0.5	NA	< 0.5	94%	60%	140%	102%	60%	130%	92%	60%	130%

Comments: If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution.
If RPD value is NA, the results of the duplicates are less than 5x the RDL and the RPD will not be calculated.

Certified By:

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Method Summary

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of
PROJECT: TF18104243
SAMPLING SITE:

AGAT WORK ORDER: 18K378248
ATTENTION TO: Lori Wiseman
SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Lead in Paint	MET-121-6105 & MET-121-6103	EPA SW 846 6020A/3050B & SM 3125	ICP-MS
Total Sample Mass			
Mercury	INOR-121-6101 & INOR-121-6107	Based on EPA 245.5 & SM 3112B	CV/AA
Trace Organics Analysis			
Total PCBs	ORG-120-5107	EPA SW-846 8082	GC/ECD
Decachlorobiphenyl	ORG-120-5106	EAP SW846 3510C/8080/8010	GC/ECD

AGAT Laboratories

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St John's, NL
A1E 6A8
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Chain of Custody Record

Laboratory Use Only

Arrival Condition: [x] Good [ ] Poor (see notes)
Arrival Temperature: 22.4
Hold Time:
AGAT Job Number: 18K378248
Notes:

Report Information

Company: Wood E&I Solutions (formerly Amec Foster Wheeler E&I)
Contact: Lori Wiseman
Address: 133 CROSBIE ROAD
ST. JOHNS, NL A1B 4A5
Phone: 1-709-722-7023 Fax: 1-709-722-7353
Client Project #: TF18104243
AGAT Quotation: NALCOR ESA (MIS-016)
Please Note: If quotation number is not provided client will be billed full price for analysis.

Report Information (Please print):

1. Name: Lori Wiseman
Email: lori.wiseman@woodplc.com
2. Name:
Email:

Report Format

[ ] Single Sample per page
[x] Multiple Samples per page
[x] Excel Format Included

Turnaround Time Required (TAT)

Regular TAT [x] 5 to 7 working days
Rush TAT [ ] Same day [ ] 1 day [ ] 2 days [ ] 3 days
Date Required:

Regulatory Requirements (Check):

[ ] List Guidelines on Report [ ] Do not list Guidelines on Report
[ ] PIRI
[ ] Tier 1 [ ] Res [ ] Pot [ ] Coarse
[ ] Tier 2 [ ] Com [ ] N/Pot [ ] Fine
[ ] Gas [ ] Fuel [ ] Lube
[x] CCME [ ] CDWQ
[ ] Industrial [x] Other TDG; HPA
[x] Commercial
[ ] Res/Park
[ ] Agricultural
[ ] FWAL
[ ] Sediment

Drinking Water Sample: [ ] Yes [x] No Salt Water: [ ] Yes [x] No
Reg. No.:

Invoice To

Same Yes ■ / No [ ]

Company: Wood E&I Solutions
Contact: Sandra LeDrew and Project Manager indicated above
Address: 133 CROSBIE ROAD
ST. JOHNS, NL AIB 4A5
Phone: 1-709-722-7023 Fax: 1-709-722-7353
PO/Credit Card#:

Sample Identification	Date/Time Sampled	Sample Matrix	# Containers	Comments – Site/Sample Info. Sample Containment	Field Filtered/Preserved	Standard Water Analysis	Metals: [ ] Total [ ] Diss [ ] Available	Mercury	[ ] BOD [ ] CBOD	pH	[ ] TSS [ ] TDS [ ] VSS	TKN	Total Phosphorus	Phenols	Tier 1: TPH/BTEX (PIRI) [ ] low level	Tier 2: TPH/BTEX Fractionation	CCME-CWS TPH/BTEX	VOC	THM	HAA	PAH	PCB	TC + EC [ ] P/A [ ] MPN [ ] MF	[ ] HPC [ ] Pseudomonas	Fecal Coliform [ ] MPN [ ] MF	Other: Lead	Other:	Hazardous (Y/N)
C100-PS1	Aug. 8, 2018	Paint	Baggie	Camp 100/Cabin				X														X				X		
C100-PS2	↓	↓	↓	Camp 100/Cabin				X														X				X		
C100-PP-PS1	↓	↓	↓	Camp 100/Outhouse				X														X				X		
C100-PP-PS2	↓	↓	↓	Camp 100/Outhouse				X														X				X		

Samples Relinquished By (Print Name): Lori Wiseman
Date/Time: Aug. 27, 2018
Samples Received By (Print Name): [signature]
Date/Time: 150PM
Samples Relinquished By (Sign):
Date/Time
Samples Received By (Sign):
Date/Time: Aug27/18

Pink Copy - Client
Yellow Copy - AGAT
White Copy- AGAT

Page 1 of 1
Nº:

Document ID: DIV-138-1502
Date revised: January 11, 2016

EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 551810133
Customer ID: 55MEEN26
Customer PO: TF18104243
Project ID:

Attn:	Lori Wiseman Wood Env. & Infrastructure Solutions PO Box 13216 133 Crosbie Road Saint John's, NL A1B 4A5	Phone: Fax: Collected: Received: Analyzed:	(709) 722-7023 (709) 722-7353 8/ 8/2018 8/29/2018 9/05/2018
Proj:	HBMA TL Camps/TF18104243		

Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: C100-AS1 ***Lab Sample ID:*** **551810133-0001**
Sample Description: Camp 100 - Cabin - Wall - Grey mortar (brown brick)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	09/04/2018	Gray	0%	100%	None Detected	

Client Sample ID: C100-AS2 ***Lab Sample ID:*** **551810133-0002**
Sample Description: Camp 100 - Cabin - Wall - Brown brick

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	09/04/2018	Red	0%	100%	None Detected	

Client Sample ID: C100-AS3 ***Lab Sample ID:*** **551810133-0003**
Sample Description: Camp 100 - Cabin - Wall - Grey mortar (red brick)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	09/04/2018	Gray	0%	100%	None Detected	

Client Sample ID: C100-AS4 ***Lab Sample ID:*** **551810133-0004**
Sample Description: Camp 100 - Cabin - Wall - Red brick

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	09/04/2018	Red	0%	100%	None Detected	

Client Sample ID: C100-AS5 ***Lab Sample ID:*** **551810133-0005**
Sample Description: Camp 100 - Cabin - Wall - Tar paper

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	09/05/2018	Black	0.0%	78.8%	**21.2% Chrysotile**	

Client Sample ID: C100-AS6 ***Lab Sample ID:*** **551810133-0006**
Sample Description: Camp 100 - Cabin - Wall - Black pressboard

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	09/05/2018	Tan/Black	0.0%	100%	None Detected	

Client Sample ID: C100-PP-AS1 ***Lab Sample ID:*** **551810133-0007**
Sample Description: Camp 100 - Outhouse - Roof - Black felt and tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	09/05/2018	Black	0.0%	98.9%	**1.1% Chrysotile**	

Client Sample ID: C100-PP-AS2 ***Lab Sample ID:*** **551810133-0008**
Sample Description: Camp 100 - Outhouse - Foundation - Concrete

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	09/04/2018	Gray	0%	100%	None Detected	

EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 551810133
Customer ID: 55MEEN26
Customer PO: TF18104243
Project ID:

Attn:	Lori Wiseman Wood Env. & Infrastructure Solutions PO Box 13216 133 Crosbie Road Saint John's, NL A1B 4A5	Phone: Fax: Collected: Received: Analyzed:	(709) 722-7023 (709) 722-7353 8/ 8/2018 8/29/2018 9/05/2018
Proj:	HBMA TL Camps/TF18104243		

The samples in this report were submitted for asbestos bulk analysis. The reference number for these samples is the Order ID above. Please use this reference number when calling about these samples.

Sample Receipt Date: 08/29/2018 Sample Receipt Time: 10:55 am
Analysis Completed Date: 09/05/2018 Analysis Completed Time: 3:51 pm

Analyst(s):

Signature Not Loaded
Caroline Allen PLM Grav. Reduction (3)

Signature Not Loaded
Harman Sohi PLM (5)

Reviewed and approved by:

Matthew Davis or other approved signatory
or Other Approved Signatory

Samples analyzed by EPA 600/R-93/116 consistent with NLR 111/98. The estimated limit of detection for non-detect samples is <0.1%. Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL`s liability is limited to the cost of analysis. 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 or any agency of the US Government.

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

OrderID: 551810133

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 551810133

EMSL Analytical, Inc.
2756 Slough Street
Mississauga, ON L4T 1G3
PHONE: 289-997-4602
FAX: 289-997-4607

VP

Company: Wood Environment & Infrastructure Solutions	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 133 Crosbie Road	
City: St. John's **State/Province:** NL	**Zip/Postal Code:** A1B 4A5 **Country:** CA
Report To (Name): Lori Wiseman	**Telephone #:** (709) 722-7023
Email Address: lori.wiseman@woodplc.com	**Fax #:** (709) 722-7353 **Purchase Order:** TF18104243
Project Name/Number: HBMA TL Camps/TF18104243	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: NL	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ■ 1 Week ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PLM - Bulk (reporting limit)	TEM – Bulk
■ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
■ PLM EPA NOB (<1%), IF REQUIRED BASED ON SAMPLE	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☐ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** August 8, 2018

Samplers Name: Craig Taylor **Samplers Signature:** [signature]

Sample #	HA #	Sample Location	Material Description
C100-AS1		Camp 100 – Cabin – Wall	Grey mortar (brown brick)
C100-AS2		Camp 100 – Cabin – Wall	Brown brick
C100-AS3		Camp 100 – Cabin – Wall	Grey mortar (red brick)
C100-AS4		Camp 100 – Cabin – Wall	Red brick
C100-AS5		Camp 100 – Cabin – Wall	Tar paper
C100-AS6		Camp 100 – cabin – Wall	Black pressboard
C100-PP-AS1		Camp 100 – Outhouse – Roof	Black felt and tar
C100-PP-AS2		Camp 100 – Outhouse – Foundation	Concrete

Client Sample # (s): **Total # of Samples:** 8

Relinquished (Client): Lori Wiseman **Date:** August 27, 2018 **Time:** 9:35a.m

Received (Lab): **Date:** **Time:**

Comments/Special Instructions:
Please advise if any samples require PLM NOB analysis.
Analyze all layers in each sample, where applicable.

29AUG 18 10:55AL FDX 7730 7688 6820 VP

Medonnegonik Lake Camp Site COAs

emcscientific INCORPORATED

Laboratory Analysis Report

To:

Cary Hutchinson
AGAT Laboratories Ltd.
11 Morris Drive, Unit 122
Dartmouth, Nova Scotia
B3B 1M2

EMC LAB REPORT NUMBER: 67993
Job/Project Name:
Job/Project No: 18k378258 **No. of Samples:** 1
Sample Type: Tape Lift **Date Received:** Aug 29/18
Analysis Method(s): Direct Microscopic Examination
Date Analyzed: Sep 4/18 **Date Reported:** Sep 4/18
Analyst: Weizhong Liu, Ph.D., *Mycologist*
Approved By: Fajun Chen, Ph.D., *Principal Mycologist*

Client's Sample ID	Lab Sample No.	Date Sampled	Description/Location	Mould Identified, in Rank Order	Mould Growth
18k378258	296480	Aug 7/18	9501342 – MDX-MS1	*Cladosporium* *Acremonium*	Sparse

Note:
1. Mould growth is subjectively assessed with description terms sparse, moderate and abundant.
2. The presence of spores (lacking other fungal structures associated) is assessed as following: a few spores (< 10 spores average per microscopic field at 400X), some spores (10 - 100 spores average per microscopic field at 400X), many spores (> 100 spores average per microscopic field at 400X).
3. The presence of a few spores generally represents settled spores on the surface of the sample rather than indicating mould growth.
4. The results are only related to the samples analyzed.

OrderID: 551810148

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*: 551810148

EMSL Analytical, Inc.
2756 Slough Street
Mississauga, ON L4T 1G3
PHONE: 289-997-4602
FAX: 289-997-4607

Company : Wood Environment & Infrastructure Solutions	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments**
Street: 133 Crosbie Road	*Third Party Billing requires written authorization from third party*
City: St. John's **State/Province:** NL	**Zip/Postal Code:** A1B 4A5 **Country:** CA
Report To (Name): Lori Wiseman	**Telephone #:** (709) 722-7023
Email Address: lori.wiseman@woodplc.com	**Fax #:** (709) 722-7353 **Purchase Order:** TF18104243
Project Name/Number: HBMA TL Camps/TF18104243	**Please Provide Results:** ☐ Fax ☑ Email ☐ Mail
U.S. State Samples Taken: NL	**CT Samples:** ☐ Commercial/Taxable ☐ Residential/Tax Exempt

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PLM - Bulk (reporting limit)	TEM – Bulk
☒ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
☒ PLM EPA NOB (<1%), IF REQUIRED BASED ON SAMPLE	☐ NY ELAP Method 198.4 (TEM)
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1 (friable in NY)	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB (non-friable-NY)	**Other**
☐ OSHA ID-191 Modified	☐
☐ Standard Addition Method	

☐ **Check For Positive Stop – Clearly Identify Homogenous Group** **Date Sampled:** August 7, 2018

Samplers Name: Craig Taylor **Samplers Signature:** [signature]

Sample #	HA #	Sample Location	Material Description
MDX-AS1		Medonnegonik Camp – Cabin – Wall	Black paper on pink fibreglass insulation
MDX-AS2		" Camp – Cabin – Wall	Black pressboard and tar paper
MDX-AS3		" Camp – Cabin – Exterior	Grey mortar (red brick)
MDX-AS4		" Camp – Cabin – Exterior	Red brick
MDX-AS5		" Camp – Cabin – Foundation	Cinder block
MDX-AS6		" Camp – Cabin – Foundation	Grey mortar (cinder block)
MDX-AS7		" Camp – Cabin – Exterior	White caulking (brick)
MDX-AS8		" Camp – Cabin – Exterior	Brown brick
MDX-AS9		" Camp – Cabin – Exterior	Grey mortar (brown brick)
MDX-AS10		" Camp – Cabin – Roof	Black shingle and tar

Client Sample # (s): - **Total # of Samples:** 12

Relinquished (Client): Lori Wiseman **Date:** August 24, 2018 **Time:** 4:00 p.m.

Received (Lab): **Date:** **Time:**

Comments/Special Instructions:
Please advise if any samples require PLM NOB analysis.
Analyze separate layers in each sample; excluding fibreglass insulation.

29AUG 18 10:55AM

FDX 7730 76[illegible] VP

EMSL Analytical, Inc.
2756 Slough Street
Mississauga, ON L4T 1G3
PHONE: 289-997-4602
FAX: 289-997-4607

EMSL ANALYTICAL, INC.
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Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(Lab Use Only)*:

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
MDX-AS11		Medonnegonik Camp - Cabin - Roof	Green/black shingle and tar
MDX-PP-AS1		" Camp - Outhouse - Roof	Black shingle and tar

***Comments/Special Instructions:**
Please advise if any samples require PLM NOB analysis.

Page 2 of 2 pages

57 Old Pennywell Road, Unit I
St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
FAX (709 747-2139
http://www.agatlabs.com

CLIENT NAME: **WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd.**
36 PIPPY PLACE
St. John's, NL A1B4A5
(709) 722-5062

ATTENTION TO: **Lori Wiseman**

PROJECT: **TF18104243**

AGAT WORK ORDER: **18K378258**

SOIL ANALYSIS REVIEWED BY: **Jason Coughtrey, Inorganics Supervisor**

TRACE ORGANICS REVIEWED BY: **Amy Hunter, Trace Organics Supervisor, B.Sc.**

DATE REPORTED: **Sep 10, 2018**

PAGES (INCLUDING COVER): **9**

VERSION*: **1**

Should you require any information regarding this analysis please contact your client services representative at (709)747-8573

NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.

Certificate of Analysis

AGAT WORK ORDER: 18K378258
PROJECT: TF18104243

57 Old Pennywell Road, Unit I
St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
FAX (709 747-2139
http://www.agatlabs.com

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**

SAMPLING SITE: **SAMPLED BY:**

Lead In Paint

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-09-10**

			SAMPLE DESCRIPTION:	MDX-PS1	MDX-PS2	MDX-PS3	MDX-PP-PS1
			SAMPLE TYPE:	Paint	Paint	Paint	Paint
			DATE SAMPLED:	2018-08-07	2018-08-07	2018-08-07	2018-08-07
Parameter	**Unit**	**G / S**	**RDL**	**9501337**	**9501339**	**9501340**	**9501341**
Lead in Paint	mg/kg		15	185	1110	725	109
Total Sample Mass	g			0.5058	0.4947	0.5003	0.5084

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

Results relate only to the items tested and to all the items tested

Certificate of Analysis

AGAT WORK ORDER: 18K378258
PROJECT: TF18104243

57 Old Pennywell Road, Unit I
St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
FAX (709 747-2139
http://www.agatlabs.com

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**
SAMPLING SITE: **SAMPLED BY:**

Mercury Analysis in Paint

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-09-10**

			SAMPLE DESCRIPTION:	MDX-PS1	MDX-PS2	MDX-PS3	MDX-PP-PS1
			SAMPLE TYPE:	Paint	Paint	Paint	Paint
			DATE SAMPLED:	2018-08-07	2018-08-07	2018-08-07	2018-08-07
Parameter	**Unit**	**G / S**	**RDL**	**9501337**	**9501339**	**9501340**	**9501341**
Mercury	mg/kg		0.05	7.87	0.14	1.42	0.06

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

Certificate of Analysis

AGAT WORK ORDER: 18K378258
PROJECT: TF18104243

AGAT Laboratories
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St. John's, NL
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FAX (709 747-2139
http://www.agatlabs.com

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**

SAMPLING SITE: **SAMPLED BY:**

O. Reg. 558 - SVOCs

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-09-10**

Parameter	Unit	G / S	RDL	9501343
			SAMPLE DESCRIPTION:	MDX-PT1
			SAMPLE TYPE:	Wood
			DATE SAMPLED:	2018-08-07
Cresols	mg/L		0.012	<0.012
Ortho-Cresol	mg/L		0.004	<0.004
Meta & Para-Cresol	mg/L		0.008	<0.008
Benzo(a)pyrene	mg/L		0.001	<0.001
Surrogate	**Unit**	**Acceptable Limits**		
Chrysene-d12	%	50-130		69

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

9501343 Due to insufficient sample volume, the Toxicity Characteristic Leaching Procedure (TCLP) was completed using a sample mass which did not meet the prescriptive, minimum sample requirements to perform the TCLP as specified in the reference method (EPA Method 1311) as mandated under R.R.O. 1990, Reg. 347: GENERAL - WASTE MANAGEMENT under Environmental Protection Act, R.S.O. 1990, c. E.19

Certified By:

Certificate of Analysis

AGAT WORK ORDER: 18K378258

PROJECT: TF18104243

57 Old Pennywell Road, Unit I
St. John's, NL
CANADA A1E 6A8
TEL (709)747-8573
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CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of Wood Canada Ltd. **ATTENTION TO: Lori Wiseman**

SAMPLING SITE: **SAMPLED BY:**

Total Polychlorinated Biphenyls in Paint

DATE RECEIVED: 2018-08-27 **DATE REPORTED: 2018-09-10**

			SAMPLE DESCRIPTION:	MDX-PS1	MDX-PS2	MDX-PS3	MDX-PP-PS1
			SAMPLE TYPE:	Paint	Paint	Paint	Paint
			DATE SAMPLED:	2018-08-07	2018-08-07	2018-08-07	2018-08-07
Parameter	**Unit**	**G / S**	**RDL**	9501337	9501339	9501340	9501341
Total PCBs	mg/kg		0.5	<0.5	<0.5	<0.5	<0.5
Surrogate	**Unit**	**Acceptable Limits**					
Decachlorobiphenyl	%	50-130		101	105	113	123

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Certified By:

AGAT Laboratories

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St. John's, NL
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Quality Assurance

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of
PROJECT: TF18104243
SAMPLING SITE:

AGAT WORK ORDER: 18K378258
ATTENTION TO: Lori Wiseman
SAMPLED BY:

Soil Analysis

RPT Date: Sep 10, 2018			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper
Mercury Analysis in Paint															
Mercury	1	9501339	0.14	0.15	NA	< 0.05	93%	70%	130%		70%	130%	95%	70%	130%
Lead In Paint															
Lead in Paint	1	9500917	< 15	< 15	0.0%	< 15	100%	70%	130%	105%	70%	130%	120%	70%	130%

Certified By: Jason Coughtrey

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Quality Assurance

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of
PROJECT: TF18104243
SAMPLING SITE:

AGAT WORK ORDER: 18K378258
ATTENTION TO: Lori Wiseman
SAMPLED BY:

Trace Organics Analysis

RPT Date: Sep 10, 2018			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper	Recovery	Acceptable Limits Lower	Acceptable Limits Upper
Total Polychlorinated Biphenyls in Paint															
Total PCBs	1	9500914	<0.5	<0.5	NA	< 0.5	98%	60%	140%	100%	60%	130%	112%	60%	130%

Comments: If Matrix spike value is NA, the spiked analyte concentration was lower than that of the matrix contribution.
If RPD value is NA, the results of the duplicates are less than 5x the RDL and the RPD will not be calculated.

PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Method Blank	Measured Value	Lower	Upper	Recovery	Lower	Upper	Recovery	Lower	Upper
O. Reg. 558 - SVOCs															
Cresols		TW	< 0.012	< 0.012	NA	< 0.012	89%	60%	130%	87%	35%	110%	NA	30%	130%
Ortho-Cresol		TW	< 0.004	< 0.004	NA	< 0.004	87%	50%	130%	76%	50%	130%	NA	50%	130%
Meta & Para-Cresol		TW	< 0.008	< 0.008	NA	< 0.008	81%	50%	130%	94%	50%	130%	NA	50%	130%
Benzo(a)pyrene		TW	< 0.001	< 0.001	NA	< 0.001	87%	60%	130%	99%	60%	130%	NA	60%	130%

Comments: When the average of the sample and duplicate results is less than 5x the RDL, the Relative Percent Difference (RPD) will be indicated as Not Applicable (NA).

Certified By:

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Method Summary

CLIENT NAME: WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, a div. of **AGAT WORK ORDER: 18K378258**

PROJECT: TF18104243 **ATTENTION TO: Lori Wiseman**

SAMPLING SITE: **SAMPLED BY:**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Soil Analysis			
Lead in Paint	MET-121-6105 & MET-121-6103	EPA SW 846 6020A/3050B & SM 3125	ICP-MS
Total Sample Mass			
Mercury	INOR-121-6101 & INOR-121-6107	Based on EPA 245.5 & SM 3112B	CV/AA
Trace Organics Analysis			
Cresols	ORG-91-5114	EPA SW846 3510C & 8270	GC/MS
Ortho-Cresol	ORG-91-5114	EPA SW846 3510C & 8270	GC/MS
Meta & Para-Cresol	ORG-91-5114	EPA SW846 3510C & 8270	GC/MS
Benzo(a)pyrene	ORG-91-5114	EPA SW846 3510C & 8270	GC/MS
Chrysene-d12	ORG-91-5114	EPA SW846 3510C & 8270	GC/MS
Total PCBs	ORG-120-5107	EPA SW-846 8082	GC/ECD
Decachlorobiphenyl	ORG-120-5106	EAP SW846 3510C/8080/8010	GC/ECD

AGAT Laboratories

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Chain of Custody Record

P: 709.747.8573 • F: 709.747.2139

Laboratory Use Only

Arrival Condition: ☒ Good ☐ Poor (see notes)
Arrival Temperature: 25.4
Hold Time:
AGAT Job Number: 18K378258
Notes:

Report Information

Company: Wood E&I Solutions (formerly Amec Foster Wheeler E&I)
Contact: Lori Wiseman
Address: 133 CROSBIE ROAD
ST. JOHNS, NL A1B 4A5
Phone: 1-709-722-7023 Fax: 1-709-722-7353
Client Project #: TF18104243
AGAT Quotation: NALCOR ESA (MIS-016)
Please Note: If quotation number is not provided client will be billed full price for analysis.

Report Information (Please print):

1. Name: Lori Wiseman
   Email: lori.wiseman@woodplc.com
2. Name:
   Email:

Report Format

☐ Single Sample per page
☒ Multiple Samples per page
☒ Excel Format Included

Turnaround Time Required (TAT)

Regular TAT ☒ 5 to 7 working days
Rush TAT ☐ Same day ☐ 1 day ☐ 2 days ☐ 3 days
Date Required:

Regulatory Requirements (Check):

☐ List Guidelines on Report ☐ Do not list Guidelines on Report
☐ PIRI
☐ Tier 1 ☐ Res ☐ Pot ☐ Coarse
☐ Tier 2 ☐ Com ☐ N/Pot ☐ Fine
☐ Gas ☐ Fuel ☐ Lube
☒ CCME ☐ CDWQ
☐ Industrial ☒ Other TDG; HPA
☒ Commercial
☐ Res/Park
☐ Agricultural
☐ FWAL
☐ Sediment

Drinking Water Sample: ☐ Yes ☒ No Salt Water: ☐ Yes ☒ No
Reg. No.:

Invoice To Same Yes ■ / No ☐

Company: Wood E&I Solutions
Contact: Sandra LeDrew and Project Manager indicated above
Address: 133 CROSBIE ROAD
ST. JOHNS, NL AIB 4A5
Phone: 1-709-722-7023 Fax: 1-709-722-7353
PO/Credit Card#:

Sample Identification	Date/Time Sampled	Sample Matrix	# Containers	Comments – Site/Sample Info. Sample Containment	Field Filtered/Preserved	Standard Water Analysis	Metals: ☐ Total ☐ Diss ☐ Available	Mercury	☐ BOD ☐ CBOD	Treated Wood-Inorganic	☐ TSS ☐ TDS ☐ VSS	Treated Wood-Chlorophenolic Formulation	Total Phosphorus	Phenols	Tier 1: TPH/BTEX (PIRI) ☐ low level	Tier 2: TPH/BTEX Fractionation	CCME-CWS TPH/BTEX	VOC	THM	HAA	PAH	PCB	TC + EC ☐ P/A ☐ MPN ☐ MF	☐ HPC ☐ Pseudomonas	Fecal Coliform ☐ MPN ☐ MF	Other: Lead	Other: Mould - DME	Hazardous (Y/N)
MDX-PS1	Aug. 7, 2018	Paint	Baggie	Medonnegonik Camp/Cabin				X														X				X		
MDX-PS2	↓	↓	↓	↓				X														X				X		
MDX-PS3	↓	↓	↓	↓				X														X				X		
MDX-PP-PS1	↓	↓	↓	Medonnegonik Camp/Outhouse				X														X				X		
MDX-MS1	↓	Bulk	↓	Medonnegonik Camp/Cabin																							X	
MDX-PT1	↓	Wood	↓	Medonnegonik Camp/Heli-Pad						X		X																

Samples Relinquished By (Print Name):	Date/Time	Samples Received By (Print Name):	Date/Time	Pink Copy - Client	Page 1 of 1
Lori Wiseman	Aug. 27, 2018	[signature]	150 pm	Yellow Copy - AGAT	
Samples Relinquished By (Sign):	Date/Time	Samples Received By (Sign):	Date/Time Aug 27/18	White Copy- AGAT	Nº:

Document ID: DIV-138-1502

Date revised: January 11, 2016

EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com / torontolab@emsl.com

EMSL Canada Order 551810148
Customer ID: 55MEEN26
Customer PO: TF18104243
Project ID:

Attn: Lori Wiseman
Wood Env. & Infrastructure Solutions
PO Box 13216
133 Crosbie Road
Saint John's, NL A1B 4A5

Phone: (709) 722-7023
Fax: (709) 722-7353
Collected: 8/ 7/2018
Received: 8/29/2018
Analyzed: 9/05/2018

Proj: HBMA TL Camps/TF18104243

Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: MDX-AS1 ***Lab Sample ID:*** **551810148-0001**

Sample Description: Medonnegonik Camp - Cabin - Wall/Black Paper on Pink Fibreglass Insulation

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	9/05/2018	Black/Beige	85%	15%	None Detected	

Client Sample ID: MDX-AS2 ***Lab Sample ID:*** **551810148-0002**

Sample Description: Medonnegonik Camp - Cabin - Wall/Black Pressboard and Tar Paper

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	9/05/2018	Black	0.0%	100%	None Detected	

Client Sample ID: MDX-AS3 ***Lab Sample ID:*** **551810148-0003**

Sample Description: Medonnegonik Camp - Cabin - Exterior/Grey Mortar (Red Brick)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	9/05/2018	Gray	0%	100%	None Detected	

Client Sample ID: MDX-AS4 ***Lab Sample ID:*** **551810148-0004**

Sample Description: Medonnegonik Camp - Cabin - Exterior/Red Brick

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	9/05/2018	Red	0%	100%	None Detected	

Client Sample ID: MDX-AS5 ***Lab Sample ID:*** **551810148-0005**

Sample Description: Medonnegonik Camp - Cabin - Foundation/Cinder Block

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	9/05/2018	Gray	0%	100%	None Detected	

Client Sample ID: MDX-AS6 ***Lab Sample ID:*** **551810148-0006**

Sample Description: Medonnegonik Camp - Cabin - Foundation/Grey Mortar (Cinder Block)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	9/05/2018	Gray	0%	100%	None Detected	

Client Sample ID: MDX-AS7 ***Lab Sample ID:*** **551810148-0007**

Sample Description: Medonnegonik Camp - Cabin - Exterior/White Caulking (Brick)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	9/05/2018	Gray	0.0%	100%	None Detected	

EMSL Canada Inc.

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

EMSL Canada Order 551810148
Customer ID: 55MEEN26
Customer PO: TF18104243
Project ID:

Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: MDX-AS8 ***Lab Sample ID:*** **551810148-0008**

Sample Description: Medonnegonik Camp - Cabin - Exterior/Brown Brick

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	9/05/2018	Brown	0%	100%	None Detected	

Client Sample ID: MDX-AS9 ***Lab Sample ID:*** **551810148-0009**

Sample Description: Medonnegonik Camp - Cabin - Exterior/Grey Mortar (Brown Brick)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	9/05/2018	Gray	0%	100%	None Detected	

Client Sample ID: MDX-AS10 ***Lab Sample ID:*** **551810148-0010**

Sample Description: Medonnegonik Camp - Cabin - Roof/Black Shingle and Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	9/05/2018	Black	0.0%	100%	None Detected	

Client Sample ID: MDX-AS11 ***Lab Sample ID:*** **551810148-0011**

Sample Description: Medonnegonik Camp - Cabin - Roof/Green/Black Shingle and Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	9/05/2018	Black	0.0%	100%	None Detected	

Client Sample ID: MDX-PP-AS1 ***Lab Sample ID:*** **551810148-0012**

Sample Description: Medonnegonik Camp - Outhouse - Roof/Black Shingle and Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	9/05/2018	Black	0.0%	99.2%	**0.79% Chrysotile**	

Analyst(s):

Caroline Allen	PLM (7)
Natalie D'Amico	PLM Grav. Reduction (5)

Reviewed and approved by:

Matthew Davis or other approved signatory
or Other Approved Signatory

Samples analyzed by EPA 600/R-93/116 consistent with NLR 111/98. The estimated limit of detection for non-detect samples is <0.1%. Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL`s liability is limited to the cost of analysis. 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 or any agency of the US Government.

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

Initial report from: 09/05/201815:01:19

APPENDIX B8

REPORT LIMITATIONS

LIMITATIONS

1. The work performed in the preparation of this report and the conclusions presented are subject to the following:

   (a) The Standard Terms and Conditions which form a part of our Contract;
   (b) The Scope of Services;
   (c) Time and Budgetary limitations as described in our Contract; and,
   (d) The Limitations stated herein.

2. No other warranties or representations, either expressed or implied, are made as to the professional services provided under the terms of our Contract, or the conclusions presented.

3. The conclusions presented in this report were based, in part, on visual observations of the site and attendant structures. Our conclusions cannot and are not extended to include those portions of the site or structures which were not reasonably available, in Wood's opinion, for direct observation.

4. The environmental conditions at the site were assessed, within the limitations set out above, having due regard for applicable environmental regulations as of the date of the inspection. A review of compliance by past owners or occupants of the site with any applicable local, provincial or federal by-laws, orders-in-council, legislative enactments and regulations was not performed.

5. Where testing was performed it was carried out in accordance with the terms of our contract providing for testing. Other substances, or different quantities of substances testing for, might be present on site and be revealed by different or other testing not provided for in our contract.

6. The findings within this report do not reflect potential ACMs in areas not accessed, such as remote space areas, roof areas, wall cavities and ceilings spaces. During future renovations or demolition activities and subsequent removal of interior wall and ceiling materials, the actual quantities of asbestos containing materials can be verified. Also, at this time, analysis of suspect ACM materials may be required if the appearance differs from that of materials previously confirmed to contain asbestos in adjacent rooms.

7. Because of the limitations referred to above, different environmental conditions from those stated in our report might exist. Should such different conditions be encountered, Wood must be notified in order that it may determine if modifications to the conclusions in the report are necessary.

8. The utilization of Wood's services during the implementation of any remedial measures will allow Wood to observe compliance with the conclusions and recommendations contained in the report. Wood's involvement will also allow for changes to be made as necessary to suit field conditions as they are encountered.

9. This report is for the sole use of the party to whom it is addressed unless expressly stated otherwise in the report or contract. Any use which any third party makes of the report, in whole or the part, or any reliance thereon or decisions made based on any information or conclusions in the report, is the sole responsibility of such third party. Wood accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on the report or anything set out therein.

10. This report is not to be given over to any third party for any purpose whatsoever without the written permission of Wood.