

SECTION 5.0 EXECUTIVE SUMMARY

Hazardous materials identified at the videograph building during the March 2013 HBMS are summarized in Table E-5. It should be noted that the videograph building is not slated for demolition.

Table E-5: Hazardous Material Description

| Hazardous Material | Regulatory Guidelines | Location | Quantity (Approx.) | Disposal |
|---------------------|--|-----------------------------|--------------------|-----------------|
| Lead Acid Batteries | Federal Hazardous Products Act (R.S.1985, c. H-3); NL Department of Environment 2003 Guidance Document for Leachable Toxic Waste and Disposal (GD-PPD-26.1); Federal Transportation of Dangerous Goods Act (1992, c. 34) | Site Building Interior | - | Not Applicable. |
| Silica Dust | American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs), 2010 | Concrete Building Materials | - | Not Applicable. |

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5.0 VIDEOGRAPH BUILDING

The videograph building (or equipment building) is located on the main site area of the Bacalhao Island Lightstation (refer to Figures 1.1 and 1.2, Appendix A1 and Photos 1 and 2, Appendix B1). Based on the Directory of Federal Real Property, the equipment building (Building No. 106674) on Bacalhao Island was constructed in 2001. It should be noted that the videograph building is not slated for demolition.

5.1 BUILDING DESCRIPTION

A description of the Site building is outlined in Table 5-1. Photographs of the videograph building are provided in Appendix B5.

Table 5-1: Site Building Description

| Building Name | Videograph Building | Photo (Appendix B5) |
|--------------------------|-----------------------|---------------------|
| Number of Stories | One | Photos 1 and 2 |
| Basement | No | Not Applicable |
| Attic | Yes | None |
| Type of Structure | Wooden Frame | Photos 2 and 3 |
| Type of Foundation | Unpainted Concrete | Photo 2 |
| Exterior | Painted Wooden Siding | Photo 4 |
| Window/Door Frames | Painted Wooden Frames | Photo 3 |
| Exterior Doors | Metal | Photo 3 |
| Roofing Materials | Asphalt Shingles | Photo 4 |
| Interior Walls Finishes | Painted Plywood | No Photo Available |
| Ceiling Finishes | Painted Plywood | No Photo Available |
| Floor Finishes | Unpainted Concrete | No Photo Available |
| Interior Doors | None | Not Applicable |
| Interior Lighting | Incandescent | No Photo Available |
| Exterior Lighting | None | Not Applicable |
| Heating | None | Not Applicable |
| Chimney | None | Not Applicable |
| Aboveground Storage Tank | None | Not Applicable |
| Plumbing | None | Not Applicable |

5.2 FINDINGS

The findings documented in this section are based on observations made by AMEC personnel at the time of the Site visit and laboratory analyses of samples collected from the videograph building during the March 2013 HBMS.

5.2.1 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. 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.

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.

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.

A total of four (4) building material samples (BAC-AS-19 to BAC-AS-22) were collected from the videograph building and analyzed for asbestos content (refer to Photos 5, 6 and 7, Appendix B5). Sample descriptions and analytical results are summarized in Table C5-1, Appendix C5. Sample locations and analytical results are graphically illustrated in Figure 5.1, Appendix A5.

5.2.1.1 Friable Materials

5.2.1.1.1 Spray-Applied Fireproofing, Insulation and Texture Finishes

No spray-applied fireproofing, insulation or texture finishes were observed within the videograph building during the Site visit; therefore, no samples were collected for analysis during the March 2013 HBMS.

5.2.1.2 Non-Friable and Potentially Friable Materials

5.2.1.2.1 Ceiling Tile

There were no ceiling tiles observed in the videograph building during the Site visit; therefore, no samples of ceiling tile were collected for analysis during the March 2013 HBMS.

5.2.1.2.2 Drywall Joint Compound

There was no drywall or associated joint compound observed in the videograph building during the Site visit; therefore, no samples of drywall joint compound were collected for analysis during the March 2013 HBMS.

5.2.1.2.3 Vinyl Flooring Products and Mastics

There was no vinyl flooring or associated mastics observed in the videograph building during the Site visit; therefore, no samples of vinyl flooring or mastics were collected for analysis during the March 2013 HBMS.

5.2.1.2.4 Baseboard, Carpet and Stair Tread Adhesives/Mastics

There were no baseboard, carpet or stair tread adhesives/mastics observed in the videograph building during the Site visit; therefore, no samples of these types of adhesives/mastics were collected for analysis during the March 2013 HBMS.

5.2.1.2.5 Roofing Products

One (1) sample of asphalt shingle roofing material (BAC-AS-20) was collected from the roof of the videograph building and analyzed for asbestos content (refer to Photo 5, Appendix B5). Asbestos was not detected in the asphalt shingle sample collected from the videograph building.

5.2.1.2.6 Thermal System Insulation

One sample of yellow foam insulation (BAC-AS-19) was collected from piping in the floor of the videograph building and analyzed for asbestos content. Asbestos was not detected in the foam insulation sample collected from the videograph building.

5.2.1.2.7 Weather Stripping and Caulking

No samples of weather stripping were collected from the videograph building during the March 2013 HBMS.

Two (2) samples of caulking (BAC-AS-21 and BAC-AS-22) were collected from the exterior of the videograph building and analyzed for asbestos content (refer to Photos 6 and 7, Appendix B5). Asbestos was not detected in the caulking samples collected from the videograph building.

5.2.1.2.8 Mortar, Grout and Other Cementitious Materials

No samples of mortar, grout or other cementitious materials were collected from the videograph building during the March 2013 HBMS.

5.2.1.2.9 Other Potential ACMs

Other potential ACMs were observed and were not sampled due to the nature of the materials. These materials included, but are not limited to, electrical components and insulators such as wiring and gaskets inside electrical panels, electronic and/or videograph equipment. Other possible hidden and inaccessible ACMs have the potential to be present at the Site but were not identified during the Site investigations. These possible ACMs could include fire rated structures or building materials and underground infrastructure and piping.

5.2.2 Paint Finishes

The condition of the paint visible on the interior and exterior of the videograph building varied from good to poor condition. The paint on the exterior metal door was deteriorated due to corrosion (refer to Photo 8, Appendix B5).

A total of two (2) samples (BAC-PS-18 and BAC-PS-19) were collected from painted surfaces of the videograph building and analyzed for lead and mercury content (refer to Photo 8, Appendix B5). Sample descriptions and analytical results are summarized in Tables C5-2 and C5-3, Appendix C5. Sample locations and analytical results are graphically illustrated in Figure 5.1, Appendix A5.

5.2.2.1 Lead in Paint

All of the paint samples analyzed for lead were non-detect (<5.0 mg/kg) and therefore did not exceed the Federal HPA criterion of 90 mg/kg or the former Federal HPA criterion of 5,000 mg/kg for lead in paint (refer to Table C5-2, Appendix C5).

5.2.2.2 Mercury in Paint

All of the paint samples analyzed for mercury were non-detect (<1.0 mg/kg) and therefore did not exceed the Federal HPA criterion of 10 mg/kg for mercury in paint or the CCME CSQG of 24 mg/kg for mercury in soil at a commercial site (refer to Table C5-3, Appendix C5).

5.2.3 Urea Formaldehyde Foam Insulation (UFFI)

Visual indicators suggesting the potential presence of UFFI was not observed in the videograph building. The nature of the insulation in the walls and ceiling of the videograph building could not be confirmed at the time of the March 2013 HBMS Site inspection. Since the videograph building was constructed in 2001, it is not likely that UFFI is present in the building.

5.2.4 Suspected Visible Mould Growth (SVG)

AMEC inspected the interior areas of the videograph building for visual or olfactory evidence of suspected mould. No building cavity inspections were performed by AMEC during the March 2013 HBMS. No areas of SVG and/or water damage were observed on the interior surfaces of the videograph building at the time of the Site visit.

5.2.5 Mercury-Containing Thermostats

There were no thermostats observed in the videograph building during the March 2013 HBMS Site visit.

5.2.6 PCB-Containing Light Ballasts

There were no fluorescent light fixtures observed in the videograph building during the March 2013 HBMS Site visit. Therefore, no fluorescent light ballasts were inspected for the presence or absence of PCB-containing dielectric fluid.

5.2.7 Potential Sources of ODSs and Halocarbons

No potential sources of ODSs were identified in the videograph building during the March 2013 HBMS Site visit.

5.2.8 Other Potentially Hazardous Building Materials or Substances

Other potentially hazardous building materials or substances identified during the March 2013 HBMS are presented in the following sections.

5.2.8.1 Mercury

Fluorescent light tubes and bulbs often contain limited quantities of mercury in a powder or vapour form; however, no light fluorescent light tubes or bulbs were observed in the videograph building during the March 2013 HBMS Site visit.

5.2.8.2 Lead

Lead is typically associated with plumbing solder and older pipe materials, as well as products such as radiation protective shielding and lead-acid batteries.

Several potential lead-acid batteries (i.e., solar batteries) were noted inside the videograph building at the time of the March 2013 HBMS Site inspection.

5.2.8.3 Silica

Silica is expected to be present in the concrete used to construct the foundation for the videograph building. Precaution should be taken to prevent/reduce exposure to silica dust during any disturbance/demolition of silica-containing products.

5.2.8.4 Ash

Solid wastes such as ash from chimneys or furnaces were not observed within the videograph building during the March 2013 HBMS Site visit.

5.3 CONCLUSIONS AND RECOMMENDATIONS

Based on observations made and information gathered during the March 2013 HBMS, the following conclusions and recommendations are made with respect to the potential and actual presence of hazardous building materials at the videograph building:

Asbestos-Containing Materials (ACMs)

- Results of the asbestos sampling and analytical program revealed that none of the building materials sampled during the assessment contain asbestos.
- Other potential ACMs were observed and were not sampled due to the nature of the materials. These materials included, but are not limited to, electrical components and insulators such as wiring and gaskets inside electrical panels, electronic and/or videograph equipment.
- Other possible hidden and inaccessible ACMs have the potential to be present at the Site but were not identified during the Site visit. These possible ACMs could include fire rated structures or building materials, and underground infrastructure and piping.
- If other potential ACMs that could not be sampled as part of this assessment due to access issues 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.

Lead and Mercury in Paint

- Results of the paint sampling and analytical program revealed that none of the paint finishes sampled during the assessment contain lead or mercury at concentrations above the reportable detection limits.
- Paint finishes with a lead concentration of less than 5,000 mg/kg or a mercury concentration of less than 24 mg/kg are not likely to be leachable and therefore may be disposed of at an approved landfill facility, pending landfill and regulatory approval.
- If potential lead or mercury containing paint finishes that were not sampled during the March 2013 HBMS are encountered in the future, samples should be obtained and tested to verify lead and mercury content. This should be done as soon as the paint is encountered and before it is disturbed. This includes materials that are currently concealed by walls and ceiling systems.

Urea Formaldehyde Foam Insulation (UFFI)

- Visual indicators suggesting the potential presence of UFFI was not observed in the videograph building. The nature of the insulation in the walls and ceiling of the videograph building could not be confirmed at the time of the March 2013 HBMS Site inspection. Since the videograph building was constructed in 2001, it is not likely that UFFI is present in the building.

Lead-Containing Materials/Equipment

- Several potential lead-acid batteries (i.e., solar batteries) were noted inside the videograph building at the time of the March 2013 HBMS Site inspection.
- The disturbance, control or disposal of lead-containing material/equipment (e.g., batteries, etc.) should be carried out in accordance with applicable criteria/regulations (refer to Section 1.4). 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 recycling facility and not a landfill.
- If required, 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).

Silica Dust

- Silica is expected to be present in concrete used to construct the foundation of the videograph building. 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 the work area.

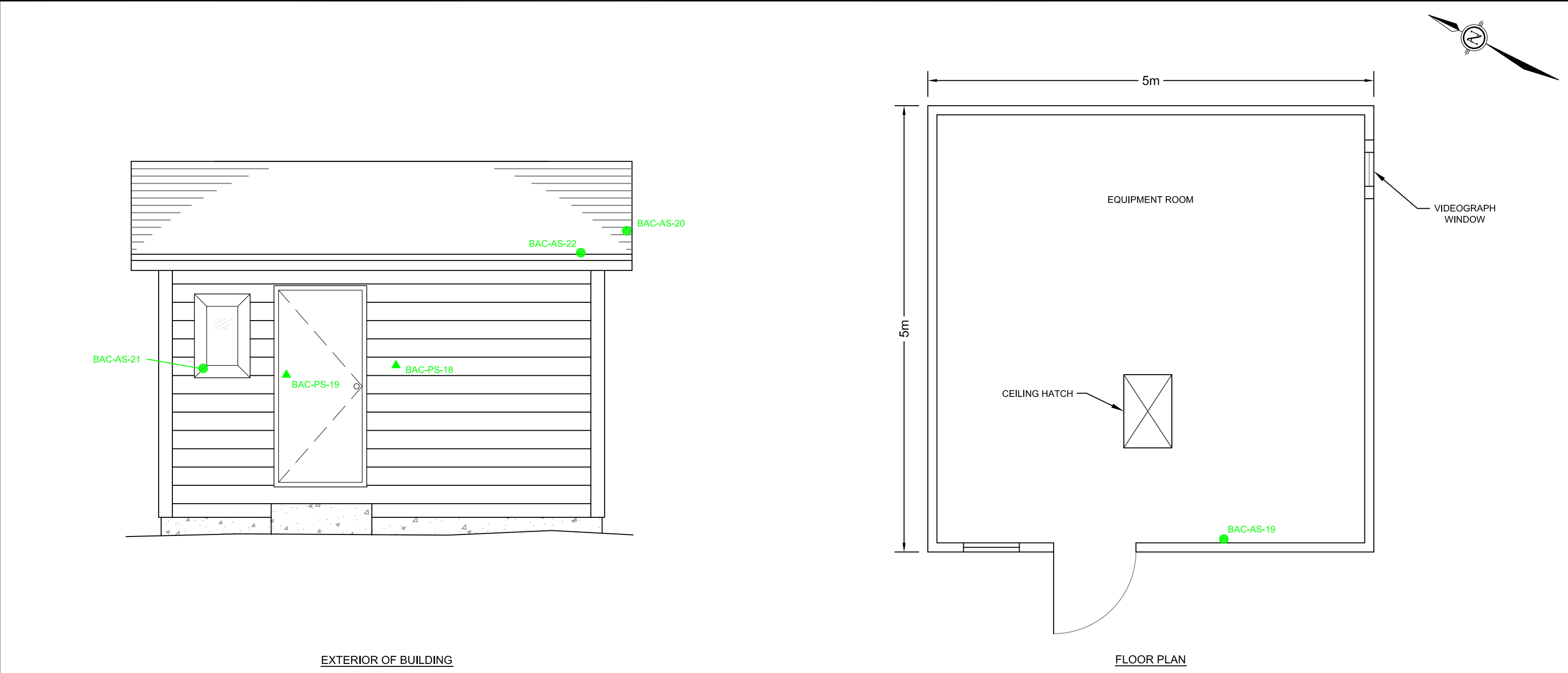
Hazardous materials identified at the videograph building during the March 2013 HBMS are summarized in Table 5-2. It should be noted that the videograph building is not slated for demolition.

Table 5-2: Hazardous Material Description

| Hazardous Material | Regulatory Guidelines | Location | Quantity (Approx.) | Disposal |
|---------------------|--|-----------------------------|--------------------|-----------------|
| Lead Acid Batteries | Federal Hazardous Products Act (R.S.1985, c. H-3); NL Department of Environment 2003 Guidance Document for Leachable Toxic Waste and Disposal (GD-PPD-26.1); Federal Transportation of Dangerous Goods Act (1992, c. 34) | Site Building Interior | - | Not Applicable. |
| Silica Dust | American Conference of Governmental Industrial Hygienists (ACGIH), Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs), 2010 | Concrete Building Materials | - | Not Applicable. |


APPENDIX A5

FIGURES



LEGEND:

- ▲ PAINT SAMPLE LOCATION - RESULTS DID NOT EXCEED
- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED OR RESULTS < 1% FOR ASBESTOS

| | | | | |
|--|--|-------------------------|---|---------------------------|
| NOTE: 1. ALL DIMENSIONS ARE IN METRES. 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 PUBLIC WORKS AND GOVERNMENT SERVICES CANADA AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT. 7. THIS FIGURE WAS PRODUCED FROM FIGURES SUPPLIED BY PUBLIC WORKS AND GOVERNMENT SERVICES CANADA. | <div><div></div><div>Public Works and Government Services Canada</div><div>Travaux publics et Services gouvernementaux Canada</div></div> | DWN BY: H. Ryan | PROJECT DEMOLITION HAZARDOUS BUILDING MATERIALS ASSESSMENT AND INVENTORY, BACALHAO ISLAND LIGHTSTATION BACALHAO ISLAND, NL | DATE February 2014 |
| | | | | PROJECT No. TF13076513 |
| | <div>AMEC Environment & Infrastructure</div> <div>133 Crosbie Road St. John's, NL A1B 4A5 709-722-7023</div> | CHK'D BY: L. Wiseman | TITLE VIDEOGRAPH BUILDING SAMPLE LOCATION PLAN | REV. No. 0 |
| | | SCALE: As Shown | | FIGURE No. 5.1 |

APPENDIX B5
PHOTOGRAPHIC RECORD



Photo 1: View of north and west sides of videograph building and dwelling.



Photo 2: View of north and west sides of videograph building.



Photo 3: View of north side of videograph building.



Photo 4: View of east side of videograph building.



Photo 5: View of location of asphalt shingle sample BAC-AS-20.



Photo 6: View of location of window caulking sample BAC-AS-21.

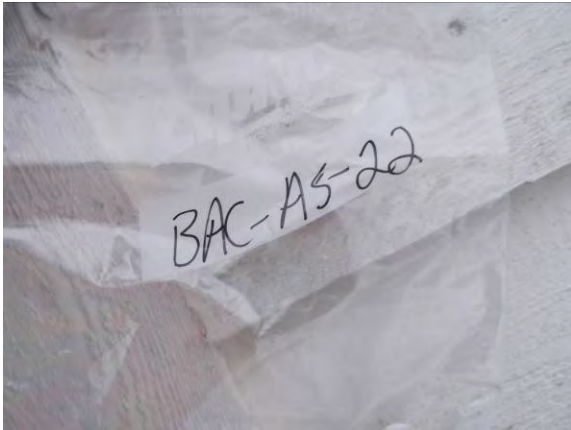


Photo 7: View of caulking sample BAC-AS-22.



Photo 8: View of paint sample BAC-PS-19.

APPENDIX C5
SAMPLE AND ANALYTICAL SUMMARY TABLES

Table C5-1: Asbestos Sample Descriptions and Analytical Results

| Sample ID | Material (Layer) Analyzed | Detailed Material Description | AMEC Rm # | Analytical Result |
|-----------|---------------------------|--|---------------------------------|-------------------|
| BAC-AS-19 | Insulation | Yellow foam insulation on piping in floor. | Videograph Building Interior | ND |
| BAC-AS-20 | Asphalt Shingle | Black/Red asphalt shingles. | Videograph Building Exterior | ND |
| BAC-AS-21 | Caulking | White window caulking. | Videograph Building Exterior | ND |
| BAC-AS-22 | Caulking | Clear caulking around wood shingles. | Videograph Building Exterior | ND |

ND: non-detect

ND = <1% asbestos

Shaded results greater than 1% asbestos by dry weight are considered to be asbestos-containing materials (ACMs) as outlined in the Newfoundland and Labrador Asbestos Abatement Regulations (Reg. 111/98)



Table C5-2: Paint Sample Descriptions and Lead Analytical Results

| Sample ID | Colour Description | Substrate | Sample Location (Room No.) | RDL (mg/kg) | Total Lead (mg/kg) |
|-----------|--------------------|------------|---------------------------------|----------------|-----------------------|
| BAC-PS-18 | White | Wood | Videograph Building Interior | 5.0 | <5.0 |
| BAC-PS-19 | White | Metal Door | Videograph Building Interior | 5.0 | <5.0 |

Notes:

RDL: Reportable detection limit

<X: Non Detect

HPA: Hazardous Products Act



Bold and shaded results indicate that lead concentration is above the relevant Federal HPA criterion of 90 mg/kg

Shaded results indicate that lead concentration is above the former Federal HPA criterion of 5000 mg/kg

Table C5-3: Paint Sample Descriptions and Mercury Analytical Results

| Sample ID | Colour Description | Substrate | Sample Location (Room No.) | RDL (mg/kg) | Total Mercury (mg/kg) |
|-----------|--------------------|------------|---------------------------------|----------------|--------------------------|
| BAC-PS-18 | White | Wood | Videograph Building Interior | 1.0 | <1.0 |
| BAC-PS-19 | White | Metal Door | Videograph Building Interior | 1.0 | <1.0 |

Notes:

RDL: Reportable detection limit

<X: Non Detect

HPA: Hazardous Products Act

Bolded, italicized and underlined results indicate that mercury concentration is above the Federal HPA criterion of 10 mg/kg

**Bolded, and shaded results indicate that mercury concentration is above the Canadian Council of Ministers of the Environment
Canadian Soil Quality Guidelines for mercury in soil at a commercial site (24 mg/kg)**

