

SPECIFICATION

REMOVAL OF VARIOUS SURPLUS INFRASTRUCTURE
AT BELLE ISLE NORTH LIGHT STATION

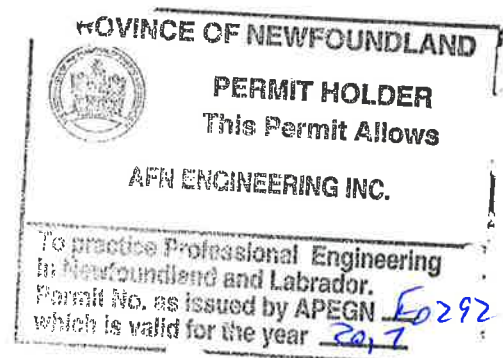
BELLE ISLE, NL
PROJECT NUMBER: F6879-171007

PREPARED FOR

Fisheries and Oceans Canada

DATE

June 24, 2017
Revision 1



LIST OF DRAWINGS

Page 1

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

DRAWING NO

TITLE

02M1401A018C01	Site Plan
02M1401A018C02	Plans - Double Dwelling
02M1401A018C03	Plan - Double Dwelling
02M1401A018C04	Elevations - Double Dwelling
02M1401A018C05	Plan - Equipment Building
02M1401A018C06	Plan - Generator Building
02M1401A018C07	Plan - Lower Landing Boathouse
02M1401A018C08	Plan - Winch House
02M1401A018C09	Plan - Single Dwelling

LIST OF CONTENTS

Section 00 01 11

Page 1

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station

P/N: F6879-171007

2017-06-24

<u>Section</u>	<u>Title</u>	<u>Pages</u>
01 10 10	GENERAL INSTRUCTIONS	12
01 33 00	SUBMITTAL PROCEDURES	5
01 35 24	SPECIAL PROCEDURES ON FIRE SAFETY REQUIREMENTS	6
01 35 29	HEALTH AND SAFETY REQUIREMENTS	13
01 35 43	ENVIRONMENTAL PROCEDURES	5
01 50 00	TEMPORARY FACILITIES	1
01 56 00	TEMPORARY BARRIERS AND ENCLOSURES	1
01 74 11	CLEANING	1
01 78 00	CLOSEOUT SUBMITTALS	1
02 41 16	SITWORK, DEMOLITION AND REMOVAL	3
15 49 10	ENVIRONMENTAL REMEDIATION	4

Appendix A: Hazardous Buildings Material Survey

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

1.1 SCOPE

- .1 The work consists of the furnishing of all plant, labour, equipment and material for demolition and removal of various infrastructure and hazardous materials at the Belle Isle North Light station, NL, in strict accordance with specifications and accompanying drawings and subject to all terms and conditions of the Contract.
- .2 DFO will schedule a mandatory site visit during the tender period. The site visit will occur over a one day period with helicopter flights leaving from the St. Anthony area to the Site (flight will return to St. Anthony - Contractor responsible for all costs associated with getting from home base to St. Anthony). Departmental Representative will pay for helicopter services associated with the one day site visit held during the tender period. Contractors wishing to visit site shall contact the Departmental Representative to obtain flight times/schedule. A maximum of 1 person per Contractor will be permitted and time allocated on site will be a maximum of 2 hours.
- .3 Under this contract, all material that cannot be burned on site is to be packaged into UN approved 1.6 cubic yard waste bags and will remain on site. The bags are to be placed in one (1) central location, to be determined by the Departmental Representative. Further details to be provided at the pre-tender site visit. Waste bags to be manufactured from heavy duty coated woven material with double wall corrugated inserts and a 6 mil polyethylene liner such that the bag can be self-standing. Waste bag to be rated for 1,134kg. Waste bag to be equipped with 6 mil heavy duty clear outdoor cover.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

- .4 Under this contract, DFO will provide helicopter services for Contractor mobilization and demobilization activities. The services will only be provided between the work site and a designated location near the St. Anthony airport. Mobilization is limited to four (4) return trips between the designated location and the work site. Similarly, demobilization is limited to four (4) return trips between the designated location and the work site. The maximum number of personnel to be accommodated during mobilization and demobilization activities is five (5). The maximum amount of weight during slinging operations for mobilizing/demobilizing equipment and materials is 1,200 pounds. During all mobilization activities DFO will not be held responsible for any lost or damaged equipment and materials. Contractor responsible to fully secure and contain all materials/equipment/fuels/etc. If in the opinion of the Departmental Representative (or the coast guard pilot), the materials are not properly secured and contained, the chopper will not provide the services to the Contractor. Note that chopper services are variable due to inclement weather and other coast guard operations and in this regard downtime is to be expected (there will be no additional contract costs if chopper services are unavailable when requested by the Contractor to mobilize/demobilize).

1.2 DESCRIPTION OF WORK

- .1 In general, work under this contract consists of, but will not necessarily be limited to, the following:

- .1 Demolition, removal and disposal

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

of the single and double dwellings. Note that the concrete foundation, including above grade concrete foundation walls associated with the dwellings can remain. Contractor to be prepared to core 150mm diameter core holes in the cistern of the dwelling to prevent future water ponding. For Bidding, assume that 12 core holes through 200mm thick reinforced concrete will be required. The Departmental Representative will provide direction related to the core holes (including specific locations), while in the field. Reference 1.1.3 as it relates to the demolition waste.

.2 Demolition, removal and disposal of the equipment building, generator building, winch house, hoist and lower landing boathouse, as noted on the drawings. Reference 1.1.3 as it relates to the demolition waste.

.3 For all concrete foundations to remain, remove flaking/peeling paint down to the bare concrete and dispose of paint chips as hazardous lead waste. This includes exterior foundation walls, interior floor slabs and basement slabs. Reference 1.1.3 as it relates to the demolition waste.

.4 Removal and packaging (in UN approved waste bags) of all furniture, equipment, loose materials and debris on both the inside and outside of the building infrastructure, including materials scattered around the site.

Do not proceed with any portion of the demolition work until the Departmental Representative has approved the Contractor's

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

written demolition work plan.

1.3 SITE OF WORK

- .1 Work will be carried out at Belle Isle North, NL. The Site is a remote site, only accessible by boat or helicopter. Note that there may be no safe landing areas for a boat at this site.

1.4 DATUM

- .1 Datum used for this project is Lowest Normal Tides (LNT). If requested by the Contractor, the Departmental Representative will establish a benchmark prior to the start of deconstruction activities.
- .2 Bidders are advised to consult the Tide Tables issued by Fisheries and Oceans in order to make sure of the tidal conditions affecting work.

1.5 FAMILIARIZATION
WITH SITE

- .1 Before submitting a bid, it is required that bidders visit the site and its surroundings to review and verify the form, nature and extent of the work, materials needed for the completion of the work, the means of access to the site, severity, exposure and uncertainty of weather, soil conditions, any accommodations they may require, and in general shall obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid or costs to do the work. No allowance shall be made subsequently in this connection on account of error or negligence to properly observe and determine the conditions that will apply.
- .2 Contractors, bidders or those they invite to site are to review specification Section 01 35 29 - Health and Safety Requirements before visiting site. Take all appropriate safety measures for any

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

visit to site, either before or after
acceptance of bid.

- .3 Obtain prior permission from the
Departmental Representative before
carrying out such site inspection.

1.6 CODES AND
STANDARDS

- .1 Perform work in accordance with the latest
edition of the National Building Code of
Canada, and any other code of provincial
or local application including all
amendments up to project bid closing date
provided that in any case of conflict or
discrepancy, the more stringent
requirements shall apply.
- .2 Materials and workmanship must meet or
exceed requirements of specified
standards, codes and referenced documents.

1.7 TERM ENGINEER

- .1 Unless specifically stated otherwise, the
term Engineer where used in the
Specifications and on the Drawings shall
mean the Departmental Representative.

1.8 SETTING OUT
WORK

- .1 Set grades and layout work in detail from
control points and grades established by
Departmental Representative.
- .2 Assume full responsibility for and execute
complete layout of work to locations,
lines and elevations indicated or as
directed by Departmental Representative.
- .3 Provide devices needed to layout and
construct work.
- .4 Supply such devices required to facilitate
Departmental Representative's inspection
of work.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

- .5 Supply stakes and other survey markers required for laying out work.

1.9 COST BREAKDOWN

- .1 Before submitting first progress claim submit breakdown of Contract price in detail as directed by Departmental Representative and aggregating contract price.
- .2 Provide cost breakdown in same format as the numerical and subject title system used in this specification project manual and thereafter sub-divided into major work components as directed by Departmental Representative.
- .3 Upon approval by Departmental Representative, cost breakdown will be used as basis for progress payment.
- .4 This will be a lump sum project. Individual work items will not be measured separately for payment.

1.10 WORK SCHEDULE

- .1 Submit within 7 work days of notification of acceptance of bid, a construction schedule showing commencement and completion of all work within the time stated on the Bid and Acceptance Form and the date stated in the bid acceptance letter.
- .2 Provide sufficient details in schedule to clearly illustrate entire implementation plan, depicting efficient coordination of tasks and resources, to achieve completion of work on time and permit effective monitoring of work progress in relation to established milestones.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

- .3 As a minimum, work schedule to be prepared and submitted in the form of Bar (GANTT) Charts, indicating work activities, tasks and other project elements, their anticipated durations and planned dates for achieving key activities and major project milestones provided in sufficient details and supported by narratives to demonstrate a reasonable plan for completion of project within designated time. Generally Bar Charts derived from commercially available computerized project management system are preferred but not mandatory.
- .4 Submit schedule updates on a minimum bi-weekly basis and more often, when requested by Departmental Representative, due to frequent changing project conditions. Provide a narrative explanation of necessary changes and schedule revisions at each update.
- .5 The schedule, including all updates, shall be to Departmental Representative's approval. Take necessary measures to complete work within approved time. Do not change schedule without Departmental Representative's approval.
- .6 All work on the project will be completed within the time indicated on the Bid and Acceptance Form.

1.11 ABBREVIATIONS

- .1 Following abbreviations of standard specifications have been used in this specification and on the drawings:

CGSB - Canadian Government Specifications Board

CSA - Canadian Standards Association

NLGA - National Lumber Grades Authority

ASTM - American Society for Testing and

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

Materials

- .2 Where these abbreviations and standards are used in this project, latest edition in effect on date of bid call will be considered applicable.
- 1.12 SITE OPERATIONS
- .1 Arrange for sufficient space adjacent to project site for conduct of operations, storage of materials and so on. Exercise care so as not to obstruct or damage public or private property in area. All arrangements for space and access will be made by Contractor.
- 1.13 PROJECT MEETINGS
- .1 Departmental Representative will arrange project meetings and assume responsibility for setting times and recording minutes.
 - .2 Project meetings will take place on site of work unless so directed by the Departmental Representative.
 - .3 Departmental Representative will assume responsibility for recording minutes of meetings and forwarding copies to all parties present at the meetings.
 - .4 Have a responsible member of firm present at all project meetings.
- 1.14 PROTECTION
- .1 Store all materials and equipment to be incorporated into work to prevent damage by any means.
 - .2 Repair or replace all materials damaged in transit or storage to the satisfaction of Departmental Representative and at no cost to Canada.
- 1.15 EXISTING
- .1 Where work involves breaking into or

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

SERVICES

connecting to existing services, carry out work at times directed by governing authorities, with minimum of disturbance to site operations, and tenant operations.

- .2 Before commencing work, establish location and extent of service lines in area of work and notify Departmental Representative of findings.
- .3 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility.
- .4 Provide temporary services when directed by Departmental Representative to maintain critical facility systems.
- .5 Provide adequate bridging over trenches which cross walkways or roads to permit normal traffic.
- .6 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .7 When inactive services are encountered, cap off in manner approved by authorities having jurisdiction over service. Record locations of maintained, re-routed and abandoned service lines.

1.16 DOCUMENTS
REQUIRED

- .1 Maintain at job site, one copy each of the following:
 - .1 Contract Drawings
 - .2 Specifications
 - .3 Addenda
 - .4 Contract and any resulting amendments signed by contracting authority.
 - .5 Test Reports

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

- .6 Copy of Approved Work Schedule
- .7 Site specific Health and Safety Plan and other safety related documents

1.17 PERMITS

- .1 Obtain and pay for all permits, certificates and licenses as required by Municipal, Provincial, Federal and other Authorities.
- .2 Provide appropriate notifications of project to municipal and provincial inspection authorities.
- .3 Obtain compliance certificates as prescribed by legislative and regulatory provisions of municipal, provincial and federal authorities as applicable to the performance of work.
- .4 Submit to Departmental Representative, copy of application submissions and approval documents received for above referenced authorities.
- .5 Comply with all requirements, recommendations and advice by all regulatory authorities unless otherwise agreed in writing by Departmental Representative. Make requests for such deviations to these requirements sufficiently in advance of related work.

1.18 CUTTING,
FITTING AND
PATCHING

- .1 Execute cutting, including excavation, fitting and patching required to make work fit properly.

1.19 ACCEPTANCE

- .1 Prior to the issuance of the Certificate of Substantial Performance, in company with Departmental Representative, make a check of all work. Correct all

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

discrepancies before final inspection and acceptance.

1.20 WORKS
COORDINATION

- .1 Responsible for coordinating the work of the various trades, where the work of such trades interfaces with each other.
- .2 Convene meetings between trades whose work interfaces and ensure that they are fully aware of the areas and the extent of where interfacing is required. Provide each trade with the plans and specifications of the interfacing trade, as required, to assist them in planning and carrying out their respective work.
- .3 Canada will not be responsible for or held accountable for any extra costs incurred as a result of the failure to carry out coordination work. Disputes between the various trades as a result of their not being informed of the areas and extent of interface work shall be the sole responsibility of the General Contractor and shall be resolved at no extra cost to Canada.

1.21 CONTRACTOR'S
USE OF SITE

- .1 Responsible for arranging the storage of materials on or off site, and any materials stored at the site which interfere with any of the day to day activities at or near the site will be moved promptly at the Contractor's expense, upon request by Departmental Representative.
- .2 Exercise care so as not to obstruct or damage public or private property in the area.
- .3 At completion of work, restore area to its

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

original condition. Damage to ground and property will be repaired by Contractor. Remove all construction materials, residue, excess, etc., and leave site in a condition acceptable to Departmental Representative.

- .4 Provide secure laydown area, as required, to accommodate temporary storage of hazardous materials pending removal from Island.

1.22 WORK
COMMENCEMENT

- .1 Mobilization to project site is to commence immediately after acceptance of bid and submission of Site Specific Safety Plan and insurance and bonding documentation, unless otherwise agreed by Departmental Representative.
- .2 Project work on site is to commence as soon as possible, with a continuous reasonable work force, unless otherwise agreed by Departmental Representative.
- .3 Weather conditions, short construction season, delivery challenges and the location of the work site may require the use of longer working days and additional work force to complete the project within the specified completion time.
- .4 Make every effort to ensure that sufficient material and equipment is delivered to site at the earliest possible date after acceptance of bid and replenished as required.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station

P/N: F6879-171007

2017-06-24

PART 1 - GENERAL

1.1 SECTION

INCLUDES

- .1 Product data.
- .2 Samples.
- .3 Certificates.

1.2 SUBMITTAL

GENERAL REQUIREMENTS

- .1 Submit to Departmental Representative for review submittals listed, including samples, certificates and other data, as specified in other sections of the Specifications. Note that any and all changes to the contract will have to be approved in writing by the Contracting Authority.
- .2 Submit with reasonable promptness and in orderly sequence so as to allow for Departmental Representative's review and not cause delay in Work. Failure to submit in ample time will not be considered sufficient reason for an extension of Contract time and no claim for extension by reason of such default will be allowed.
- .3 Do not proceed with work until relevant submissions are reviewed by Departmental Representative.
- .4 Present product data, samples and mock-ups in SI Metric units.
- .5 Where items or information is not produced in SI Metric units, provide soft converted values.
- .6 Review submittals prior to submission to Departmental Representative. Ensure during review that necessary requirements have been determined and verified, required field

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

measurements or data have been taken, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents.

.1 Submittals not stamped, signed, dated and identified as to specific project will be returned unexamined by Departmental Representative and considered rejected.

.7 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.8 Verify field measurements and affected adjacent work and coordinate.

.9 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.

.10 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative's review.

.11 Submittal format: paper originals, or alternatively clear and fully legible photocopies of originals. Facsimiles are not acceptable, except in special circumstances pre-approved by Departmental Representative. Poorly printed non-legible photocopies or facsimiles will not be accepted and be returned for resubmission.

.12 Make changes or revision to submissions which Departmental Representative may require, consistent with Contract Documents and resubmit as directed by Departmental Representative. When resubmitting, notify Departmental Representative in writing of any

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station

P/N: F6879-171007

2017-06-24

revisions other than those requested.

- .13 Keep one reviewed copy of each submittal document on site for duration of Work.

1.3 PRODUCT DATA

- .1 Product data includes drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Submit sufficient copies of product data which are required by the General Contractor and sub-contractors plus 2 copies which will be retained by Departmental Representative. Ensure sufficient numbers are submitted to enable one complete set to be included in each of the maintenance manuals specified, if applicable.
- .3 Allow 10 calendar days for Departmental Representative's review of each submission.
- .4 Adjustments or corrections made on product data by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, advise Departmental Representative in writing prior to proceeding with Work.
- .5 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections and comments are made, fabrication and installation may proceed upon receipt of shop drawings. If product data are rejected and noted to be Resubmitted, do not proceed with that portion of work until resubmission and review of corrected product data, through same submission procedures indicated above.
- .6 Accompany each submission with transmittal

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

- letter, containing:
- .1 Date.
 - .2 Project title and project number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each product data and sample.
 - .5 Other pertinent data.
- .7 Submissions shall include:
- .1 Date and revision dates.
 - .2 Project title and project number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Cross references to particular details of contract drawings and specifications section number for which product data submission addresses.
 - .6 Details of appropriate portions of Work.
- .8 After Departmental Representative's review, distribute copies.
- .9 The review of product data by the Departmental Representative or their delegated representative is for sole purpose of ascertaining conformance with general concept. This review shall not mean that the Departmental Representative approves the detail design inherent in the product data, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in product data or of responsibility for meeting all requirements of the construction and Contract Documents. Without restricting generality of foregoing, Contractor is

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of all sub-trades.

1.4 SCHEDULES,
PERMITS AND
CERTIFICATES

- .1 Upon acceptance of bid, submit to Departmental Representative copy of Work Schedule and various other schedules, permits, certification documents and project management plans as specified in other sections of the Specifications.
- .2 Submit copy of permits, notices, compliance Certificates received by Regulatory Agencies having jurisdiction and as applicable to the Work.
- .3 Submission of above documents to be in accordance with Submittal General Requirements procedures specified in this section.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

1.1 SECTION
INCLUDES

- .1 Fire Safety Requirements.
- .2 Hot Work Permit.

1.2 RELATED WORK

- .1 Section 01 35 29 - Health and Safety Requirements.

1.3 REFERENCES

- .1 Fire Protection Standards issued by Fire Protection Services of Human Resources Development Canada as follows:
 - .1 National Fire Code - Standard for Construction Operations - latest edition (http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/301/page00.shtml).
 - .2 National Fire Code - Standard for Welding and Cutting - latest edition (http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/302/page00.shtml).
 - .3 FCC standards, may also be viewed at the Regional Labour Canada Office located at Baine Johnson Centre, 10 Fort William Place, St. John's, NL, A1C 1K4; Telephone 1-800-641-4049; fax 1-709-772-5985.

1.4 DEFINITIONS

- .1 Hot Work defined as:
 - .1 Welding work.
 - .2 Cutting of materials by use of torch or other open flame devices.
 - .3 Grinding with equipment which produces sparks.

1.5 SUBMITTALS

- .1 Submit copy of Hot Work Procedures and sample

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

of Hot Work permit to Departmental Representative for review, within five (5) calendar days after notification of acceptance of bid.

- .2 Submit in accordance with the Submittal General Requirements specified in Section 01 33 00.

1.6 FIRE SAFETY
REQUIREMENTS

- .1 Implement and follow fire safety measures during Work. Comply with following:
 - .1 National Fire Code, latest edition.
 - .2 Fire Protection Standards FCC 301 and FCC 302 - latest edition.
 - .3 Federal and Provincial Occupational Health and Safety Acts and Regulations as specified in Section 01 35 29 - Health and Safety Requirements.
- .2 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, Departmental Representative will advise on the course of action to be followed.

1.7 HOT WORK
AUTHORIZATION

- .1 Obtain Departmental Representative's written "Authorization to Proceed" before conducting any form of Hot work on site.
- .2 To obtain authorization submit to Departmental Representative:
 - .1 Contractor's typewritten Hot Work Procedures to be followed on site as specified below.
 - .2 Description of the type and frequency of Hot Work required.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

- .3 Sample Hot Work Permit to be used.
- .3 Upon review and confirmation that effective fire safety measures will be implemented during performance of hot work, Departmental Representative will provide authorization to proceed as follows:
 - .1 Issue one written "Authorization to Proceed" covering the entire project for duration of work or;
 - .2 Separate work, or segregate certain parts of work, into individual entities. Each entity requiring a separately written "Authorization to Proceed" from Departmental Representative. Follow Departmental Representative's directives in this regard.
- .4 Requirement for individual authorization based on:
 - .1 Nature or phasing of work;
 - .2 Risk to Facility operations;
 - .3 Quantity of various trades needing to perform hot work on project or;
 - .4 Other situation deemed necessary by Departmental Representative to ensure fire safety on premises.
- .5 Do not perform any Hot Work until receipt of Departmental Representative's written "Authorization to Proceed" for that portion of work.

1.8 HOT WORK
PROCEDURES

- .1 Develop and implement safety procedures and work practices to be followed during the performance of Hot Work.
- .2 Procedures to include:
 - .1 Requirement to perform hazard assessment of site and immediate hot work area for each hot work event in accordance with

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

Hazard Assessment and Safety Plan
requirements of Section 01 35 29.

.2 Use of a Hot Work Permit system for each
hot work event.

.3 The step by step process of how to
prepare and issue permit.

.4 Permit shall be issued by Contractor's
site Superintendent, or other authorized
person designated by Contractor, granting
permission to worker or subcontractor to
proceed with hot work.

.5 Provision of a designated person to
carryout a Fire Safety Watch for a minimum
of 60 minutes immediately upon completion of
the hot work.

.6 Compliance with fire safety codes and
standards specified herein and occupational
health and safety regulations specified in
Section 01 35 29.

.3 Generic procedures, if used, must be edited
and supplemented with pertinent information
tailored to reflect specific project
conditions. Clearly label as being the Hot
Work Procedures applicable to this contract.

.4 Hot Work Procedures shall clearly establish
worker instructions and allocate
responsibilities of:

.1 Worker(s),

.2 Authorized person issuing the Hot Work
Permit,

.3 Fire Safety Watcher,

.4 Subcontractors and Contractor.

.5 Brief all workers and subcontractors on Hot
Work Procedures and Permit system established
for project. Stringently enforce compliance.

.1 Failure to comply with the established
procedures may result in the issuance of a
Non-Compliance Notification at Departmental
Representative's discretion with possible

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

disciplinary measures imposed as specified
in Section 01 35 29.

1.9 HOT WORK
PERMIT

- .1 Hot Work Permit to include, as a minimum, the following data:
 - .1 Project name and project number.
 - .2 Building name, address and specific room or area where hot work will be performed.
 - .3 Date when permit issued.
 - .4 Description of hot work type to be performed.
 - .5 Special precautions required, including type of fire extinguisher needed.
 - .6 Name and signature of person authorized to issue the permit.
 - .7 Name of worker (clearly printed) to which the permit is being issued.
 - .8 Time Duration that permit is valid (not to exceed 8 hours). Indicate start time and date, and completion time and date.
 - .9 Worker signature with date and time upon hot work termination.
 - .10 Specified time period requiring safety watch.
 - .11 Name and signature of designated Fire Safety Watcher, complete with time and date when safety watch terminated, certifying that surrounding area was under continual surveillance and inspection during the full watch time period specified in Permit and commenced immediately upon completion of Hot Work.
- .2 Permit to be typewritten form. Industry Standard forms shall only be used if all data specified above is included on form.
- .3 Each Hot Work Permit to be completed in full and signed as follows:
 - .1 Authorized person issuing Permit before

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

hot work commences.

.2 Worker upon completion of Hot Work.

.3 Fire Safety Watcher upon termination of
safety watch.

.4 Returned to Contractor's Site
Superintendent for safe keeping.

1.10 DOCUMENTS
ON SITE

.1 Keep Hot Work Permits and Hazard assessment
documentation on site for duration of Work.

.2 Upon request, make available to Departmental
Representative or to authorized safety
representative for inspection.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

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- 1.1 RELATED WORK .1 Section 01 35 24 - Special Procedures on Fire Safety Requirements.
- 1.2 DEFINITIONS .1 COSH: Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.
- .2 Competent Person: means a person who is:
- .1 Qualified by virtue of personal knowledge, training and experience to perform assigned work in a manner that will ensure the health and safety of persons in the workplace, and;
 - .2 Knowledgeable about the provisions of occupational health and safety statutes and regulations that apply to the Work and;
 - .3 Knowledgeable about potential or actual danger to health or safety associated with the Work.
- .3 Medical Aid Injury: any minor injury for which medical treatment was provided and the cost of which is covered by Workers' Compensation Board of the province in which the injury was incurred.
- .4 PPE: personal protective equipment.
- .5 Work Site: where used in this section shall mean areas, located at the premises where Work is undertaken, used by Contractor to perform all of the activities associated with the performance of the Work.
- 1.3 SUBMITTALS .1 Make submittals in accordance with Section 01 33 00.
- .2 Submit to Departmental Representative,

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

copies of the following documents
including updates.

- .1 Site specific Health and Safety Plan.
 - .2 Building permit, compliance certification and other permits obtained.
 - .3 Reports or directives issued by Federal and Provincial Inspectors and other Authorities having jurisdiction.
 - .4 Accident or incident reports.
 - .5 WHMIS - MSDS data sheets.
 - .6 Name of Contractor's Representative designated to perform health and safety supervision in site.
 - .7 Certificate of clearance from Workplace Health Safety and Compensation Commission (Assessment Services Department) of Newfoundland and Labrador.
-
- .3 Submit within five (5) work days of notification of Bid Acceptance. Provide one (1) copy.
 - .4 Departmental Representative will review Health and Safety Plan and provide comments.
 - .5 The Contractor will revise the Plan as appropriate and resubmit within five (5) work days after receipt of comments.
 - .6 Departmental Representative's review and comments made of the Plan shall not be construed as an endorsement, approval or implied warranty of any kind by Canada and does not reduce Contractor's overall responsibility for Occupational Health and Safety of the Work.
 - .7 Submit revisions and updates made to the Plan during the course of Work.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

1.4 COMPLIANCE
REQUIREMENTS

- .1 Comply with the Occupational Health and Safety Act for the Province of Newfoundland and Labrador, and the Occupational Health and Safety Regulations made pursuant to the Act.
- .2 Comply with Canada Labour Code Part II, (entitled Occupational Health and Safety) and the Canada Occupational Health and Safety Regulations (COSH) as well as any other regulations made pursuant to the Act.
 - .1 The Canada Labour Code can be viewed at:
[www.http://laws.justice.gc.ca/en/L-2/](http://laws.justice.gc.ca/en/L-2/)
 - .2 COSH can be viewed at:
[www.http://laws.justice.gc.ca/eng/SOR-86-304/ne.html](http://laws.justice.gc.ca/eng/SOR-86-304/ne.html).
 - .3 A copy may be obtained at: Canadian Government Publishing Public Works & Government Services Canada Ottawa, Ontario, K1A 0S9 Tel: (819) 956-4800 (1-800-635-7943) Publication No. L31-85/2000 E or F).
- .3 Observe construction safety measures of:
 - .1 Part 8 of National Building Code.
 - .2 Municipal by-laws and ordinances.
- .4 In case of conflict or discrepancy between any specified requirements, the more stringent shall apply.
- .6 Maintain Workers Compensation Coverage in good standing for duration of Contract. Provide proof through submission of Certificate of Clearance from Workplace Health, Safety and Compensation Commission (Assessment Services Department) of Newfoundland and Labrador.
- .7 Obtain and maintain worker medical

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

surveillance documentation where
prescribed by legislation or regulation.

- 1.5 RESPONSIBILITY
- .1 Be responsible for health and safety of persons on site, safety of property and for protection of persons and environment adjacent to the site to extent that they may be affected by conduct of Work.
 - .2 Comply with and enforce compliance by all workers, sub-contractors and other persons granted access to work site with safety requirements of Contract Documents, applicable Federal, Provincial, and local by-laws, regulations, and ordinances, and with site specific Health and Safety Plan.
- 1.6 SITE CONTROL AND ACCESS
- .1 Control the Work and entry points to Work Site. Approve and grant access only to workers and authorized persons. Immediately stop and remove non-authorized persons.
 - .1 Departmental Representative will provide names of those persons authorized by Departmental Representative to enter onto Work Site and will ensure that such authorized persons have the required knowledge and training on Health and Safety pertinent to their reason for being at the site, however, Contractor remains responsible for the health and safety of authorized persons while at the Work Site.
 - .2 Isolate Work Site from other areas of the premises by use of appropriate means.
 - .1 Erect fences, hoarding, barricades and temporary lighting as required to effectively delineate the Work Site, stop non-authorized entry, and to

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

protect pedestrians and vehicular traffic around and adjacent to the Work and create a safe environment.
.2 Post signage at entry points and other strategic locations indicating restricted access and conditions for access.

.3 Use professionally made signs with bilingual message in the 2 official languages or international known graphic symbols.

.3 Provide safety orientation session to persons granted access to Work Site. Advise of hazards and safety rules to be observed while on site.

.4 Ensure persons granted site access wear appropriate PPE. Supply PPE to inspection authorities who require access to conduct tests or perform inspections.

.5 Secure Work Site against entry when inactive or unoccupied and to protect persons against harm. Provide security guard where adequate protection cannot be achieved by other means.

1.7 PROTECTION

.1 Give precedence to safety and health of persons and protection of environment over cost and schedule considerations for Work.

.2 Should unforeseen or peculiar safety related hazard or condition become evident during performance of Work, immediately take measures to rectify situation and prevent damage or harm. Advise Departmental Representative verbally and in writing.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

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- 1.8 FILING OF NOTICE .1 File Notice of Project with pertinent provincial health and safety authorities prior to beginning of Work.
- 1.9 PERMITS .1 Post permits, licenses and compliance certificates, specified in section 01 10 10, at Work Site.
.2 Where a particular permit or compliance certificate cannot be obtained, notify Departmental Representative in writing and obtain approval to proceed before carrying out applicable portion of work.
- 1.10 HAZARD ASSESSMENTS .1 Perform site specific health and safety hazard assessment of the Work and its site.
.2 Carryout initial assessment prior to commencement of Work with further assessments as needed during progress of work, including when new trades and subcontractors arrive on site.
.3 Record results and address in Health and Safety Plan.
.4 Keep documentation on site for entire duration of the Work.
- 1.11 PROJECT/SITE CONDITIONS .1 The following are known or potential project related safety hazards at site:
.1 Working in close proximity of water.
.2 Remote site location.
.3 Wet and slippery conditions.
.4 Inclement weather conditions.
.5 Tidal influences.
.6 Potential structural weakness of

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

existing structures.
.7 Heavy lifting.
.8 Bird droppings.
.9 Mould.
.10 Working at heights.
.11 Cutting tools and other
construction power tools.
.12 Hazardous materials.
.13 Sharp objects (construction
debris).
.14 Steep terrain/cliffs/risk of
falling.
.15 Use of boats/vessels.
.16 Helicopter usage.

- .2 Above items shall not be construed as being complete and inclusive of potential health, and safety hazards encountered during work.
- .3 Include above items into hazard assessment process.
- .4 Review the Hazardous Building Material Survey in Appendix A of this specification.

1.12 MEETINGS

- .1 Contractor to hold pre-construction health and safety meeting prior to commencement of Work. Ensure attendance of:
 - .1 Superintendent of Work.
 - .2 Contractor's designated Health & Safety Site Representative.
 - .3 Subcontractor's Health and Safety Site Representative.
 - .4 Health and Safety Site Coordinator.
- .2 Conduct regularly scheduled tool box and safety meetings during the Work in conformance with Occupational Health and Safety regulations.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

.3 Keep documents on site.

1.13 HEALTH AND
SAFETY PLAN

.1 Prior to commencement of Work, develop written Health and Safety Plan specific to the work. Implement, maintain, and enforce Plan for entire duration of Work and until final demobilization from site.

.2 Health and Safety Plan shall include the following components:

.1 List of health risks and safety hazards identified by hazard assessment.

.2 Control measures used to mitigate risks and hazards identified.

.3 On-site Contingency and Emergency Response Plan as specified below.

.4 On-site Communication Plan as specified below.

.5 Name of Contractor's designated Health & Safety Site Representative and information showing proof of his/her competence and reporting relationship in Contractor's company.

.6 Names, competence and reporting relationship of other supervisory personnel used in the Work for occupational health and safety purposes.

.3 On-site Contingency and Emergency Response Plan shall include:

.1 Operational procedures, evacuation measures and communication process to be implemented in the event of an emergency.

.2 Evacuation Plan: site and floor plan layouts showing escape routes, marshaling areas. Details on alarm notification methods, fire drills, location of fire fighting equipment and

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

- other related data.
- .3 Name, duties and responsibilities of persons designated as Emergency Warden(s) and deputies.
- .4 Emergency Contacts: name and telephone number of officials from:
 - .1 General Contractor and subcontractors.
 - .2 Pertinent Federal and Provincial Departments and Authorities having jurisdiction.
 - .3 Local emergency resource organizations.
- .4 On-site Communication Plan:
 - .1 Procedures for sharing of work related safety information to workers and subcontractors, including emergency and evacuation measures.
- .5 Address all activities of the Work including those of subcontractors.
- .6 Review Health and Safety Plan regularly during the Work. Update as conditions warrant to address emerging risks and hazards, such as whenever new trade or subcontractor arrive at Work Site.
- .7 Departmental Representative will respond in writing, where deficiencies or concerns are noted and may request re-submission of the Plan with correction of deficiencies or concerns.
- .8 Post copy of the Plan, and updates, prominently on Work Site.

1.14 SAFETY
SUPERVISION

- .1 Employ Health & Safety Site Representative responsible for daily supervision of health and safety of the Work.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

.2 Health & Safety Site Representative may be the Superintendent of the Work or other person designated by Contractor and shall be assigned the responsibility and authority to:

- .1 Implement, monitor and enforce daily compliance with health and safety requirements of the Work
- .2 Monitor and enforce Contractor's site-specific Health and Safety Plan.
- .3 Conduct site safety orientation session to persons granted access to Work Site.
- .4 Ensure that persons allowed site access are knowledgeable and trained in health and safety pertinent to their activities at the site or are escorted by a competent person while on the Work Site.
- .5 Stop the Work as deemed necessary for reasons of health and safety.

.3 Health & Safety Site Representative must:

- .1 Be qualified and competent person in occupational health and safety.
- .2 Have site-related working experience specific to activities of the Work.
- .3 Be on Work Site at all times during execution of the Work.
- .4 All supervisory personnel assigned to the Work shall also be competent persons.
- .5 Inspections:
 - .1 Conduct regularly scheduled safety inspections of the Work on a minimum daily basis. Record deficiencies and remedial action taken.
 - .2 Conduct Formal Inspections on a minimum monthly basis. Use standardized safety inspection forms. Distribute to subcontractors.
 - .3 Follow-up and ensure corrective

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

measures are taken.

- .6 Keep inspection reports and supervision related documentation on site.

1.15 TRAINING

- .1 Use only skilled workers on Work Site who are effectively trained in occupational health and safety procedures and practices pertinent to their assigned task.
- .2 Maintain employee records and evidence of training received. Make data available to Departmental Representative upon request.
- .3 When unforeseen or peculiar safety-related hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.
- .4 All workers dealing with hazardous materials are required to provide evidence of training, in accordance with Provincial regulations.

1.16 MINIMUM
SITE SAFETY RULES

- .1 Notwithstanding requirement to abide by federal and provincial health and safety regulations; ensure the following minimum safety rules are obeyed by persons granted access to Work Site:
 - .1 Wear appropriate PPE pertinent to the Work or assigned task; minimum being hard hat, safety footwear, safety glasses safety vest and hearing protection.
 - .2 Immediately report unsafe condition at site, near-miss accident, injury and

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

damage.

.3 Maintain site and storage areas in a tidy condition free of hazards causing injury.

.4 Obey warning signs and safety tags.

.2 Brief persons of disciplinary protocols to be taken for non compliance. Post rules on site.

1.17 CORRECTION OF
NON-COMPLIANCE

.1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.

.2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Departmental Representative will stop Work if non-compliance of health and safety regulations is not corrected in a timely manner.

1.18 INCIDENT
REPORTING

.1 Investigate and report the following incidents to Departmental Representative:

.1 Incidents requiring notification to Provincial Department of Occupational Safety and Health, Workers Compensation Board or to other regulatory Agency.

.2 Medical aid injuries.

.3 Property damage in excess of \$10,000.00.

.2 Submit report in writing.

1.19 HAZARDOUS
PRODUCTS

.1 Comply with requirements of Workplace Hazardous Materials Information System

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

WHMIS).

- .2 Keep MSDS data sheets for all products delivered to site.
 - .1 Post on site.
 - .2 Submit copy to Departmental Representative.

1.20 SITE RECORDS

- .1 Maintain on Work Site copy of safety related documentation and reports stipulated to be produced in compliance with Acts and Regulations of authorities having jurisdiction and of those documents specified herein.
- .2 Upon request, make available to Departmental Representative or authorized Safety Officer for inspection.

1.21 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on Work Site in accordance with Acts and Regulations of Province having jurisdiction.
- .2 Post other documents as specified herein, including:
 - .1 Site specific Health and Safety Plan.
 - .2 WHMIS data sheets.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station

P/N: F6879-171007

2017-06-24

1.1 RELATED WORK .1 Section 02 41 16 - Sitework, Demolition and Removal.

1.2 DEFINITIONS .1 Hazardous Material: Product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released into the environment.

1.3 FIRES .1 Burning will be permitted in the cistern only of the double dwelling.

.2 Fires for the purpose of burning non-hazardous waste on site are permitted (see part 1.3.3 for only permitted burn location). The following materials are not permitted to be burned on site and must be removed for off-site disposal to an approved waste site: (a) tires; (b) plastics; (c) treated lumber; (d) asphalt and asphalt products; (e) drywall; (f) demolition waste; (g) hazardous waste; (h) biomedical waste; (i) domestic waste; (j) trash, garbage, or other waste from commercial, industrial or municipal operations; (k) manure; (l) rubber; (m) tar paper; (n) railway ties; (o) paint and paint products; (p) fuel and lubricant containers; (q) used oil; (r) animal cadavers; (s) hazardous substances; and (t) materials disposed of as part of the removal or decontamination of equipment, buildings or other structures.

Note that the burn must be in accordance with the Provincial Air Pollution Control Regulations, 2004, under the Environmental Protection Act (O.C. 2004-232). Obtaining burn permits, if required by the Provincial Authorities, will be the responsibility of the Contractor.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

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- .2 Notify the municipality of the scheduled burn, and obtain (and pay for) all required municipal permits.
 - .3 The only permitted burn location is the footprint area of the double dwelling. Coordinate exact location with the Departmental Representative.
 - .4 Submit a detailed work plan for the Departmental Representative's review with respect to any burns that are planned. The plan is to include as a minimum:
 - Sufficient fire fighting equipment on-site to control the fire during the burn and to extinguish the fire when the burn is complete.
 - The fire is to take place within daylight hours between 2 hours after sunrise to 2 hours before sunset.
 - Names of supervisors/watchers to attend the burn. The fire must be extinguished before the supervisor of the burn leaves the site.
 - At no time should the fire be ignited under windy conditions. Should windy conditions occur during the burn, it is to be extinguished and covered with fill.
 - At no time should the fire be ignited when the prevailing winds will carry smoke/odours towards occupied residences.
-
- 1.4 DISPOSAL OF
WASTES AND
HAZARDOUS
MATERIALS
- .1 Do not bury rubbish and waste materials on site.
 - .2 Do not dispose of hazardous waste or volatile materials, such as mineral spirits, paints, thinners, oil or fuel into waterways, storm or sanitary sewers or waste landfill sites.
 - .3 Store, handle and dispose of hazardous materials and hazardous waste in accordance with applicable federal and provincial laws,

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station

P/N: F6879-171007

2017-06-24

regulations, codes and guidelines.

- .4 Reference Specification Section 01 10 10 part 1.1.3 as it relates to the demolition waste.

1.5 DRAINAGE

- .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
- .2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with governing regulations and requirements.
- .4 Pumped water must meet applicable federal, provincial, and municipal standards before it can be discharged to a surface water body. If regulatory guidelines exceedences are noted, the Departmental Representative has the right to issue stop pumping instructions to the Contractor. Contractor will not be compensated for any delays associated with retrofitting equipment to meet guidelines.

1.6 PERMITS

- .1 All guidelines and instructions stated on permits must be strictly adhered to.

1.7 WORK ADJACENT TO WATERWAYS

- .1 Do not operate construction equipment in waterways.
- .2 Do not use waterway beds for borrow material.
- .3 Do not dump excavated fill, waste material or debris in waterways.
- .4 At borrow sites, design and construct temporary crossings to minimize erosion to

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

waterways in strict conformance with provincial and federal environmental regulations.

- .5 Do not skid logs or construction materials across waterways.
- .6 Ensure refueling of any type of equipment does not, either directly or indirectly, create pollution by causing or permitting any leaks or spills.
- .7 Maintain equipment in good working condition with no fluid leaks, loose hoses or fittings.

1.8 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment and plant to local authorities emission requirements.
- .3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.
- .4 Have emergency spill response equipment and rapid clean-up kit, appropriate to work, at site. Locate adjacent to work and where hazardous materials are stored. Provide personal protective equipment as required for clean-up.
- .5 Report, to Federal and Provincial Department of the Environment, spills of petroleum and other hazardous materials as well as accidents having potential of polluting the environment. Also notify Departmental Representative and submit a written spill report to Departmental Representative within 24 hours of occurrence.

1.9 WILDLIFE PROTECTION

- .1 Should sea bird nests be encountered during work, immediately notify Departmental

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station

P/N: F6879-171007

2017-06-24

Representative for directives to be followed.

.1 Do not disturb nest site and
neighbouring vegetation until nesting is
completed.

.2 Minimize work immediately adjacent to
such areas until nesting is completed.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

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- | | | |
|--|----|---|
| <u>1.1 SANITARY FACILITIES</u> | .1 | Provide sanitary facilities for work force in accordance with governing regulations and ordinances. |
| | .2 | Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition. |
| <u>1.2 WATER SUPPLY</u> | .1 | Arrange, pay for and maintain temporary water supply in accordance with governing regulations and ordinances. |
| <u>1.3 SCAFFOLDING</u> | .1 | Design, construct and maintain scaffolding in rigid, secure and safe manner in accordance with CSA797-09. |
| | .2 | Erect scaffolding independent of walls. Remove when no longer required. |
| <u>1.4 CONSTRUCTION SIGN AND NOTICES</u> | .1 | Contractor or subcontractor advertisement signboards are not permitted on site. |
| | .2 | Only notices of safety or instructions are permitted on site. |
| | .3 | Safety and Instruction Signs and Notices:
.1 Signs and notices for safety and instruction shall be in both official languages. |
| | .4 | Maintenance and Disposal of Site Signs:
.1 Maintain approved signs and notices in good condition for duration of project and dispose of off site on completion of project or earlier if directed by Departmental Representative. |
| <u>1.5 REMOVAL OF TEMPORARY FACILITIES</u> | .1 | Remove temporary facilities from site when directed by Departmental Representative. |

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

PART 1 - GENERAL

1.1 SECTION
INCLUDES

.1 Barriers.

1.2 INSTALLATION
AND REMOVAL

.1 Provide temporary controls in order to
execute work expeditiously.

.2 Remove from site all such work after use.

1.3 HOARDING

.1 Erect temporary site enclosure if required
by governing authorities, using new 1.2 m
high snow fence wired to rolled steel "T" bar
fence posts spaced at 2.4 m centres. Provide
one lockable truck gate. Maintain fence in
good repair.

1.4 GUARD RAILS
AND BARRICADES

.1 Provide secure, rigid guard rails and
barricades around open excavations and as
required to protect against falls. Note
steep cliffs around work area and construct
barricades where work is expected in these
areas.

.2 Provide as required by governing authorities.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

PART 1 - GENERAL

- 1.1 GENERAL
- .1 Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
 - .2 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
 - .3 Prevent accumulation of wastes which create hazardous conditions.
 - .4 Provide adequate ventilation during use of volatile or noxious substances.
- 1.2 CLEANING DURING CONSTRUCTION
- .1 Maintain project grounds and public properties in a tidy condition, free from accumulations of waste material and debris. Clean areas on a daily basis.
 - .2 Provide on-site garbage containers for collection of waste materials and debris.
 - .3 Remove waste materials and debris from site on a daily basis.
- 1.3 FINAL CLEANING
- .1 In preparation for acceptance of the Work perform final cleaning. The expectation for final cleaning will be a rake cleaning, removing all debris, wood chips, nails, paint chips, etc.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station

P/N: F6879-171007

2017-06-24

1.1 SECTION
INCLUDES

- .1 Project Record Documents as follows:
 - .1 Inventory of all materials demolished and stored on site in UN approved waste bags.

1.2 PROJECT RECORD
DOCUMENTS

- .1 Departmental Representative will provide two white print sets of contract drawings and two copies of Specifications.
- .2 Maintain at site one set of the contract drawings and specifications to record actual "As-Built" site conditions.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

PART 1 - GENERAL

1.1 DESCRIPTION

- .1 This section specifies requirements for demolishing and removing wholly or in part various items designated to be removed or partially removed.
- .2 Demolition and removal will consist of, but not necessarily be limited to, the following:
 - .1 Demolition, removal and disposal of the single and double double dwellings. Note that the concrete foundation, including above grade concrete foundation walls associated with the dwellings can remain. Contractor to be prepared to core 150mm diameter core holes in the cistern of the dwelling to prevent future water ponding. For Bidding, assume that 12 core holes through 200mm thick reinforced concrete will be required. The Departmental Representative will provide direction related to the core holes (including specific locations), while in the field.
 - .2 Demolition, removal and disposal of the equipment building, generator building, winch house, hoist and lower landing boathouse, as noted on the drawings. Reference Specification Section 01 10 10 part 1.1.3 as it relates to the demolition waste.
 - .3 For all concrete foundations to remain, remove flaking/peeling paint down to the bare concrete and dispose of paint chips as hazardous lead waste. This includes exterior foundation walls, interior floor slabs and basement slabs. Reference Specification Section 01 10 10 part 1.1.3 as it relates to the demolition waste.
 - .4 All materials present on the

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

interior of the buildings are to be removed and packaged in UN waste bags - refer to pictures in appended environmental report showing typical materials inside the buildings.

Refer to Section 15 49 10 for specific requirements related to demolition and removal of hazardous building materials. Reference Specification Section 01 10 10 part 1.1.3 as it relates to the demolition waste.

PART 2 - PRODUCTS

NOT APPLICABLE

PART 3 - EXECUTION

3.1 EXECUTION

- .1 Inspect site and verify with Departmental Representative objects designated for removal.
- .2 Locate and protect utility lines. Preserve in operating condition active utilities traversing site.

3.2 REMOVAL

- .1 Remove in their entirety all materials and objects specified for removal.
- .2 Do not disturb adjacent work designated to remain in place.

3.3 DISPOSAL OF MATERIAL

- .1 All demolished materials will remain on site and be placed in UN approved waste bags.

3.4 RESTORATION

- .1 Upon completion of work, remove debris, trim surfaces and leave work site in clean

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

condition.

- .2 Reinstate areas and existing works outside areas of demolition to conditions that existed prior to commencement of work.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

PART 1 - GENERAL

1.1 SCOPE

- .1 This specification identifies the hazardous materials that are present in the infrastructure to be removed, and the measures required for handling and packaging of the materials. Removal and storage (in UN approved waste bags) of the hazardous building materials are the sole responsibility of the Contractor.
- .2 A Hazardous Buildings Materials Assessment for the Site is appended to these specifications.

1.2 GENERAL

- .1 Refer to the hazardous material sampling report (appended to the specifications), for quantities of known or suspected hazardous building materials. For the purposes of this contract, the following hazardous materials are to be removed as part of the demolition activities:
 - Drywall including joint compound on the interior walls and ceilings contains asbestos. Roofing shingles, underlying tar material, mastic material at roofing penetrations, heat shields on furnaces/stoves, and vinyl flooring on the interior is also to be considered asbestos. Contractors to provide evidence that they are registered with Service NL as an asbestos abatement contractor.
 - Leachable lead based paint is present on all interior and exterior surfaces. Leachable lead based paint is considered hazardous for the purposes of transportation and disposal. With respect to the exterior wood siding, the paint and substrate (i.e. siding with the paint adhered to it), is to be considered hazardous lead waste. With respect to concrete foundations and floor slabs which

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

- are to remain, the paint is to be removed from the concrete surfaces.
- All thermostats and fluorescent light tubes potentially contain mercury and are to be placed in UN approved waste bags separately from other waste material, for future recycling or disposed at an approved facility by the Owner.
 - Fluorescent light ballasts are to be placed in steel containers or UN supplied waste bags separately from other waste material and marked as PCBs.
 - Mould is present throughout the interior surfaces of the infrastructure. Workers to don PPE when working on the building interior.
 - Water pipes potentially contain lead solder and are to be stored separately from other waste material in UN approved waste bags for future disposal at a metal recycling facility by the Owner.
 - Residential type refrigerators and freezers are to be broken down into a size suitable for storage in UN approved waste bags, and are to be kept separate from other waste.
 - Fire extinguishers are to be placed in UN approved waste bags separately from other waste for future disposal as household hazardous waste by the Owner.
 - Small amounts of ash in the chimney to be drummed up separately from other waste for future disposal at one of the Regional Solid Waste Disposal sites, by the Owner.
 - Smoke alarms potentially containing radioactive materials, are to be placed in UN approved waste bags, separate from other waste.
 - All treated timber (creosote and CCA timber) which cannot be burned is to be placed in UN approved waste bags for future disposal as hazardous waste, by the Owner.
 - Metal waste and other debris, including but not limited to electrical and mechanical equipment, pressure vessels, cables, pipes,

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

tractors, tires, wood, yellow bags, green sacks (contents unknown) and abandoned aboveground storage tanks (ASTs) are scattered at various locations throughout the Site. Several yellow bags (contents unknown) and a 45-gallon metal drum is also present inside the generator building. Take inventory of these materials at the pre-tender site visit and carry costs to package all materials in UN approved waste bags for future disposal by the Owner.

1.3 PROTECTIVE
EQUIPMENT/PROCEDURES

- .1 Protective equipment and clothing to be worn by workers and visitors in work area include as a minimum:

.1 Respirator - NIOSH approved and equipped with replaceable P100 HEPA filter cartridges, acceptable to NL Labour Relations and NL OSHA. Respirator must be suitable for the type and level of lead dust and mould spore exposure in the work area. Provide sufficient filters so workers can install new filters following disposal of used filters and before re-entering contaminated areas. Workers must not have facial hair that affects the seal between the respirator and face.

.2 Gloves and eye protection.

.3 Disposable protective clothing that does not readily retain or permit skin contamination, consisting of full body covering including head covering with snug fitting cuffs at wrists, ankles, and neck.

.4 Remove gross contamination from clothing before leaving work area. Place contaminated work suits in receptacles for disposal with other lead/mould contaminated materials. Upon completion of lead/mould abatement, dispose of footwear as contaminated waste or clean thoroughly inside and out using soap and water before removing from work area.

Removal of Various Surplus Infrastructure
at the Belle Isle North Light station
P/N: F6879-171007

2017-06-24

.5 Eating, drinking, chewing and smoking must not be permitted in the work area. Workers must wash hands and face when leaving the work area.

.6 Workers must be trained in hazards of lead/mercury and mould exposure, personal hygiene, work procedures and the proper use of respirators. Provide proof to Departmental Representative prior to work.

1.4 SUBMITTALS

- .1 Submit proof satisfactory to Departmental Representative that all employees have had instruction on all hazardous material exposure, respirator use, dress, entry and exit from work areas, and all aspects of work procedures and protective measures.
- .2 Submit proof satisfactory to the Departmental Representative that all employees have respirator fitting and testing. Workers must be fit tested (irritant smoke test) with the respirator that is personally issued.
- .3 Submit Workplace Health, Safety and Compensation Commission status and transcription of insurance.
- .4 Use procedures and equipment required to limit occupational and environmental exposure to lead when lead- containing paint is removed.

1.5 INSURANCE

- .1 Provide proof of Contractor's General and Environmental Liability Insurance, specific to cover the hazardous materials known to exist on this site.

Appendix A: Hazardous Buildings Material Survey



-FINAL-

**HAZARDOUS BUILDING MATERIALS SURVEY
BELLE ISLE NORTH LIGHTSTATION
BELLE ISLE, NEWFOUNDLAND AND LABRADOR**

Submitted to:
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Environmental Services**
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March 2013

AMEC Project No. TF12076460

IMPORTANT NOTICE

This report was prepared exclusively for Public Works and Government Services Canada (PWGSC), Fisheries and Oceans Canada (DFO) and the Canadian Coast Guard (CCG) by AMEC Environment & Infrastructure, a Division of AMEC Americas Limited (AMEC). The quality of information, conclusions and estimates contained herein is consistent with the level of effort involved in AMEC's services and based on: i) information available at the time of preparation, ii) data supplied by outside sources and iii) the assumptions, conditions and qualifications set forth in this report. This report is for use by PWGSC and DFO only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

EXECUTIVE SUMMARY

AMEC Environment & Infrastructure, a division of AMEC Americas Limited (AMEC), was retained by Public Works and Government Services Canada (PWGSC), on behalf of the Canadian Coast Guard (CCG) and Fisheries and Oceans Canada (DFO), to conduct a Hazardous Building Materials Survey (HBMS) for the Belle Isle North Lightstation located on Belle Isle, Newfoundland and Labrador (NL), herein referred to as the "Site". The HBMS was requested to provide PWGSC and DFO/CCG with an evaluation of known and potential hazardous building materials at the Site buildings.

The Site is a DFO Lightstation located on the northern end of Belle Isle, off the coast of the Northern Peninsula of Newfoundland. The Site is accessible by boat or helicopter. The Site is currently used as an active Lightstation with an automated light and fog horn. The Site is not staffed by DFO/CCG on a fulltime basis; DFO/CCG employees visit the site on a regular basis for inspections and maintenance. The main area of the Site currently contains a light tower, duplex dwelling, storage shed (i.e. storage shed #1), single dwelling, generator building, equipment building, videograph building and a helicopter landing pad. The lower landing area of the Site contains a winch house and a storage shed (i.e. storage shed #2). Structures no longer on the Site include a former light tower, a former small storage shed, a former fog horn building and former aboveground storage tanks (ASTs).

The objective of the HBMS was to identify the type and location of potential and confirmed hazardous building materials within the Site buildings. The scope of work included:

- Conducting a walk-through inspection of the Site buildings to identify the potential and/or actual presence of hazardous building materials.
- Inspecting the Site buildings for evidence of areas that are impacted by suspected visible mould growth (SVG). If suspected mould is present, sampling and laboratory testing of the suspected mould growth to confirm the presence of mould.
- Sampling and laboratory testing of suspected asbestos-containing materials (ACMs) to confirm the presence or absence of asbestos fibres.
- Sampling and laboratory testing of paint to determine the concentrations of lead, mercury and polychlorinated biphenyls (PCBs).
- Inspecting all thermostats to assess the presence/absence of mercury-containing switches.
- Inspecting all accessible fluorescent lights (if present) for PCB-containing light ballasts.
- Preparing a written report documenting the methodologies and findings of the HBMS.

Conclusions and recommendations made with respect to the potential and actual presence of hazardous building materials at the Site are summarized in Table E-1.



Table E-1: Summary of Findings

Findings	Conclusions	Recommendations
<p>Asbestos-Containing Materials (ACMs)</p>	<ul style="list-style-type: none"> • Results of the asbestos sampling and analytical program revealed that there are building materials containing greater than 1% asbestos by dry weight, which are considered to be ACMs: <ul style="list-style-type: none"> - Potentially friable asbestos is present in the form of drywall joint compound and/or plaster. - Non-friable asbestos is present in the form of vinyl floor tiles, caulking and mortar. - It should be noted that the drywall and associated joint compound visible throughout the Site buildings varied in condition from good to poor and the mortar in the kitchen of the single dwelling was in poor condition; therefore, priority should be given to the removal of the deteriorated joint compound/plaster and mortar inside these areas of the Site buildings. • Results of the asbestos sampling and analytical program also revealed that there are building materials containing less than 1% asbestos by dry weight: <ul style="list-style-type: none"> - Drywall plaster, asphalt shingles, caulking, grout and countertop mastic. • 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 and mechanical components and insulators such as wiring and gaskets inside electrical panels, electronic and/or mechanical equipment. • Other possible hidden and inaccessible ACMs have the potential to be present at the Site but were not identified during the Site visits. These possible ACMs could include interior components of furnaces and/or stoves, fire rated structures or building materials, and underground infrastructure and piping. 	<ul style="list-style-type: none"> • 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. • 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: <ul style="list-style-type: none"> - Safe work procedures shall be established; - 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; and, - Prior to general disturbance activity (e.g., demolition, renovation or removal), all ACMs must be safely removed from the Site buildings and disposed of in accordance with appropriate environmental guidelines by an asbestos abatement contractor registered with the Department of Labour, Occupational Health and Safety Branch. • ACMs in good condition should be inspected on an annual basis. ACMs in poor condition should be removed from the Site buildings and transported off-site for proper disposal in accordance with the Asbestos Abatement Regulations (111/98).



Findings	Conclusions	Recommendations
<p>Lead, Mercury and PCBs in Paint</p>	<ul style="list-style-type: none"> • Results of the paint sampling and analytical program revealed lead and mercury-based paint finishes within the Site buildings (i.e., the concentrations of lead and mercury in some paint finishes were above the applicable Federal Hazardous Products Act [HPA] criteria of 90 mg/kg for lead and 10 mg/kg for mercury). <ul style="list-style-type: none"> - The concentrations of lead in the paint samples ranged from 45 mg/kg to 49,000 mg/kg. - The concentrations of mercury in the paint samples ranged from non-detect (<1.0 mg/kg) to 120 mg/kg. - Nineteen (19) paint samples plus three (3) field duplicate samples contained lead at concentrations above the former Federal HPA criterion of 5,000 mg/kg. - Eighteen (18) paint samples plus two (2) field duplicate samples contained mercury at concentrations above or equal to the CCME CSQG of 24 mg/kg for mercury in soil at a commercial site. 	<ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> - Based on the results from the paint samples analyzed during this assessment, 63 of the 77 paint finishes that were sampled for lead and mercury in paint are not considered hazardous waste and can be disposed of at an approved landfill facility, pending regulatory and landfill operator approval. - The concentrations of leachable lead in 14 paint samples were above the Schedule II leachate criterion for lead (5.00 mg/L) provided in the provincial guidance document for leachable toxic waste (GD-PPD-26.1). Since the concentrations of leachable lead in these paint samples are at levels considered to be hazardous, these paints, if removed from the Site, must be disposed of at a hazardous waste treatment facility. The paint collected at the Site was generally in poor condition and flaking; therefore, if any paint exceeding the lead leachate criterion is deteriorated (i.e. peeling and flaking) then in order to help prevent impacts to the environment, priority should be given to the removal of these deteriorated areas. • If potential lead or mercury containing paint finishes that were not sampled during this assessment are encountered, 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. • There are potential adverse human health impacts associated with disturbing (e.g., scraping) lead and mercury-based paint finishes. As a precautionary measure, AMEC recommends proper maintenance of lead and mercury-based paint finishes, as follows:



Findings	Conclusions	Recommendations
<p>Lead, Mercury and PCBs in Paint</p>	<ul style="list-style-type: none"> All of the paint samples analyzed for PCBs were non-detect (<5.0 mg/kg) and therefore did not exceed the CCME CSQG of 33 mg/kg for PCBs in soil at a commercial site or the criterion for PCB solid (50 mg/kg) provided in the provincial guidance document for leachable toxic waste (GD-PPD-26.1). 	<ul style="list-style-type: none"> Where lead and mercury-based paint finishes are in good condition (i.e., intact and not peeling or flaking) the surfaces can be covered by painting with non lead or non mercury-containing paint. In areas of minor peeling or flaking the paint should be removed using wet scraping techniques and the surface should then be repainted with non lead or non mercury-containing paint. 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 or mercury-based paint finishes are present and in poor condition, an experienced contractor should be utilized for painting, renovation or decommissioning/demolition activities. Steps should be taken 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.
<p>Urea formaldehyde foam insulation (UFFI)</p>	<ul style="list-style-type: none"> Visual indicators suggesting the potential presence of UFFI were not observed at the Site. The nature of the insulation in the walls and ceilings throughout the Site buildings could not be confirmed at the time of the Site inspections. However, fiberglass insulation was observed in various rooms throughout the single dwelling and in room #1 of the equipment building. Since the original Belle Isle Lightstation was established in 1905, the Site buildings may have been constructed within that time period or later. Therefore, it is possible that UFFI may be present in some areas of the Site buildings. 	<ul style="list-style-type: none"> Based on a visual nonintrusive inspection, there was no evidence that UFFI is present in these structures. However, the inferred age of some of the Site buildings suggests that UFFI could be present within the walls which could not be visually inspected. Based on the sources of information reviewed by AMEC to assess whether UFFI is considered to be a potential environmental concern at the Site (refer to Sections 3.3 and 4.3), it can be inferred that any UFFI present within the Site buildings 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. prior to 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.



Findings	Conclusions	Recommendations
<p>Mould</p>	<ul style="list-style-type: none"> • Areas of SVG were observed in several areas on the interior of the duplex, single dwelling, equipment building and generator building. • Results of the mould sampling program revealed that moderate to abundant mould growth was present in the samples collected from the interior of the duplex and single dwellings. • Existing conditions in the Site buildings (e.g. improper ventilation, inadequate building heating, prolonged periods of increased moisture) may potentially contribute to or enhance mould growth inside the Site buildings. 	<ul style="list-style-type: none"> • Based on the estimated areas of mould impacted materials observed at the Site and the intended future use of the Site buildings, the interior areas of the duplex, single dwelling, equipment building and generator building should be remediated using Level 3 abatement procedures (i.e. more than 10 m²), as outlined in the 2010 Environmental Abatement Council of Ontario (EACO) Mould Abatement Guidelines. • It should be noted that asbestos may be present in drywall joint compound in areas where mould is present on drywall and must be considered during any abatement of these areas.
<p>Lead and Mercury-Containing Equipment</p>	<ul style="list-style-type: none"> • Mercury-containing thermostats were observed in the duplex and single dwellings and suspected mercury-containing fluorescent light tubes were observed in the equipment building and generator building. • Mercury may also be present in the high intensity discharge (HID) lights at the top of the light tower. • Samples of the drinking water at the Site buildings were not collected or analyzed during this assessment for the presence of lead. • Since the original lightstation was established at the Site in the 1900s, the Site buildings included in this assessment may have been constructed within that time period or later; therefore, lead in drinking water may be a potential issue since the lead content in solders and fluxes was not limited to 0.2% in potable water systems until 1990 (National Plumbing Code of Canada). • Several potential lead-acid batteries (i.e., solar batteries) were noted inside the videograph building at the time of the Site inspections. 	<ul style="list-style-type: none"> • Mercury-containing fluorescent light tubes or HID bulbs should be removed intact and returned to the manufacturer for recycling, or disposed of at an approved facility. • The disturbance, control or disposal of lead-containing material/equipment (e.g., solder on copper piping, batteries, etc.) or mercury-containing material/equipment (e.g., thermostats, light tubes and bulbs) should be carried out in accordance with applicable criteria/regulations (refer to Section 2.0). The presence/absence of lead or mercury in these materials should be confirmed through a mechanical contractor or consultant prior to disturbance or disposal of these materials. Typically these materials are sent to a recycling facility and not a landfill. • The Health Canada Guidelines for Canadian Drinking Water Quality includes maximum acceptable concentrations of various chemical parameters in drinking water, including lead. If lead solder is present in the potable water systems, lead concentrations in drinking water can typically be reduced to acceptable levels by running the cold water tap for five to ten minutes prior to use. It is important to note that at the time of the Site investigation it was not known if potable water was supplied to the Site.



Findings	Conclusions	Recommendations
PCB-Containing Equipment	<ul style="list-style-type: none"> Five (5) fluorescent light fixtures were observed in the equipment building and two (2) were observed in the generator building. The light ballasts in the two (2) light fixtures at the generator building and in two (2) of the five (5) light fixtures at the equipment building could not be inspected for the presence or absence of PCB-containing dielectric fluid due to safety concerns (casings were difficult to remove/rusted). It could not be determined from the inspection if the ballasts are either non-PCB or potential-PCB; therefore, these ballasts should be treated as PCB-containing ballasts. 	<ul style="list-style-type: none"> The PCB content in all light ballasts 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. All 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 Site buildings should be transported and disposed of by a registered hazardous waste transporter in accordance with applicable regulations.
Ozone Depleting Substances (ODSs)	<ul style="list-style-type: none"> Potential sources of ODSs identified during this assessment included two (2) refrigerators and a freezer in the single dwelling and a refrigerator in the duplex dwelling. The types of refrigerant(s) were not confirmed for the freezer or refrigerators at the time of this assessment. 	<ul style="list-style-type: none"> All ODSs should be removed by an approved contractor prior to disposing of the freezer or refrigerators from the Site buildings. 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.
Silica Dust	<ul style="list-style-type: none"> Silica is expected to be present in concrete structures, brick and mortar at the Site. 	<ul style="list-style-type: none"> Precaution 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.
Solid Waste	<ul style="list-style-type: none"> Metal waste and other debris, including but not limited to electrical and mechanical equipment, pressure vessels, cables, pipes, tractors, tires, wood, yellow bags, green sacks (contents unknown) and abandoned aboveground storage tanks (ASTs) were observed scattered at various locations throughout the Site. Several yellow bags (contents unknown) and a 45-gallon metal drum were also observed inside the generator building. 	<ul style="list-style-type: none"> The solid waste at the Site should be properly disposed of in accordance with applicable regulations.



TABLE OF CONTENTS

1.0 INTRODUCTION..... 1

1.1 Site Description 1

1.2 Site building descriptions 1

1.3 Objectives and Scope of Work..... 3

2.0 ENVIRONMENTAL REGULATORY FRAMEWORK..... 4

2.1 Selection of Guidelines/Standards 5

2.1.1 Asbestos-Containing Materials..... 5

2.1.2 Lead in Paint 6

2.1.3 Mercury in Paint 6

2.1.4 PCBs in Paint 6

2.1.5 Mould..... 7

3.0 METHODOLOGY..... 7

3.1 Asbestos Sampling and Laboratory Analytical Program 7

3.2 Paint Sampling and Laboratory Analytical Program..... 8

3.3 Inspection for Urea Formaldehyde Foam Insulation (UFFI) 8

3.4 Inspection for Suspected Visible Mould Growth (SVG)..... 9

3.5 Inspection of Thermostats for Mercury-Containing Switches 9

3.6 Inspection of Light Ballasts for PCBs 10

3.7 Documentation of Potential Sources of ODSS 10

3.8 Documentation of Other Potentially Hazardous Building Materials..... 10

3.9 Quality Assurance/Quality Control (QA/QC) Program..... 10

4.0 FINDINGS 11

4.1 Asbestos-Containing Materials (ACMs) 11

4.1.1 Friable Materials..... 12

4.1.1.1 Spray-Applied Fireproofing, Insulation and Texture Finishes..... 12

4.1.2 Non-Friable and Potentially Friable Materials 12

4.1.2.1 Ceiling Tile 12

4.1.2.2 Drywall Joint Compound/Plaster 12

4.1.2.3 Vinyl Flooring Products and Mastics 13

4.1.2.4 Baseboard, Carpet and Stair Tread Adhesives/Mastics 14

4.1.2.5 Roofing Products..... 14

4.1.2.6 Thermal System Insulation..... 14

4.1.2.7 Weather Stripping and Caulking 14

4.1.2.8 Mortar, Grout and Other Cementitious Materials 15

4.1.2.9 Other Potential ACMs 16

4.2 Paint Finishes..... 16

4.2.1 Lead in Paint 17

4.2.2 Leachable Lead in Paint..... 17

4.2.3 Mercury in Paint 18

4.2.4 Leachable Mercury in Paint..... 19

4.2.5 PCBs in Paint 19

4.3 Urea Formaldehyde Foam Insulation (UFFI)..... 19

4.4 Suspected Visible Mould Growth (SVG) 20

4.5 Mercury-Containing Thermostats 20

4.6 PCB-Containing Light Ballasts 20

4.7 Potential Sources of ODSS 21



4.8	Other Potentially Hazardous Building Materials or Products	21
4.8.1	Mercury	21
4.8.2	Lead	21
4.8.3	Silica.....	22
4.8.4	Solid Waste	22
4.9	QA/QC Discussion	22
4.9.1	Surrogate Recoveries.....	22
4.9.2	Laboratory Blank Samples	22
4.9.3	Field Duplicate Samples.....	23
4.9.4	Laboratory Duplicates	23
4.9.5	Summary of QA/QC Discussion	24
5.0	CONCLUSIONS AND RECOMMENDATIONS	24
6.0	CLOSURE.....	29
7.0	REFERENCES.....	31

APPENDICES

- Appendix A: Figures
- Appendix B: Photographic Record
- Appendix C: Sample and Analytical Summary Tables
- Appendix D: Laboratory Certificates of Analyses
- Appendix E: Room-By-Room Inspection Sheets
- Appendix F: Report Limitations

LIST OF TABLES

Table E-1: Summary of Findings	iii
Table 1: Vinyl Floor Tile Descriptions	13
Table 2: Thermostat Descriptions	20
Table 3: Fluorescent Light Ballast Descriptions.....	21
Table 4: Field Duplicate RPDs.....	23
Table 5: Laboratory Duplicate RPDs	23

1.0 INTRODUCTION

AMEC Environment & Infrastructure, a division of AMEC Americas Limited (AMEC), was retained by Public Works and Government Services Canada (PWGSC), on behalf of the Canadian Coast Guard (CCG) and Fisheries and Oceans Canada (DFO), to conduct a Hazardous Building Materials Survey (HBMS) for the Belle Isle North Lightstation located on Belle Isle, Newfoundland and Labrador (NL), herein referred to as the "Site" (refer to Figure 1, Appendix A and Photos 1 and 2, Appendix B). The HBMS was requested to provide PWGSC and DFO with an evaluation of known and potential hazardous building materials at the Site buildings.

1.1 SITE DESCRIPTION

The Site is a DFO Lightstation located on the northern end of Belle Isle, off the coast of the Northern Peninsula of Newfoundland (refer to Figure 1, Appendix A). The Site is accessible by boat or helicopter. The Site is currently used as an active Lightstation with an automated light and fog horn. The Site is not staffed by DFO/CCG on a fulltime basis; DFO/CCG employees visit the site on a regular basis for inspections and maintenance. The main area of the Site currently contains a light tower, duplex dwelling, storage shed (i.e. storage shed #1), single dwelling, generator building, equipment building, videograph building and a helicopter landing pad. The lower landing area of the Site contains a winch house and a storage shed (i.e. storage shed #2) (refer to Figure 2, Appendix A and Photos 1 and 2, Appendix B). Structures no longer on the Site include a former light tower, a former small storage shed, a former fog horn building and former aboveground storage tanks (ASTs).

1.2 SITE BUILDING DESCRIPTIONS

Light Tower

The light tower is a five-storey, concrete frame structure. The exterior of the light tower consists of concrete and wooden framed windows and doors (refer to Photo 1, Appendix B). The roofing materials consist of painted metal panels.

The exterior walls are constructed of concrete. The interior walls and wall finishes consist of painted concrete, painted metal panels, painted wooden door frames and painted wooden trim around windows and doors. The ceilings and ceiling finishes consist of painted metal panels. The floors and floor finishes consist of painted concrete, painted wood boards and painted metal panels.

Interior and exterior lighting consists of incandescent lights. The main lighting system in the light tower appears to consist of high intensity discharge (HID) lights. The light tower is not heated.

Duplex Dwelling

The duplex dwelling is a two-storey, wood frame structure with a poured concrete basement. The exterior of the duplex consists of wooden siding and wooden framed windows and doors (refer to Photo 1, Appendix B). The roofing materials consist of asphalt shingles.

The exterior walls are constructed of wood and concrete. The interior walls and wall finishes consist of wood, painted concrete, painted drywall, plywood and pressed wood, wooden door frames, painted wooden trim around windows and doors and painted wooden baseboards. The ceilings and ceiling finishes consist of painted drywall. The floors and floor finishes consist of painted concrete, hardwood, vinyl floor tile and sheet flooring.

Interior and exterior lighting consists of incandescent lights. The duplex dwelling appears to have been formerly heated by a forced air oil-fired furnace.

Storage Shed #1

Storage shed #1 is a one-storey, wood frame structure. The exterior of the shed consists of wooden panels and a wooden framed window and door (refer to Photo 1, Appendix B). The roofing materials consist of wooden panels. The interior walls and ceiling of the shed are painted wooden panels. The floor consists of painted wood panels. There are no lights and the shed is not heated.

Single Dwelling

The single dwelling is a one-storey, wood frame structure with a poured concrete basement. The exterior of the dwelling consists of wooden siding and wooden framed windows and doors (refer to Photo 1, Appendix B). The roofing materials consist of asphalt shingles.

The exterior walls are constructed of wood and concrete. The interior walls and wall finishes consist of wood, painted concrete, painted drywall, pressed wood, wooden door frames, painted wooden trim around windows and doors and painted wooden baseboards. The ceilings and ceiling finishes consist of painted drywall. The floors and floor finishes consist of painted concrete, hardwood, vinyl floor tile and sheet flooring.

Interior and exterior lighting consists of incandescent lights. The single dwelling appears to have been formerly heated by a forced air oil-fired furnace.

Generator Building

The generator building is a one-storey, metal frame structure with no foundation. The exterior of the generator building consists of pre-fabricated metal panels and a metal framed door (refer to Photo 1, Appendix B). The roofing materials consist of pre-fabricated metal panels. The interior walls and ceiling of the generator building are painted plywood panels. The floor consists of

painted wood-type panels over unfinished wood boards and sheet flooring. Interior lighting consists of fluorescent lights. The generator building is not heated.

Equipment Building

The equipment building is a one-storey, wood frame structure with a poured concrete slab-on-grade foundation. The exterior of the equipment building consists of wooden siding and wooden framed windows and doors (refer to Photo 1, Appendix B). The roofing materials consist of asphalt shingles. The interior walls and ceiling of the equipment building are painted drywall and wood panels. The floor consists of unpainted and painted concrete. Interior lighting consists of fluorescent lights. The equipment building appears to have been formerly heated by wall mounted baseboard heaters.

Videograph Building

The videograph building is a one-storey, wood frame structure with a poured concrete slab-on-grade foundation. The exterior of the videograph building consists of wooden siding and wooden framed windows and doors (refer to Photo 1, Appendix B). The roofing materials consist of asphalt shingles. The interior walls and ceiling of the videograph building are painted plywood. The floor consists of painted concrete. Interior lighting consists of incandescent lights. The videograph building is heated by wall mounted baseboard heaters.

Winch House

The winch house is a one-storey, wood frame structure with a poured concrete slab-on-grade foundation. The exterior of the winch house consists of wooden siding and wooden framed windows and doors (refer to Photo 2, Appendix B). The roofing materials consist of asphalt shingles. The interior walls and ceiling of the winch house are unfinished. The floor consists of painted concrete. There are no lights and the winch house is not heated.

Storage Shed #2

Storage shed #2 is a one-storey, wood frame structure with a loft and a poured concrete slab-on-grade foundation. The exterior of the shed consists of wooden siding and wooden framed windows and doors (refer to Photo 2, Appendix B). The roofing materials consist of asphalt shingles. The interior walls and ceiling of the shed are unfinished. The floor consists of painted concrete. Interior lighting consists of incandescent lights. The storage shed is not heated.

1.3 OBJECTIVES AND SCOPE OF WORK

The objective of the HBMS was to identify the type and location of potential and confirmed hazardous building materials within the Site buildings. The scope of work, as per AMEC Proposal Number P3884 (*Proposal for Professional Consulting Services, Hazardous Building Materials Survey, Seven Remote Light Station Properties, Belle Isle North, NL*), included:

- Conducting a walk-through inspection of the Site buildings to identify the potential and/or actual presence of hazardous building materials including:

- Asbestos-Containing Materials (ACMs)
 - Lead-based paint (LBP);
 - Mercury-based paint (MBP);
 - Polychlorinated Biphenyls (PCB) based paint;
 - Urea formaldehyde foam insulation (UFFI);
 - Sources of ozone depleting substances (ODSs); and
 - Other potentially hazardous building materials.
- Inspecting the Site buildings for evidence of areas that are impacted by suspected visible mould growth (SVG). If suspected mould is present, sampling and laboratory testing of the suspected mould growth to confirm the presence of mould.
 - 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, mercury and PCBs.
 - Inspecting all thermostats to assess the presence/absence of mercury-containing switches.
 - Inspecting all accessible fluorescent lights (if present) for PCB-containing light ballasts.
 - Preparing a written report documenting the methodologies and findings of the HBMS.

The findings of the investigation 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 visits. The interior of half of the duplex was not inspected, as the door was ceased shut. Intrusive cavity inspections to investigate the presence or absence of hazardous buildings materials were not performed.

2.0 ENVIRONMENTAL REGULATORY FRAMEWORK

The federal and provincial governments in Canada have prepared and/or adopted numerous acts (and amendments), regulations (and amendments), guidelines, policies, and procedures related to the protection of the environment and the investigation of sites containing hazardous building materials including the following:

- Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines
 - Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health
- Canadian Environmental Protection Act (1999, C. 33)
 - PCB Waste Export Regulations (SOR/97-109)
 - PCB Regulations (SOR/2008-273)
 - Regulations Amending the PCB Regulations (SOR/2010-57)

- Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301)
- Federal Halocarbon Regulations (SOR/2003-289)
- Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149)
- Federal Hazardous Products Act (R.S., 1985, c. H-3)
 - Surface Coating Materials Regulations (SOR/2005-109)
 - Regulations Amending the Surface Coating Materials Regulations (SOR/2010-224)
- Federal Transportation of Dangerous Goods Act (1992, c. 34)
 - Transportation of Dangerous Goods Regulations (SOR/2012-245)
- Health Canada Guidelines for Canadian Drinking Water Quality (Summary Table, 2012)
- National Plumbing Code of Canada (National Research Council Canada)
- NL Environmental Protection Act (SNL2002 cE-14.2)
 - Storage of PCB Wastes Regulations (61/03)
 - Halocarbon Regulations (41/05)
- NL Dangerous Goods Transportation Act (RSNL1990 Chapter D-1)
 - Dangerous Goods Transportation Regulations (5/96)
- NL Department of Environment, Pollution Prevention Division, Guidance Document: Leachable Toxic Waste, Testing and Disposal (2003, GD-PPD-26.1)
- NL Department of Environment and Conservation, Guidance Document for the Management of Impacted Sites (2005, Version 1.01)
- NL Occupational Health and Safety Act (RSNL1990 Chapter O-3)
 - Occupational Health and Safety Regulations (5/12)
 - Asbestos Abatement Regulations (111/98)

AMEC has considered the above documents in conducting this HBMS.

2.1 SELECTION OF GUIDELINES/STANDARDS

Based on the past and projected future Site use activities, the Site is considered to be zoned commercial.

2.1.1 Asbestos-Containing Materials

Analytical results for asbestos in building materials were compared to the NL Asbestos Abatement Regulations (111/98) under the Occupational Health and Safety Act. Under these regulations, materials containing greater than 1% asbestos by dry weight are considered to be ACMs and should be managed in accordance with the applicable regulations.

2.1.2 Lead in Paint

Analytical results for lead in paint were compared to the current and former Federal Hazardous Products Act (HPA) criteria of 90 mg/kg and 5,000 mg/kg, respectively. Under the Act, the lead content limit was reduced from 5,000 mg/kg to 600 mg/kg in 2005 for surface coating materials used in or around the home or other premises where children may become exposed. In 2010, the lead content limit was further reduced from 600 mg/kg to 90 mg/kg.

In order to determine disposal options, should disposal be required, the former Federal HPA criterion of 5,000 mg/kg lead in paint is typically used as a Provincial disposal guideline to determine whether or not the paint chip samples would be submitted for leachate analysis. Paint chip 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 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, 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 any disturbance, demolition or renovation activities at the Site building.

2.1.3 Mercury in Paint

Analytical results for mercury in paint were compared to the Federal HPA criterion. The maximum acceptable concentration of mercury in paint, under the HPA, is 0.001 percent (equivalent to 10 mg/kg) in or around the home or other premises where children or pregnant women may become exposed.

In order to determine disposal options, should disposal be required, concentrations of mercury in paint were also compared to the CCME Canadian Soil Quality Guidelines (CSQG) for mercury in soil at a commercial site (24 mg/kg). The CCME CSGQ for mercury in soil is typically used as a Provincial disposal guideline to determine whether or not the paint chip samples would be submitted for leachate analysis. Paint samples with 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. Paint samples with a mercury concentration exceeding 24 mg/kg should be subjected to leachability testing. The NL Department of Environment, 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 any disturbance, demolition or renovation activities at the Site buildings.

2.1.4 PCBs in Paint

Analytical results for PCBs in paint were compared to the CCME CSQG of 33 mg/kg for PCBs in soil at a commercial site. The Federal HPA does not include any assessment criteria for PCBs in paint.

In order to determine disposal options, concentrations of PCBs in paint were also compared to the criterion for PCB solid (50 mg/kg) provided in the provincial guidance document for leachable toxic waste (GD-PPD-26.1) and the Federal Transportation of Dangerous Goods Regulations.

2.1.5 Mould

There are currently no regulations specifically covering exposure to mould and/or mould remediation practices in Canada. In addition, there are no occupational exposure limits that define acceptable levels of mould exposure without adverse health effects. However, Sections 4 and 42 of the NL Occupational Health and Safety Act and Regulations, respectively, states that an employer shall ensure, where it is reasonably practicable, the health, safety and welfare of his or her workers and 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. Two Canadian guidelines have recently been published that outline mould abatement. These documents were published by the Canadian Construction Association (CCA) and the Environmental Abatement Council of Ontario (EACO). 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. The guidelines listed below were used to evaluate the visual assessment and sampling results for mould:

- *“Mould Guidelines for the Canadian Construction Industry.”* Canadian Construction Association, 2004.
- *“Mould Abatement Guidelines.”* Environmental Abatement Council of Ontario (EACO), 2010.

3.0 METHODOLOGY

Site inspections and sampling for the investigation were conducted by AMEC personnel on October 20 and November 15, 2012. Room-by-room inspection sheets are presented in Appendix E.

3.1 ASBESTOS SAMPLING AND LABORATORY ANALYTICAL PROGRAM

Building materials suspected of containing asbestos were sampled by removing a 2.0 cm by 2.0 cm piece of material (where possible) and placing the sampled materials into Glad[®] plastic bags. Sample locations of potentially friable ACMs were sealed with duct tape upon completion of sampling (i.e. pipe insulation, etc.).

Bulk building material samples were submitted to the EMSL Analytical, Inc. (EMSL) laboratory located in Mississauga, Ontario for the analysis of asbestos using Polarized Light Microscopy (PLM) with dispersion staining. The analysis was conducted in accordance with the 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.

Findings of the asbestos sampling and analytical program are presented in Section 4.1. Sample locations and analytical results are graphically illustrated in Figures 3 to 10, Appendix A. Sample locations are also shown in Photos 3 to 45, Appendix B and sample descriptions and analytical results are also summarized in Table C-1, Appendix C. Laboratory certificates of analyses are provided in Appendix D.

3.2 PAINT SAMPLING AND LABORATORY ANALYTICAL PROGRAM

Paint samples were collected from painted surfaces by cutting and scraping areas of flaking paint using clean knives and scrapers. Samples were collected down to bare substrate (e.g., drywall, concrete and wood). A minimum of five grams (where possible) of paint was obtained from each sampling location and stored in Glad[®] plastic bags.

Paint samples were submitted to the Maxxam Analytics Inc. (Maxxam) laboratory located in Bedford, Nova Scotia for the analysis of lead, mercury and PCB content. The analysis was conducted in accordance with the EPA 6020A, method analysis for metals using inductively coupled plasma – mass spectrometry (ICP-MS). Based on the findings of the analytical program, 19 paint samples were analyzed for lead leachate and 18 paint samples were analyzed for mercury leachate using the Toxicity Characteristic Leaching Program (TCLP). Maxxam is accredited under the Standards Council of Canada (SCC) to perform analysis of lead and mercury in paint samples.

Findings of the paint sampling and analytical program are presented in Section 4.2. Sample locations and analytical results are graphically illustrated in Figures 3 to 10, Appendix A. Sample locations are also shown in Photos 46 to 122, Appendix B and sample descriptions and analytical results are also summarized in Tables C-2 to C-6, Appendix C. Laboratory certificates of analyses are provided in Appendix D.

3.3 INSPECTION FOR UREA FORMALDEHYDE FOAM INSULATION (UFFI)

According to the USEPA and the US Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR), formaldehyde is a colourless, pungent-smelling gas that is commonly used in some manufactured building materials and household products such as particleboard, medium density fiberboard, fiberglass, plywood, carpets, fabrics, urea-formaldehyde resins, paints, paper, fertilizer, food preservatives, antiseptics, medicines and cosmetics. These agencies also state, that as a by-product of combustion, formaldehyde may also be released to indoor air environments by means of un-vented wood and fuel-burning appliances and tobacco smoke. According to the Canada Mortgage and Housing Corporation (CMHC), new carpets and composite wood products used in the present-day construction of buildings have the potential to increase the levels of formaldehyde in indoor air and are deemed to be the most likely sources of high formaldehyde levels in these newer and well-sealed buildings.

UFFI is a thermal insulation material that is pumped into interstitial spaces between the walls of buildings where it hardens to form a solid layer of insulation. UFFI is comprised of a cured mixture of urea-formaldehyde resin and compressed air. The sale and installation of UFFI was banned for health-related reasons in 1980 because of the formation of formaldehyde gas which is released from the UFFI to the building interior. Findings of the visual inspection for UFFI are presented in Section 4.3.

3.4 INSPECTION FOR SUSPECTED VISIBLE MOULD GROWTH (SVG)

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 focus of the visual inspection included, but was not limited to, searching for visible signs of water staining, water damage, excess moisture, and/or infiltration; and signs of SVG and/or staining. In this report, term SVG refers to a smearable discoloration of surfaces differing from that of the natural substrate with observable fungal characteristics based on our experience evaluating similar building types. Bulk material and tape lift samples were collected from areas of SVG to confirm the presence of mould growth.

Mould samples were collected by either removing a 2.0 cm by 2.0 cm piece of material (where possible) from the area of SVG or in areas where SVG was observed on hard substrates, samples were collected using laboratory supplied Bio-Tape™ slides. The samples were stored in Ziploc™ plastic bags and labelled.

Suspected mould samples were submitted to EMC Scientific (EMC) laboratory located in Mississauga, Ontario for direct microscopic examination of mould to the genus level. EMC is an American Industrial Hygiene Association Environmental Microbiology Proficiency Analytical Testing (AIHA EMPAT) program participant.

Findings of the visual inspection for SVG and the mould sampling and analytical program are presented in Section 4.4. Sample locations and analytical results are graphically illustrated in Figures 3 and 4, Appendix A. Sample locations are also shown in Photos 127 to 132, Appendix B and sample descriptions and analytical results are also summarized in Table C-7, Appendix C. Laboratory certificates of analyses are provided in Appendix D.

3.5 INSPECTION OF THERMOSTATS FOR MERCURY-CONTAINING SWITCHES

Thermostats identified within the Site buildings were visually inspected by removing the casings and checking for the presence of mercury-containing switches. Findings of the thermostat inspection are presented in Section 4.5.

3.6 INSPECTION OF LIGHT BALLASTS FOR PCBs

Light ballasts within accessible fluorescent light fixtures identified within the Site buildings were visually inspected for the presence or absence of PCB-containing dielectric fluid and condition by removing the light tubes and casings in the fixtures. The name of the manufacturer and manufacturer's code were recorded (where possible) and compared to Environment Canada's *Environmental Protection Series Report (EPS 2/CC/2, August 1991)*. The ballasts are classified as either non-PCB or potential-PCB. Findings of the light ballast inspection are presented in Section 4.6.

3.7 DOCUMENTATION OF POTENTIAL SOURCES OF ODSs

Ozone depleting substances (ODSs) include any substances containing chlorofluorocarbon (CFC), hydrochlorofluorocarbon (HCFC), halon or any other material capable of destroying ozone in the atmosphere. ODSs have been used in rigid polyurethane foam and insulation, laminates, aerosols, air conditioners, freezers, chillers, fire extinguishers, cleaning solvents and the sterilization of medical equipment. Federal regulations introduced in 1995 required the elimination of production and import of CFCs by January 1, 1996 (subject to certain essential uses) and a freeze on the production and import of HCFC-22 by January 1, 1996. These regulations also require the complete elimination of HCFC-22 by the year 2020. The NL Halocarbon Regulations (dated May 2005) required the elimination of halon in portable fire extinguishers effective June 1, 2005 and the elimination of halon in fire extinguishing systems by January 1, 2010.

Potential sources of ODSs identified within the Site buildings were documented during the Site investigation and are summarized in Section 4.7 (if present).

3.8 DOCUMENTATION OF OTHER POTENTIALLY HAZARDOUS BUILDING MATERIALS

During the Site inspection, other potentially hazardous building materials were observed and are documented in Section 4.8.

3.9 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PROGRAM

Laboratory blanks and Quality Control (QC) standard samples were analyzed to assess the reliability of the paint analyses. In order to minimize cross contamination during sampling, a field Quality Assurance/Quality Control (QA/QC) program was followed, which included the following measures:

- Latex or nitrile gloves were worn during all sampling (new pair of gloves for each sample);
- All sampling equipment was thoroughly cleaned prior to sampling to ensure that samples were unaffected by cross-contamination from previous samples; and

- 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. 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;
- 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; and,
- A full-time QA Scientist evaluates the QA program on an on-going basis.

4.0 FINDINGS

4.1 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 43 building material samples (BN-ASB-01 to BN-ASB-43) plus four (4) field duplicate samples (BN-ASB-DUP1 to BN-ASB-DUP4) were collected from the Site buildings and analyzed for asbestos content (refer to Photos 3 to 45, Appendix B). Sample descriptions and analytical results are summarized in Table C-1, Appendix C. Sample locations and analytical results are graphically illustrated in Figures 3 to 10, Appendix A.

4.1.1 Friable Materials

4.1.1.1 Spray-Applied Fireproofing, Insulation and Texture Finishes

No spray-applied fireproofing, insulation or texture finishes were observed within the Site buildings during the Site visits; therefore no samples were collected for analysis during this assessment.

4.1.2 Non-Friable and Potentially Friable Materials

4.1.2.1 Ceiling Tile

There were no ceiling tiles observed in the Site buildings during the Site visits. Therefore, no samples of ceiling tile were collected for analysis during this assessment.

4.1.2.2 Drywall Joint Compound/Plaster

Painted drywall was observed on the walls and ceilings in various areas throughout the equipment building, duplex and single dwellings. The following samples of drywall joint compound were collected:

- Five (5) samples of drywall joint compound (BN-ASB-02 to BN-ASB-04, BN-ASB-07 and BN-ASB-09) plus one (1) field duplicate sample (BN-ASB-DUP1, field duplicate of BN-ASB-04) were collected from interior walls of the duplex and analyzed for asbestos content (refer to Photos 4 to 6, 9 and 11, Appendix B).
- One (1) sample of drywall plaster and caulking (BN-ASB-19) and one (1) sample of drywall joint compound and plaster (BN-ASB-26) were collected from interior walls of the single dwelling and analyzed for asbestos content (refer to Photos 21 and 28, Appendix B).
- One (1) sample of drywall joint compound (BN-ASB-31) was collected from an interior wall of the equipment building and analyzed for asbestos content (refer to Photo 33, Appendix B).

Chrysotile asbestos (ranging from 2% to 3%) was detected in samples BN-ASB-03, BN-ASB-04 and BN-ASB-26 at levels above the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., <1%) and therefore these materials (i.e., drywall joint compound collected from the duplex back porch and pantry and drywall joint compound and plaster collected from the single dwelling bedroom #3) are considered to be ACMs. Chrysotile asbestos (0.34%) was detected in sample BN-ASB-19 (i.e. drywall plaster and caulking collected from the single dwelling porch #1) at a level below the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., <1%). Asbestos was not detected in any of the other drywall joint compound and/or plaster samples collected and submitted for analysis.

It should be noted that it is common for the asbestos content in troweled on materials, such as drywall joint compound and plaster within older buildings, to vary in concentration depending on the methods used to mix and place these materials. Due to this variability in asbestos content, the drywall joint compound and plaster throughout the duplex and single dwellings should be treated as an ACM.

The drywall and associated joint compound/plaster visible throughout the Site buildings varied in condition from good to poor.

4.1.2.3 Vinyl Flooring Products and Mastics

Various types of 12" x 12" vinyl floor tiles were observed in the duplex and single dwellings. Black mastic was typically adhered to the underside of the vinyl floor tiles. Three (3) samples of vinyl floor tiles and associated mastic (BN-ASB-08, BN-ASB-21 and BN-ASB-25) were collected from these Site buildings and analyzed for asbestos content (refer to Photos 10, 23 and 27, Appendix B). Descriptions of the vinyl floor tiles and the results of the asbestos analysis are summarized in Table 1.

Table 1: Vinyl Floor Tile Descriptions

Sample ID	Description	Location Observed	Condition	Area (Approx.)	Analytical Result	ACM (Yes/No)
BN-ASB-08	Green with flower print pattern (12" x 12").	Duplex Dwelling Washroom	Good	3 m ²	No asbestos detected	No
BN-ASB-21	Grey with green and white fleck pattern (12" x 12"), black mastic.	Single Dwelling Kitchen	Good	25 m ²	1.3% Chrysotile	Yes
BN-ASB-25	Light green and beige pattern (12" x 12"), black mastic.	Single Dwelling Washroom	Good	4 m ²	No asbestos detected	No

It should be noted that other vinyl floor tiles or flooring materials and associated mastics may be present in other areas of the Site buildings which were not apparent or accessible during the Site visits.

4.1.2.4 Baseboard, Carpet and Stair Tread Adhesives/Mastics

There were no baseboard, carpet or stair tread adhesives/mastics observed in any of the Site buildings during the Site visits. Therefore, no samples of these types of adhesives/mastics were collected for analysis during this assessment.

4.1.2.5 Roofing Products

Five (5) samples of asphalt shingle roofing material (BN-ASB-12, BN-ASB-17, BN-ASB-35, BN-ASB-37 and BN-ASB-43) plus one field duplicate sample (BN-ASB-DUP4, field duplicate of BN-ASB-35) were collected from the roofs of the Site buildings (duplex, single dwelling, storage shed #2, winch house and videograph building) and analyzed for asbestos content (refer to Photos 14, 19, 37, 39 and 45, Appendix B). Chrysotile asbestos (ranging from <0.25% to 0.26%) was detected in samples BN-ASB-17 and BN-ASB-37 (i.e. red asphalt shingles collected from the single dwelling and winch house) at levels below the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., <1%). Asbestos was not detected in the red asphalt shingle samples collected from the duplex dwelling and storage shed #2 (i.e. BN-ASB-12, BN-ASB-35 and BN-ASB-DUP4) or the red/black asphalt shingle samples collected from the videograph building (BN-ASB-43).

4.1.2.6 Thermal System Insulation

One (1) sample of white foam insulation (BN-ASB-38) was collected from around wiring and one (1) sample of beige foam insulation (BN-ASB-39) was collected from the videograph machine on the interior of the videograph building and analyzed for asbestos content (refer to Photos 40 and 41, Appendix B). Asbestos was not detected in the foam insulation samples collected and submitted for analysis.

One (1) sample of grey fibreglass insulation with a foil backing (BN-ASB-11) was collected from the furnace in the duplex basement and analyzed for asbestos content (refer to Photo 13, Appendix B). One (1) sample of pink fibreglass insulation with a paper backing (BN-ASB-20) was collected from the single dwelling living room and one (1) sample of grey fibreglass insulation with a foil backing (BN-ASB-29) was collected from the furnace in the single dwelling basement and analyzed for asbestos content (refer to Photos 22 and 31, Appendix B). One (1) sample of pink fibreglass insulation with a paper backing (BN-ASB-32) was collected from the equipment building room #1 and analyzed for asbestos content (refer to Photo 34, Appendix B). Asbestos was not detected in the insulation samples collected and submitted for analysis.

4.1.2.7 Weather Stripping and Caulking

No samples of weather stripping were collected during this assessment.

One (1) sample of light grey caulking (BN-ASB-13) was collected from around a pipe on the exterior of the duplex dwelling and analyzed for asbestos content (refer to Photo 15, Appendix B). Chrysotile asbestos (0.26%) was detected in sample BN-ASB-13 at a level below the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., <1%).

One (1) sample of dark grey caulking (BN-ASB-16) was collected from a roof gutter on the exterior of the single dwelling and analyzed for asbestos content (refer to Photo 18, Appendix B). Chrysotile asbestos (3.4%) was detected in sample BN-ASB-16 at a level above the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., <1%) and therefore this material (i.e., dark grey caulking) is considered to be an ACM.

One (1) sample of white caulking (BN-ASB-36) was collected from a window on the exterior of storage shed #2 and analyzed for asbestos content (refer to Photo 38, Appendix B). Asbestos was not detected in the caulking sample collected from the storage shed.

Two (2) samples of white and light grey caulking (BN-ASB-41 and BN-ASB-42) were collected from wooden siding on the exterior of the videograph building and analyzed for asbestos content (refer to Photos 43 and 44, Appendix B). Asbestos was not detected in the caulking samples collected from the videograph building.

4.1.2.8 Mortar, Grout and Other Cementitious Materials

Two (2) samples of brick mortar (BN-ASB-10 and BN-ASB-27) and one (1) sample of brick (BN-ASB-28) and were collected from chimneys in the duplex and single dwelling basements and analyzed for asbestos content (refer to Photos 12, 29 and 30, Appendix B). One sample of brick mortar (BN-ASB-30) was also collected from the interior of the light tower and analyzed for asbestos content (refer to Photo 32, Appendix B). Asbestos was not detected in the brick or brick mortar samples collected and submitted for analysis.

One sample of grey mortar (BN-ASB-24) plus one field duplicate sample (BN-ASB-DUP3) were collected from a wall near a pipe from a stove in the single dwelling kitchen and analyzed for asbestos content (refer to Photo 26, Appendix B). Chrysotile asbestos (ranging from 2% to 3%) was detected in samples BN-ASB-24 and BN-ASB-DUP3 at levels above the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., <1%) and therefore this material (i.e., grey mortar) is considered to be an ACM. The mortar collected in the kitchen of the single dwelling was in poor condition.

Two (2) samples of a concrete patching material (BN-ASB-14 and BN-ASB-15) were collected from the exterior of the light tower and analyzed for asbestos content (refer to Photos 16 and 17, Appendix B). Asbestos was not detected in the concrete patching material samples collected and submitted for analysis.

One (1) sample of black grout (BN-ASB-33) was collected from between floor boards on the interior of the generator building and analyzed for asbestos content (refer to Photo 35, Appendix B). Chrysotile asbestos (0.86%) was detected in sample BN-ASB-33 (i.e. black grout) at a level below the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., <1%).

4.1.2.9 Other Potential ACMs

Various types of flooring materials were observed in the duplex, single dwelling and generator building. Four (4) samples of these sheet flooring materials (BN-ASB-01, BN-ASB-05, BN-ASB-23 and BN-ASB-34) were collected from the duplex (front porch and pantry), single dwelling (kitchen) and generator building and analyzed for asbestos content (refer to Photos 3, 7, 25 and 36, Appendix B). One (1) sample of grey wood panel flooring with a mesh backing and grey adhesive (BN-ASB-18) plus one field duplicate sample (BN-ASB-DUP2) were collected from the single dwelling porch #1 and analyzed for asbestos content (refer to Photo 20, Appendix B). Asbestos was not detected in the sheet or panel flooring material samples collected and submitted for analysis.

One (1) sample of a fibreboard (BN-ASB-06) was collected from a wall in the duplex kitchen and analyzed for asbestos content (refer to Photo 8, Appendix B). Asbestos was not detected in the fibreboard sample collected and submitted for analysis.

One (1) sample of a black rubber coating (BN-ASB-40) was collected from the videograph machine in the videograph building and analyzed for asbestos content (refer to Photo 42, Appendix B). Asbestos was not detected in the rubber coating sample collected and submitted for analysis.

One (1) sample of black mastic (BN-ASB-22) was collected from the kitchen countertop in the single dwelling and analyzed for asbestos content (refer to Photo 24, Appendix B). Chrysotile asbestos (<0.25%) was detected in sample BN-ASB-22 (i.e. black mastic) at a level below the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., <1%).

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 and mechanical components and insulators such as wiring and gaskets inside electrical panels, electronic and/or mechanical equipment. Other possible hidden and inaccessible ACMs have the potential to be present at the Site but were not identified during the Site visits. These possible ACMs could include interior components of furnaces and/or stoves, fire rated structures or building materials and underground infrastructure and piping.

4.2 PAINT FINISHES

The paint visible throughout the Site buildings varied in condition from fair to poor. Peeling and flaking paint was observed on the interior and exterior of the Site buildings (refer to Photos 4, 6 111 and 115, Appendix B).

A total of 77 samples (BN-PS-01 to BN-PS-77) plus five (5) field duplicate samples (BN-PS-DUP1 to BN-PS-DUP5) were collected from painted surfaces of the Site buildings and analyzed for lead and mercury content (refer to Photos 46 to 122, Appendix B). Eight (8) paint samples (BN-PS-04, BN-PS-14, BN-PS-21, BN-PS-36, BN-PS-45, BN-PS-51, BN-PS-61 and BN-PS-75) were also analyzed for PCB content. Sample descriptions and analytical results are

summarized in Tables C-2 to C-4, Appendix C. Sample locations and analytical results are graphically illustrated in Figures 3 to 10, Appendix A.

Since the concentrations of lead detected in 19 paint samples (BN-PS-09, BN-PS-13, BN-PS-17, BN-PS-20, BN-PS-28, BN-PS-31, BN-PS-32, BN-PS-36, BN-PS-37, BN-PS-52, BN-PS-55, BN-PS-56, BN-PS-59, BN-PS-66, BN-PS-68 to BN-PS-71, BN-PS-73), plus three (3) field duplicate samples (BN-PS-DUP1, BN-PS-DUP3 and BN-PS-DUP4), exceeded the former Federal HPA criterion of 5,000 mg/kg, these paint samples were also tested for lead leachate using the TCLP to determine whether or not the paint would be considered hazardous waste upon removal from the Site. It should be noted that the concentration of lead detected in paint sample BN-PS-20 was less than the concentration detected in its field duplicate sample BN-PS-DUP1; therefore, the field duplicate sample was submitted for leachate analysis instead of the original paint sample. The laboratory results for lead leachate in paint are presented in Table C-5, Appendix C.

The concentrations of mercury detected in 18 paint samples (BN-PS-10, BN-PS-20, BN-PS-23, BN-PS-25, BN-PS-26, BN-PS-29, BN-PS-35, BN-PS-42, BN-PS-43, BN-PS-45, BN-PS-56 to BN-PS-60, BN-PS-63 and BN-PS-68), plus two field duplicate samples (BN-PS-DUP1 and BN-PS-DUP4) exceeded or were equal to the CCME CSQGs of 24 mg/kg for mercury in soil at a commercial site. These paint samples were also tested for mercury leachate using TCLP to determine whether or not the paint would be considered hazardous waste upon removal from the Site. It should be noted that the concentration of mercury detected in paint sample BN-PS-20 was less than the concentration detected in its field duplicate sample BN-PS-DUP1; therefore, the field duplicate sample was submitted for leachate analysis instead of the original paint sample. The laboratory results for mercury leachate in paint are presented in Table C-6, Appendix C.

4.2.1 Lead in Paint

The concentrations of lead in the paint samples ranged from 45 mg/kg to 49,000 mg/kg (refer to table C-2, Appendix C). Fifty-seven (57) of the 77 paint samples, plus two (2) field duplicate samples (BN-PS-DUP2 and BN-PS-DUP5, duplicates of BN-PS-47 and BN-PS-76, respectively), contained lead at concentrations above the Federal HPA criterion of 90 mg/kg but below the former Federal HPA criterion of 5,000 mg/kg. Nineteen (19) paint samples plus three field duplicates (BN-PS-DUP1, BN-PS-DUP3 and BN-PS-DUP4, duplicates of BN-PS-20, BN-PS-59 and BN-PS-56, respectively) contained lead at concentrations above the former Federal HPA criterion of 5,000 mg/kg. The remaining paint sample (BN-PS-77) analyzed contained lead at a concentration below the applicable Federal HPA criterion (i.e. 90 mg/kg).

4.2.2 Leachable Lead in Paint

The concentrations of leachable lead in paint samples BN-PS-13 (38 mg/L), BN-PS-17 (8 mg/L), BN-PS-28 (19 mg/L), BN-PS-52 (9.5 mg/L), BN-PS-55 (27 mg/L), BN-PS-56 (55 mg/L), BN-PS-59 (67 mg/L), BN-PS-66 (79 mg/L), BN-PS-68 (41 mg/L), BN-PS-69 (31 mg/L), BN-PS-70 (130 mg/L), BN-PS-71 (40 mg/L), BN-PS-73 (190 mg/L) and the field duplicate of BN-PS-20 (BN-PS-DUP1 - 52 mg/L) were above the Schedule II leachate criterion for lead (5.00 mg/L) provided in

the provincial guidance document for leachable toxic waste (GD-PPD-26.1) (refer to table C-5, Appendix C). The paint samples that exceeded the guidelines for lead leachate were:

- BN-PS-13 (white over beige paint collected from the drywall in the washroom of the duplex);
- BN-PS-17 (Multiple layers of grey over yellow/orange over red paint collected from wooden stairs in the basement of the duplex);
- BN-PS-28 (red over white paint from a wooden window frame on the exterior of the equipment building);
- BN-PS-52 (white over multiple layers of grey paint collected from drywall in the basement of the single dwelling);
- BN-PS-55 (grey over blue over orange over red paint collected from wooden stairs in the basement of the single dwelling);
- BN-PS-56 (grey over red over dark red over grey paint collected from concrete on the interior of the light tower);
- BN-PS-59 (beige over dark beige paint collected from concrete on the interior of the light tower);
- BN-PS-66 (multiple layers of white paint collected from wooden siding on the exterior of storage shed #2);
- BN-PS-68 (white over red over grey paint collected from the exterior wooden door frame of storage shed #2);
- BN-PS-69 (white over red over dark grey paint collected from the exterior wooden window frame of storage shed #2);
- BN-PS-70 (multiple layers of white paint collected from the exterior wooden siding of the winch house);
- BN-PS-71 (red over grey paint collected from the exterior wooden door of the winch house);
- BN-PS-73 (multiple layers of grey over red over white paint collected from the interior wooden door of the winch house); and
- BN-PS-DUP1, field duplicate of BN-PS-20 (white paint collected from wooden siding on the exterior of the duplex dwelling).

The paint collected was generally in poor condition and flaking. Since the concentrations of leachable lead in these paint samples are at levels considered to be hazardous, these paints, if removed from the Site, must be disposed of at a hazardous waste treatment facility.

4.2.3 Mercury in Paint

The concentrations of mercury in the paint samples ranged from non-detect (<1.0 mg/kg) to 120 mg/kg (refer to Table C-3, Appendix C). Eight (8) of the 77 paint samples (BN-PS-14, BN-PS-15, BN-PS-22, BN-PS-34, BN-PS-41, BN-PS-61, BN-PS-66 and BN-PS-69) plus one field duplicate (BN-PS-DUP3, duplicate of BN-PS-59) contained mercury at concentrations above the

Federal HPA criterion of 10 mg/kg but below the CCME CSQG of 24 mg/kg. Eighteen (18) paint samples (BN-PS-10, BN-PS-20, BN-PS-23, BN-PS-25, BN-PS-26, BN-PS-29, BN-PS-35, BN-PS-42, BN-PS-43, BN-PS-45, BN-PS-56 to BN-PS-60, BN-PS-63 and BN-PS-68), plus two field duplicate samples (BN-PS-DUP1 and BN-PS-DUP4, duplicates of BN-PS-20 and BN-PS-56) contained mercury at concentrations above or equal to the CCME CSQG of 24 mg/kg for mercury in soil at a commercial site. All of the other paint samples analyzed were either non-detect for mercury (i.e. <1.0 mg/kg) or contained mercury at concentrations below the applicable Federal HPA criterion (i.e. 10 mg/kg).

4.2.4 Leachable Mercury in Paint

The concentrations of leachable mercury in all 18 of the paint samples tested were below the Schedule II leachate criterion for mercury (0.10 mg/L) provided in the provincial guidance document for leachable toxic waste (GD-PPD-26.1) (refer to Table C-6, Appendix C).

The paint collected was generally in poor condition and flaking. The concentrations of leachable mercury in these paints are not at levels considered to be hazardous; however, paint samples BN-PS-56, BN-PS59, BN-PS-68 and BN-PS-DUP1 (duplicate of BN-PS-20) were leachable for lead. Therefore, if removed from the Site, these lead leachable paints must be disposed of at a hazardous waste treatment facility. All other paints tested for mercury leachate, if removed from the Site, may be disposed of at an approved landfill facility, pending landfill and regulatory approval.

4.2.5 PCBs in Paint

All of the paint samples (BN-PS-04, BN-PS-14, BN-PS-21, BN-PS-36, BN-PS-45, BN-PS-51, BN-PS-61 and BN-PS-75) analyzed for PCBs were non-detect (<5.0 mg/kg) and therefore did not exceed the CCME CSQG of 33 mg/kg for PCBs in soil at a commercial site or the criterion for PCB solid (50 mg/kg) provided in the provincial guidance document for leachable toxic waste (GD-PPD-26.1) (refer to Table C-4, Appendix C).

4.3 UREA FORMALDEHYDE FOAM INSULATION (UFFI)

Visual indicators suggesting the potential presence of UFFI were not observed at the Site. The nature of the insulation in the walls and ceilings throughout the Site buildings could not be confirmed at the time of the Site inspections. However, fiberglass insulation was observed in various rooms throughout the single dwelling and in room #1 of the equipment building (refer to Photos 22 and 34, Appendix B). Since the original Belle Isle Lightstation was established in 1905, it is possible that UFFI may be present in some areas of the Site buildings.

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 dependant on temperature, humidity and whether or not the product is exposed to excessive moisture or water. According to the USEPA, increases in temperature, humidity and

moisture conditions can cause increases in the amount of formaldehyde released from newer products that are considered to be sources of formaldehyde emissions. The USEPA report that “studies show that formaldehyde emissions from UFFI decline with time; therefore, homes in which UFFI was installed many years ago are unlikely to have high levels of formaldehyde now”.

4.4 SUSPECTED VISIBLE MOULD GROWTH (SVG)

AMEC inspected the interior areas of the Site buildings for visual or olfactory evidence of suspected mould. Peeling and flaking paint that can be a result of building materials compromised by moisture was observed on walls and/or ceilings in all of the Site buildings (refer to Photos 4, 6 and 105, Appendix B). No building cavity inspections were performed by AMEC during this assessment. Areas of SVG were observed in several areas on the interior of the duplex, single dwelling, equipment building and generator building (refer to Photos 123 to 126, Appendix B). A total of six (6) samples (BN-MD-01 to BN-MD-06) were collected from the duplex and the single dwelling and analyzed for mould growth (refer to Figures 3 and 4, Appendix A and Photos 127 to 132, Appendix B). The laboratory results confirmed that moderate to abundant mould growth was present in the samples collected and submitted for analysis (refer to Table C-7, Appendix C). The types of mould identified in the samples were *Acremonium*, *Ulocladium*, *Cladosporium*, *Chaetomium* and *Penicillium*.

4.5 MERCURY-CONTAINING THERMOSTATS

Five (5) types of thermostats were identified inside the Site buildings during the investigation (refer to Photos 133 to 136, Appendix B). Results of the thermostat inspection are summarized in Table 2.

Table 2: Thermostat Descriptions

Description of Thermostat	Manufacturer	Location Observed	No. Observed	Thermostat Inspected (Yes/No)	Mercury Switch (Yes/No)
Beige, rectangular casing, wall-mounted	White-Rodgers	Duplex Hallway	1	Yes	Yes
Beige, rectangular, wall-mounted	General Humidstat	Duplex Living Room, Single Dwelling Hallway (next to Kitchen)	2	No	Unknown
Beige, rectangular casing, wall-mounted	Honeywell	Single Dwelling Hallway (next to Kitchen)	1	Yes	Yes
No casing, wall-mounted	Unknown	Equipment Building	1	Yes	No
White, rectangular casing, wall-mounted	Unknown	Generator Building	1	Yes	No

4.6 PCB-CONTAINING LIGHT BALLASTS

One type of fluorescent light ballast was observed during the Site inspections (refer to Photo 137, Appendix B). A total of three (3) ballasts were inspected. Results of the light ballast inspection are summarized in Table 3.

Table 3: Fluorescent Light Ballast Descriptions

Manufacturer	Cat./Serial No.	Location Observed	No. Inspected	Condition	Potential PCBs (Yes/No)
CGE Gold Label	17A240E	Equipment Building	3	Poor	No

Five (5) fluorescent light fixtures were observed in the equipment building and two (2) were observed in the generator building. The light ballasts in the two (2) light fixtures at the generator building and in two (2) of the five (5) light fixtures at the equipment building could not be inspected for the presence or absence of PCB-containing dielectric fluid due to safety concerns (casings were difficult to remove/rusted). The light fixtures appeared to be in poor condition. Since it could not be determined from the inspection if the ballasts are either non-PCB or potential-PCB, these ballasts should be treated as PCB-containing ballasts.

4.7 POTENTIAL SOURCES OF ODSs

Potential sources of ODSs identified during this assessment included two refrigerators and a freezer in the single dwelling and a refrigerator in the duplex. The types of refrigerant(s) were not confirmed for the freezer and refrigerators at the time of this assessment.

Although one fire extinguisher (i.e. dry chemical) was identified in the basement of the duplex, the label on this unit did not indicate the presence of halon or other ODS ingredients (refer to Photo 138, Appendix B).

4.8 OTHER POTENTIALLY HAZARDOUS BUILDING MATERIALS OR PRODUCTS

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

4.8.1 Mercury

Mercury may be present in the fluorescent light tubes identified throughout the equipment building and generator building and in the HID light bulbs in the light tower. The light tubes and bulbs in these light fixtures often contain limited quantities of mercury in a powder or vapour form.

4.8.2 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.

Samples of the drinking water at the Site were not collected by AMEC during this assessment and analyzed for the presence of lead. Since the original lightstation was established at the Site in the 1900s, the Site buildings included in this assessment may have been constructed within that time period or later. AMEC expects that lead in drinking water may be an issue, since lead

solder for use in potable water distribution pipes was not banned until the late 1980s. If lead solder is present at the Site, lead concentrations in drinking water can typically be reduced to acceptable levels by running the cold water tap for five to ten minutes prior to use.

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

4.8.3 Silica

Silica is expected to be present in concrete structures, brick and mortar at the Site. Precaution should be taken to prevent/reduce exposure to silica dust during any disturbance/demolition of silica-containing products.

4.8.4 Solid Waste

Metal waste and other debris, including but not limited to electrical and mechanical equipment, pressure vessels, cables, pipes, tractors, tires, wood and abandoned aboveground storage tanks (ASTs) were observed scattered at various locations throughout the Site (refer to Photos 139 to 141, Appendix B). Several yellow bags (contents unknown) and a 45-gallon metal drum were observed inside the generator building (refer to Photo 126, Appendix B). Some of these yellow bags were also observed on the ground surface outside of the generator building and appeared to contain various pieces of metal parts, pipes, cables, etc (refer to Photo 139, Appendix B). A pile of green sacks (contents unknown) were also observed on the ground surface near the generator building.

4.9 QA/QC DISCUSSION

Details regarding the QC assessment of surrogate recoveries, field duplicate, laboratory duplicate and laboratory blank samples are presented in this section. The QA/QC results are reported on the Laboratory Certificates of Analyses included in Appendix D.

4.9.1 Surrogate Recoveries

The PCB surrogate recoveries for paint samples BN-PS-04, BN-PS-14, BN-PS-21, BN-PS-45, BN-PS-51, BN-PS-61 and BN-PS-75 were not within the acceptable QC limits. Unidentified (possibly halogenated) compounds were detected in paint samples BN-PS-36 and BN-PS-61. The laboratory reported that the overall quality control for this analysis meets acceptability criteria.

4.9.2 Laboratory Blank Samples

Laboratory method blank samples were analyzed for lead, mercury, PCBs, leachable lead and leachable mercury. 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.

4.9.3 Field Duplicate Samples

The analytical data for the field duplicate paint samples and the original paint samples analyzed for lead and mercury were compared as relative percent differences (RPDs). A review of the field duplicate data is summarized in Table 4.

Table 4: Field Duplicate RPDs

Duplicate Sample ID	Original Sample ID	RPD – Lead %	RPD- Mercury %
BN-PS-DUP1	BN-PS-20	67.7	8.2
BN-PS-DUP2	BN-PS-47	24.0	24.0
BN-PS-DUP3	BN-PS-59	64.9	116
BN-PS-DUP4	BN-PS-56	16.9	1.6
BN-PS-DUP5	BN-PS-76	---	NC

Notes:

--- denotes sample results are identical (i.e. 0.0%).

NC denotes RPD not calculated (i.e. result(s) less than reportable detection limit).

The poor RPD for mercury in sample BN-PS-DUP3 was likely due to sample inhomogeneity. All other RPDs were reported within 100% proof of equivalency.

4.9.4 Laboratory Duplicates

The analytical data for the laboratory duplicate paint samples and the original paint samples analyzed for lead and mercury were compared as RPDs. A review of the laboratory duplicate data is summarized in Table 5.

Table 5: Laboratory Duplicate RPDs

Laboratory Duplicate Sample ID	Original Sample ID	RPD – Lead %	RPD- Mercury %
BN-PS-01 Lab-Dup	BN-PS-01	5.1	10.7
BN-PS-31 Lab-Dup	BN-PS-31	31.9	---
BN-PS-21 Lab-Dup	BN-PS-21	---	15.7
BN-PS-51 Lab-Dup	BN-PS-51	5.7	18.2
BN-PS-71 Lab-Dup	BN-PS-71	108	NC
BN-PS-01 Lab-Dup2	BN-PS-01	---	10.7
BN-PS-31 Lab-Dup2	BN-PS-31	26.4	---
BN-PS-21 Lab-Dup2	BN-PS-21	6.1	15.7
BN-PS-51 Lab-Dup2	BN-PS-51	5.7	NC
BN-PS-71 Lab-Dup2	BN-PS-71	85.7	48.6

Notes:

--- denotes sample results are identical (i.e. 0.0%).

NC denotes RPD not calculated (i.e. result(s) less than reportable detection limit).

The poor RPDs for lead in samples BN-PS-71 Lab-Dup and BN-PS-71 Lab-Dup2 were likely due to sample inhomogeneity. All RPDs were reported within 100% proof of equivalency, with the exception of the RPD for lead in sample BN-PS-71 Lab-Dup.

4.9.5 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.

5.0 CONCLUSIONS AND RECOMMENDATIONS

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

Asbestos-Containing Materials

- Results of the asbestos sampling and analytical program revealed that there are building materials containing greater than 1% asbestos by dry weight, which are considered to be ACMs. Potentially friable asbestos is present in the form of drywall joint compound and/or plaster. Non-friable asbestos is present in the form of vinyl floor tiles, caulking and mortar. It should be noted that the drywall and associated joint compound visible throughout the Site buildings varied in condition from good to poor and the mortar in the kitchen of the single dwelling was in poor condition; therefore, priority should be given to the removal of the deteriorated joint compound/plaster and mortar inside these areas of the Site buildings.
- Results of the asbestos sampling and analytical program also revealed that there are building materials containing less than 1% asbestos by dry weight. These materials include drywall plaster, asphalt shingles, caulking, grout and countertop mastic.
- 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 and mechanical components and insulators such as wiring and gaskets inside electrical panels, electronic and/or mechanical equipment.
- Other possible hidden and inaccessible ACMs have the potential to be present at the Site but were not identified during the Site visits. These possible ACMs could include interior components of furnaces and/or stoves, 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.
- 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 must have a written assessment and management plan (where applicable) for potential ACMs; and,

- Prior to general disturbance activity (e.g., demolition, renovation or removal), all ACMs must be safely removed from the Site buildings and disposed of in accordance with appropriate environmental guidelines by an asbestos abatement contractor registered with the Department of Labour, Occupational Health and Safety Branch.
- ACMs in good condition should be inspected on an annual basis. ACMs in poor condition should be removed from the Site buildings and transported off-site for proper disposal in accordance with the Asbestos Abatement Regulations (111/98).

Lead, Mercury and PCBs in Paint

- Results of the paint sampling and analytical program revealed lead and mercury-based paint finishes within the Site buildings (i.e., the concentrations of lead and mercury in some paint finishes were above the applicable Federal HPA criteria of 90 mg/kg for lead and 10 mg/kg for mercury).
 - The concentrations of lead in the paint samples ranged from 45 mg/kg to 49,000 mg/kg and the concentrations of mercury in the paint samples ranged from non-detect (<1.0 mg/kg) to 120 mg/kg.
 - Nineteen (19) paint samples plus three (3) field duplicate samples contained lead at concentrations above the former Federal HPA criterion of 5,000 mg/kg.
 - Eighteen (18) paint samples plus two (2) field duplicate samples contained mercury at concentrations above or equal to the CCME CSQG of 24 mg/kg for mercury in soil at a commercial site.
- 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.
 - Based on the results from the paint samples analyzed during this assessment, 63 of the 77 paint finishes that were sampled for lead and mercury in paint are not considered hazardous waste and can be disposed of at an approved landfill facility, pending regulatory and landfill operator approval.
 - The concentrations of leachable lead in 14 paint samples were above the Schedule II leachate criterion for lead (5.00 mg/L) provided in the provincial guidance document for leachable toxic waste (GD-PPD-26.1). Since the concentrations of leachable lead in these paint samples are at levels considered to be hazardous, these paints, if removed from the Site, must be disposed of at a hazardous waste treatment facility. The paint collected at the Site was generally in poor condition and flaking; therefore, if any paint exceeding the lead leachate criterion is deteriorated (i.e. peeling and flaking) then in order to help prevent impacts to the environment, priority should be given to the removal of these deteriorated areas.
- If potential lead or mercury containing paint finishes that were not sampled during this assessment are encountered, 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.

- All of the paint samples analyzed for PCBs were non-detect (<5.0 mg/kg) and therefore did not exceed the CCME CSQG of 33 mg/kg for PCBs in soil at a commercial site or the criterion for PCB solid (50 mg/kg) provided in the provincial guidance document for leachable toxic waste (GD-PPD-26.1).
- There are potential adverse human health impacts associated with disturbing (e.g., scraping) lead and mercury-based paint finishes. As a precautionary measure, AMEC recommends proper maintenance of lead and mercury-based paint finishes, as follows:
 - Where lead and mercury-based paint finishes are in good condition (i.e., intact and not peeling or flaking) the surfaces can be covered by painting with non lead or non mercury-containing paint.
 - In areas of minor peeling or flaking the paint should be removed using wet scraping techniques and the surface should then be repainted with non lead or non mercury-containing paint.
 - 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 or mercury-based paint finishes are present and in poor condition, an experienced contractor should be utilized for painting, renovation or decommissioning/demolition activities.
 - Steps should be taken 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.

Urea Formaldehyde Foam Insulation (UFFI)

- Visual indicators suggesting the potential presence of UFFI were not observed at the Site. The nature of the insulation in the walls and ceilings throughout the Site buildings could not be confirmed at the time of the Site inspections. However, fiberglass insulation was observed in various rooms throughout the single dwelling and in room #1 of the equipment building. Since the original Belle Isle Lightstation was established in 1905, it is possible that UFFI may be present in some areas of the Site buildings.
- Based on a visual nonintrusive inspection, there was no evidence that UFFI is present in these structures. However, the inferred age of some of the Site buildings suggests that UFFI could be present within the walls which could not be visually inspected. Based on the sources of information reviewed by AMEC to assess whether UFFI is considered to be a potential environmental concern at the Site (refer to Sections 3.3 and 4.3), it can be inferred that any UFFI present within the Site buildings 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. prior to 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.

Mould

- AMEC inspected the interior areas of the Site buildings for visual or olfactory evidence of suspected mould. Areas of SVG were observed in several areas on the interior of the duplex, single dwelling, equipment building and generator building. A total of six (6) samples were collected from these areas in the duplex and single dwelling and analyzed for mould growth. Results of the mould sampling program revealed that moderate to abundant mould growth was present in the samples collected from the interior of the duplex and single dwellings. Existing conditions in the Site buildings (e.g. improper ventilation, inadequate building heating, prolonged periods of increased moisture) may potentially contribute to or enhance mould growth inside the Site buildings.
- Based on the estimated area of mould impacted materials observed at the Site and the intended future use of the Site buildings, the interior areas of the duplex, single dwelling, equipment building and generator building should be remediated using Level 3 abatement procedures (i.e. more than 10 m²), as outlined in the 2010 EACO Mould Abatement Guidelines. It should be noted that asbestos may be present in drywall joint compound in areas where mould is present on drywall and must be considered during any abatement of these areas.

Lead and Mercury-Containing Materials/Equipment

- Samples of the drinking water at the Site buildings were not collected or analyzed during this assessment for the presence of lead. Since the original lightstation was established at the Site in the 1900s, the Site buildings included in this assessment may have been constructed within that time period or later; therefore, lead in drinking water may be a potential issue since the lead content in solders and fluxes was not limited to 0.2% in potable water systems until 1990 (*National Plumbing Code of Canada*). The Health Canada Guidelines for Canadian Drinking Water Quality includes maximum acceptable concentrations of various chemical parameters in drinking water, including lead. If lead solder is present in the potable water systems, lead concentrations in drinking water can typically be reduced to acceptable levels by running the cold water tap for five to ten minutes prior to use. It is important to note that at the time of the Site investigation it was not known if potable water was supplied to the Site.
- Several potential lead-acid batteries (i.e., solar batteries) were noted inside the videograph building at the time of the Site inspection.
- Mercury-containing thermostats were observed in the duplex and single dwellings and suspected mercury-containing fluorescent light tubes were observed in the equipment building and generator building.
- Mercury may also be present in possible HID lights at the top of the light tower.
- The disturbance, control or disposal of lead-containing material / equipment (e.g., solder on copper piping, batteries, etc.) or mercury-containing material / equipment (e.g., thermostats, light tubes and bulbs) should be carried out in accordance with applicable criteria / regulations (refer to Section 2.0). The presence / absence of lead or mercury in these materials should be confirmed through a mechanical contractor or consultant prior to

disturbance or disposal of these materials. Typically these materials are sent to a recycling facility and not a landfill.

- Mercury-containing fluorescent light tubes and HID light bulbs should be removed intact and returned to the manufacturer for recycling, or disposed of at an approved facility.

PCB Containing Equipment

- The light ballasts in the two (2) light fixtures at the generator building and in two (2) of the five (5) light fixtures at the equipment building could not be inspected for the presence or absence of PCB-containing dielectric fluid due to safety concerns (casings were difficult to remove/rusted). It could not be determined from the inspection if the ballasts are either non-PCB or potential-PCB; therefore, these ballasts should be treated as PCB-containing ballasts.
- The PCB content in all light ballasts 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.
- All PCB-containing equipment 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 Site buildings should be transported and disposed of by a registered hazardous waste transporter in accordance with applicable regulations.

Potential Sources of ODSs

- Potential sources of ODSs identified during this assessment included two (2) refrigerators and a freezer in the single dwelling and a refrigerator in the duplex. The types of refrigerant(s) were not confirmed for the freezer or refrigerators at the time of this assessment. Although one (1) fire extinguisher was identified in the basement of the duplex, the label on this unit, did not indicate the presence of halon or other ODS ingredients. All ODSs should be removed by an approved contractor prior to disposing of the cooler and/or refrigerators from the Site buildings.
- 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.

Silica Dust

- Silica is expected to be present in concrete structures, brick and mortar at the Site. Precaution 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.

Solid Waste

- Metal waste and other debris, including but not limited to electrical and mechanical equipment, pressure vessels, cables, pipes, tractors, tires, wood, yellow bags, green sacks (contents unknown) and ASTs were observed scattered at various locations throughout the Site.
- Several yellow bags (contents unknown) and a 45-gallon metal drum were also observed inside the generator building.
- The solid waste at the Site should be properly disposed of in accordance with applicable regulations.

6.0 CLOSURE

This report was prepared for the exclusive use of PWGSC and CCG/DFO. The findings of this report are based solely on the conditions of the Site buildings encountered at the time of the Site visits, and are limited by the availability of information at the time of the HBMS, 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 HBMS or which were not apparent or accessible during the Site visits. This Report is also subject to the further limitations contained in Appendix F.

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 AMEC is required. With respect to third parties, AMEC 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, AMEC disclaims any obligation to update this report for events taking place, or with respect to information that becomes available to AMEC after the time during which AMEC conducted the hazardous building materials assessment.

In evaluating the property, AMEC has relied in good faith on information provided by other individuals noted in this report. AMEC 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. AMEC 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.

AMEC 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

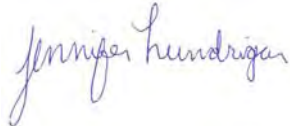
herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

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.

Yours truly,

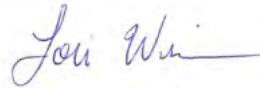
AMEC Environment & Infrastructure
A Division of AMEC Americas Limited

Prepared by:

A handwritten signature in blue ink that reads "Jennifer Lundrigan".

Jennifer Lundrigan, B.Sc.
Environmental Scientist

Reviewed by:

A handwritten signature in blue ink that reads "Lori Wiseman".

Lori Wiseman, P.Eng
Project Manager

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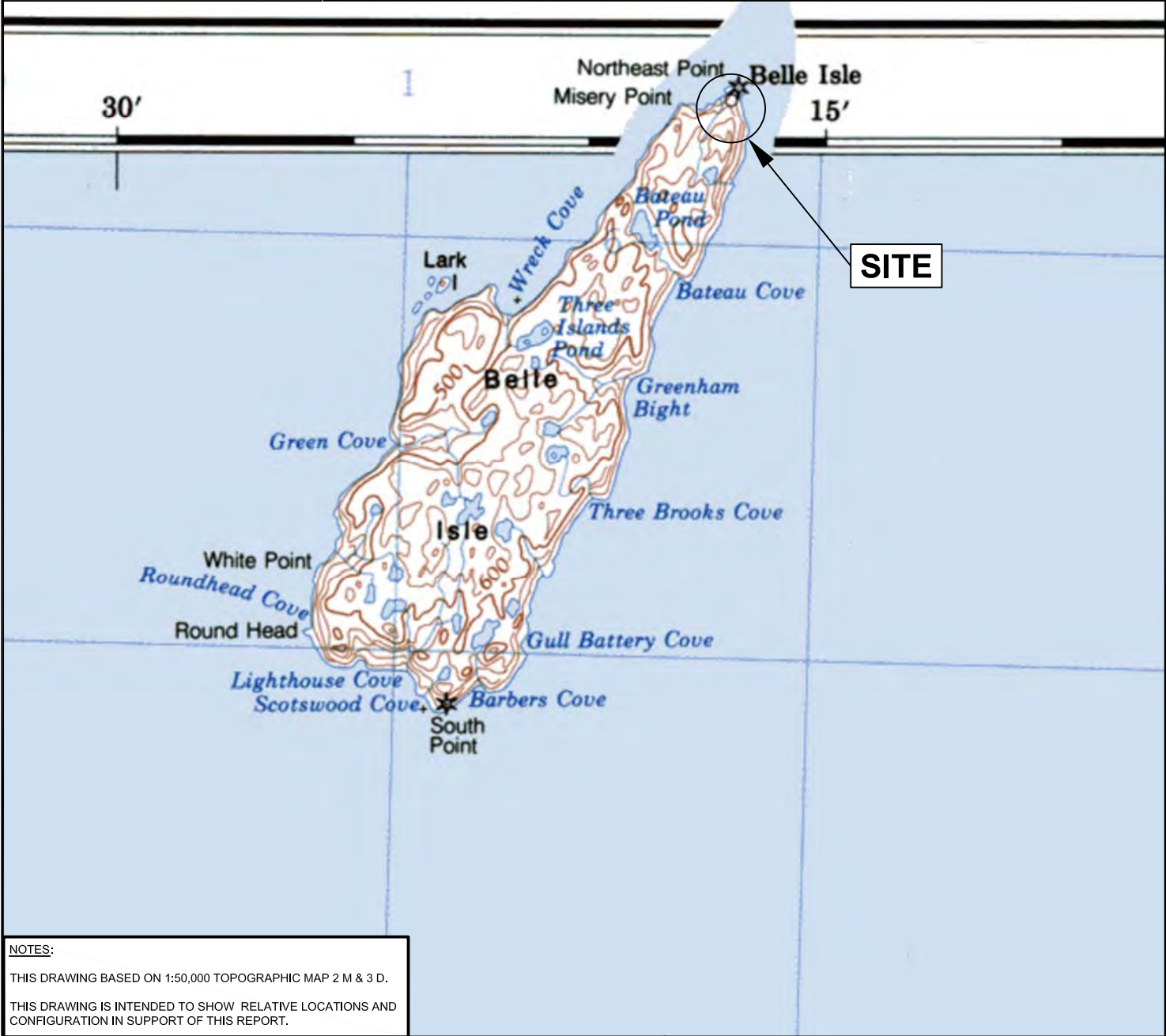
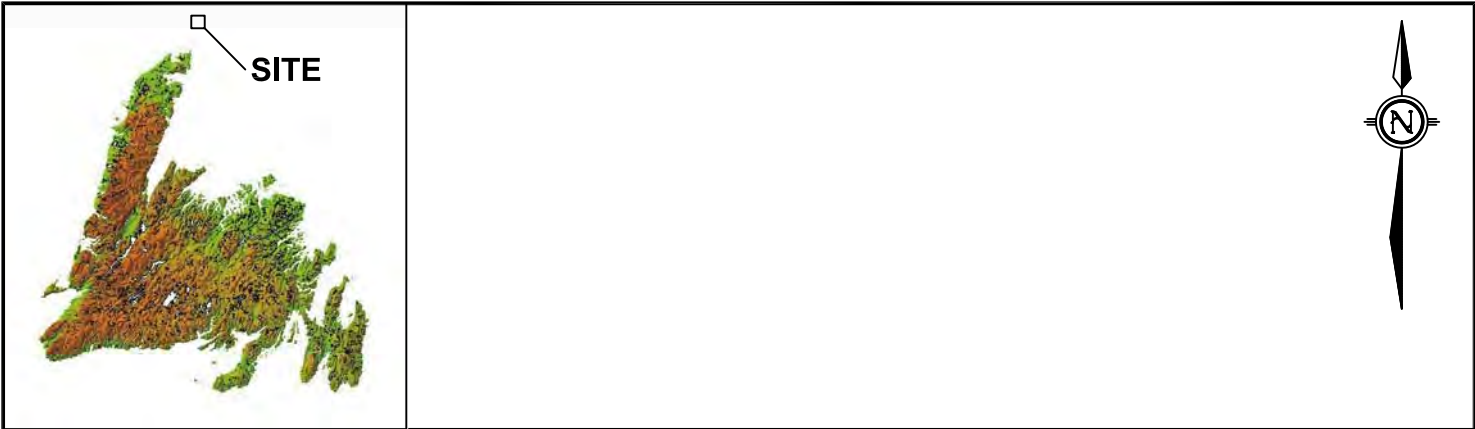
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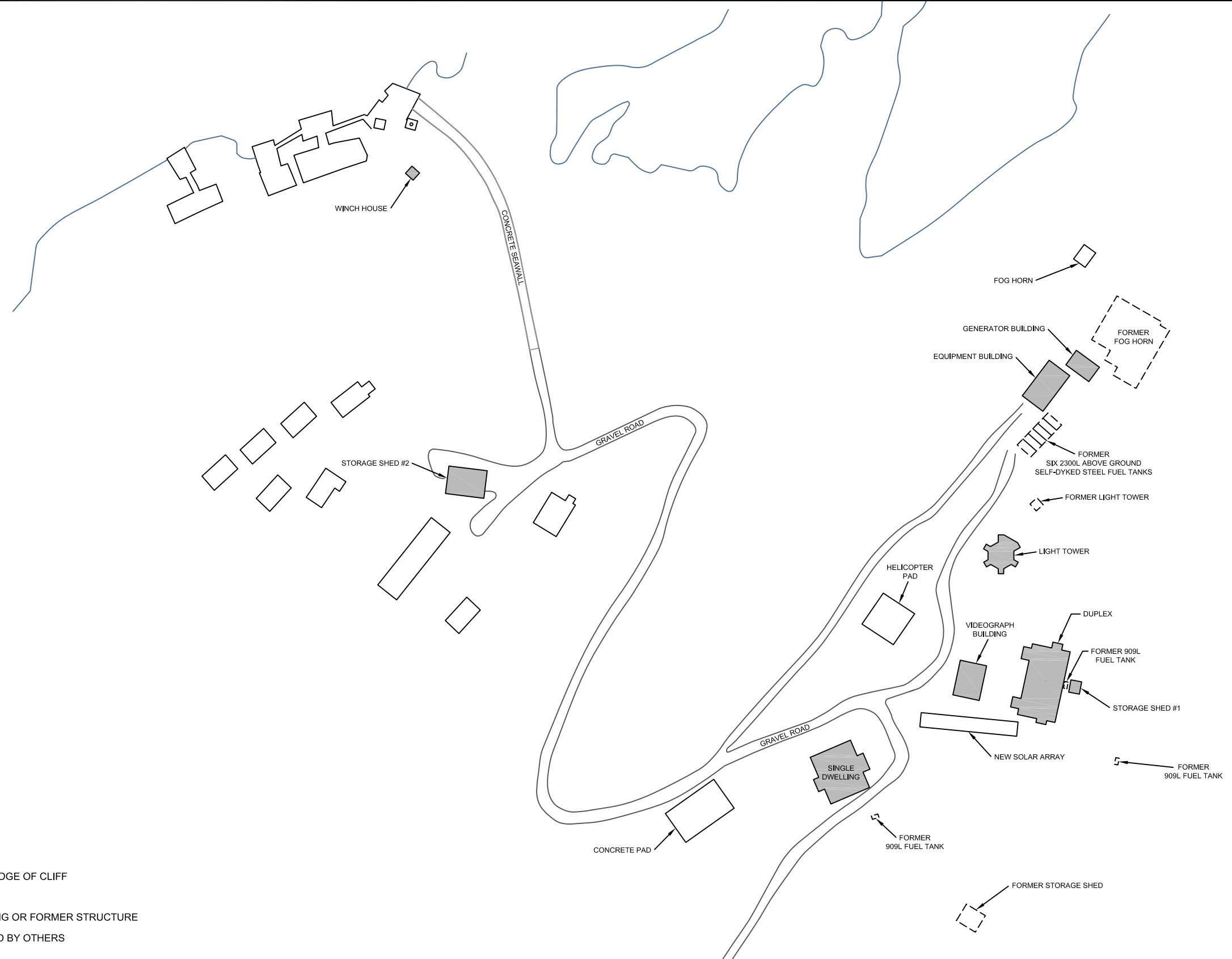
APPENDIX A

Figures

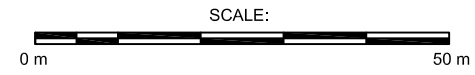


NOTES:
 THIS DRAWING BASED ON 1:50,000 TOPOGRAPHIC MAP 2 M & 3 D.
 THIS DRAWING IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION IN SUPPORT OF THIS REPORT.

	Date:	March 2013	Project: HAZARDOUS BUILDING MATERIALS SURVEY BELLE ISLE NORTH LIGHTSTATION BELLE ISLE, NL					
	Drawn by:	H. Ryan	Title: SITE LOCATION PLAN					
 Public Works and Government Services Canada Travaux publics et Services gouvernementaux Canada	Approved by:	J. Lundrigan	Scale:	NTS	Project No.:	TF12076460	Figure No.:	1



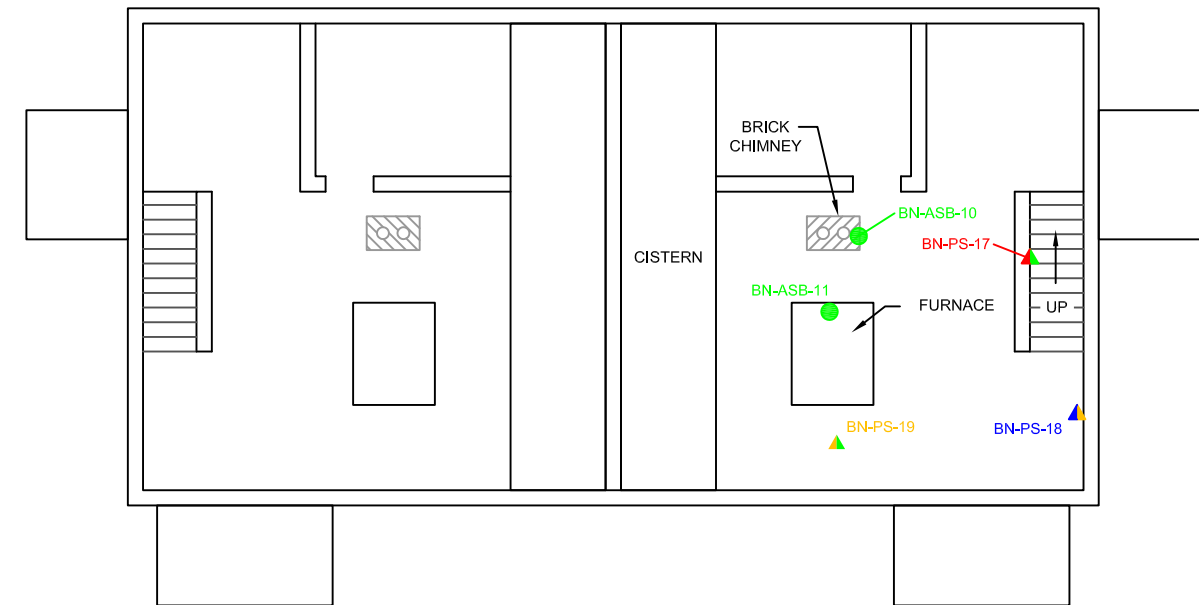
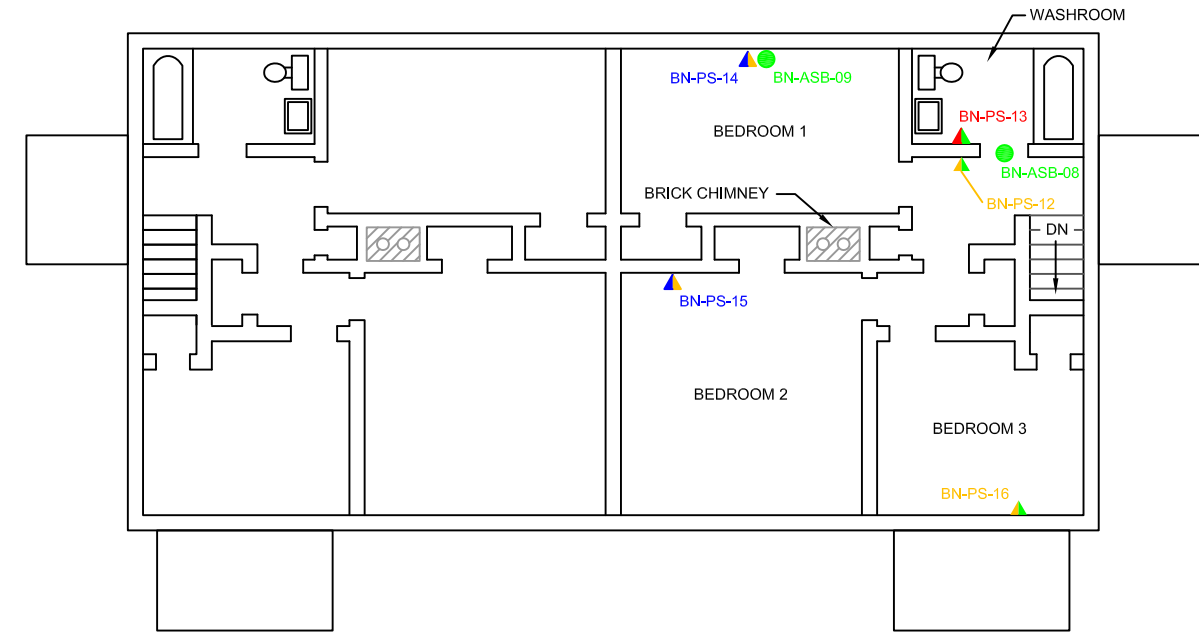
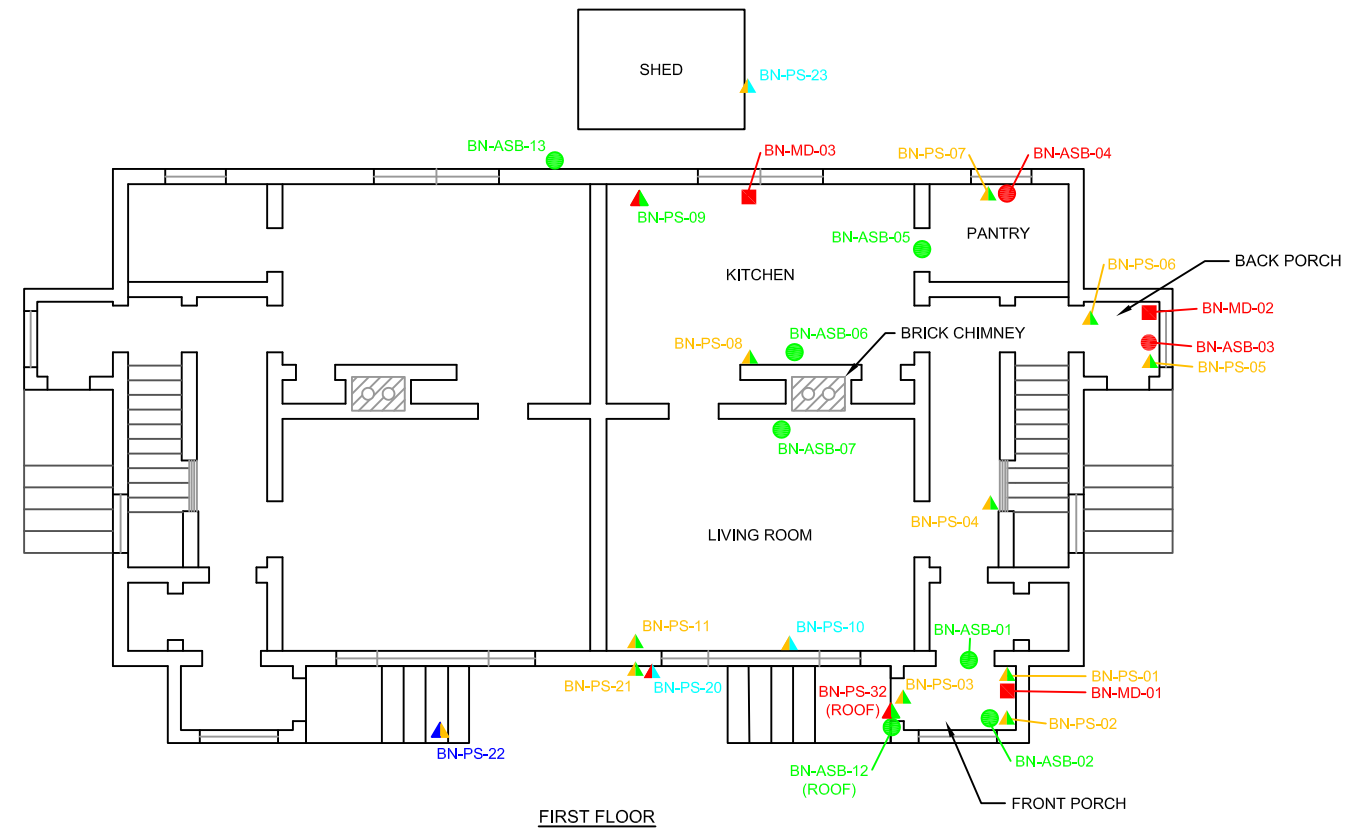
- LEGEND:**
- APPROXIMATE EDGE OF CLIFF
 - BUILDING
 - FORMER BUILDING OR FORMER STRUCTURE
 - BUILDING OWNED BY OTHERS



NOTE:

1. ALL DIMENSIONS ARE IN METRES.
2. DO NOT SCALE FROM FIGURE.
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	CHK'D BY:	TITLE	PROJECT No.
	J. Lundrigan	SITE PLAN	TF12076460
	SCALE:		REV. No.
	As Shown		0
			FIGURE No.
			2



NOTES:
 1. NO ACCESS TO BUILDING INTERIOR ON THE NORTH SIDE OF DUPLEX (DOORS BOLTED SHUT).

- LEGEND:**
- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY
 - ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY
 - ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 10 mg/kg AND LESS THAN OR EQUAL TO 24 mg/kg FOR MERCURY AND RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD
 - ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND EXCEED 24 mg/kg FOR MERCURY
 - ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 5000 mg/kg FOR LEAD AND EXCEED 24 mg/kg FOR MERCURY
 - ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED OR RESULTS < 1% FOR ASBESTOS
 - ASBESTOS SAMPLE LOCATION - RESULTS > 1% FOR ASBESTOS
 - MOULD SAMPLE LOCATION - MOULD GROWTH IDENTIFIED

NOTE:
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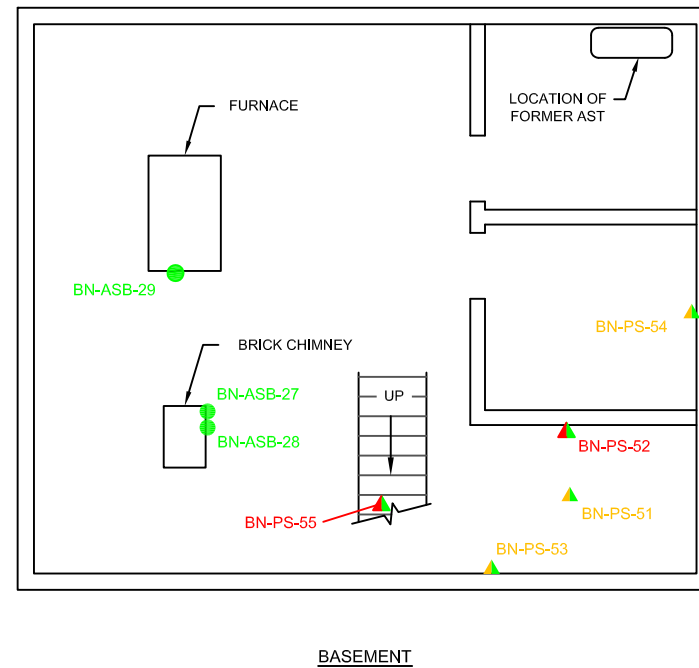
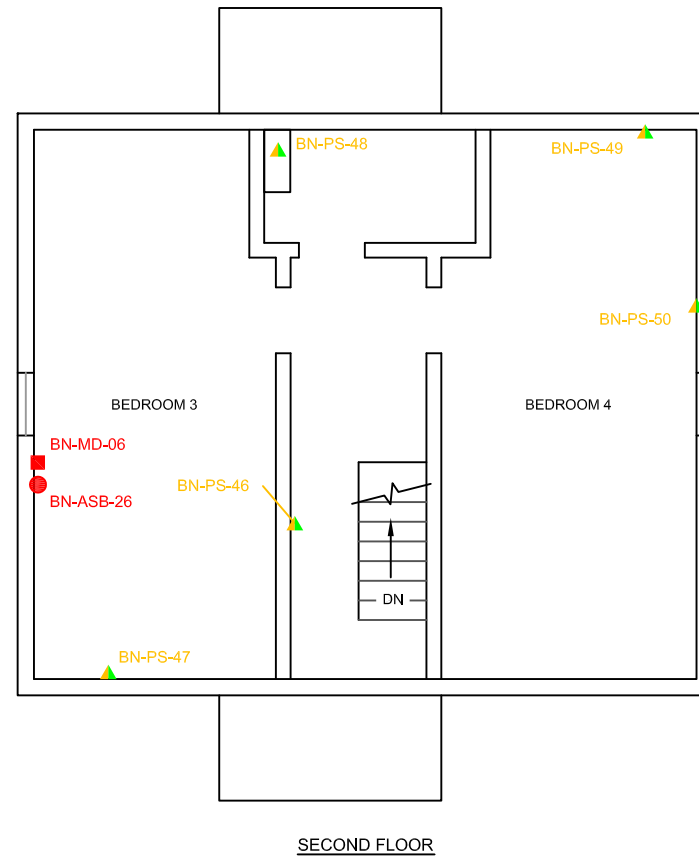
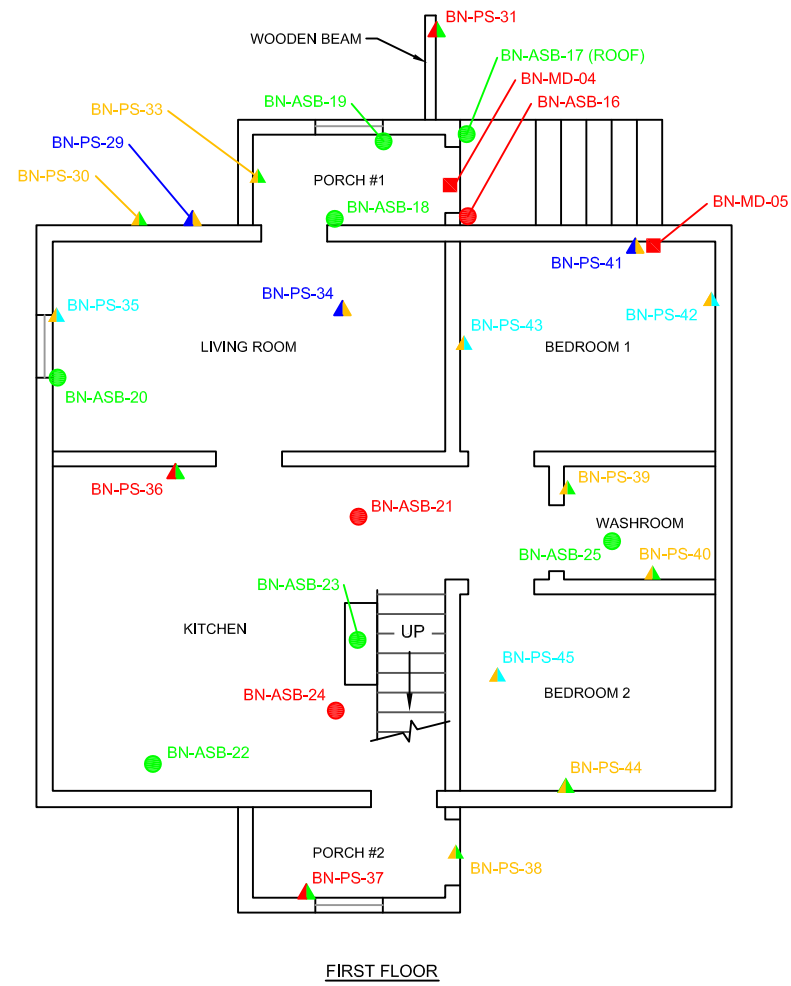
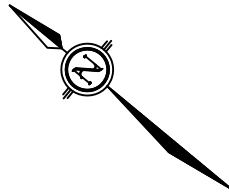
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J. Lundrigan
 SCALE:
NTS

PROJECT
**HAZARDOUS BUILDING MATERIALS SURVEY
 BELLE ISLE NORTH LIGHTSTATION
 BELLE ISLE, NL**
 TITLE
DUPLEX SAMPLE LOCATION PLAN

DATE
March 2013
 PROJECT No.
TF12076460
 REV. No.
0
 FIGURE No.
3



LEGEND:

- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY
- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY
- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 10 mg/kg AND LESS THAN OR EQUAL TO 24 mg/kg FOR MERCURY AND RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD
- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND EXCEED 24 mg/kg FOR MERCURY
- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED OR RESULTS < 1% FOR ASBESTOS
- ASBESTOS SAMPLE LOCATION - RESULTS > 1% FOR ASBESTOS
- MOULD SAMPLE LOCATION - MOULD GROWTH IDENTIFIED

NOTE:

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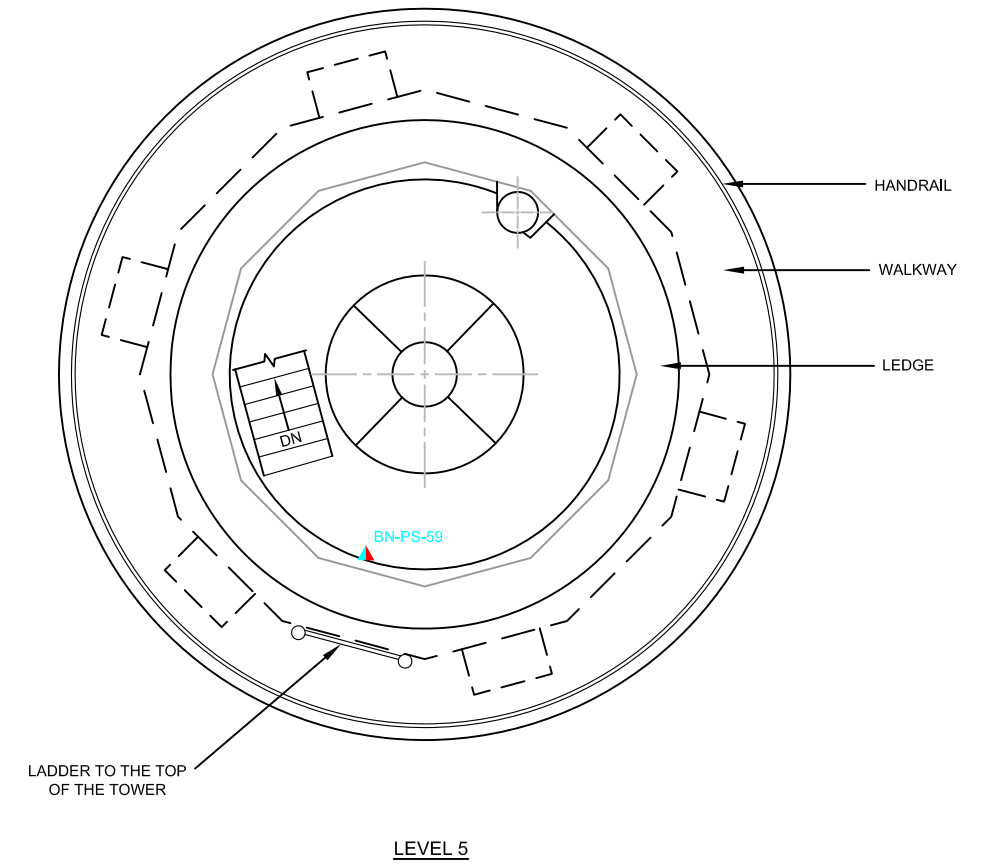
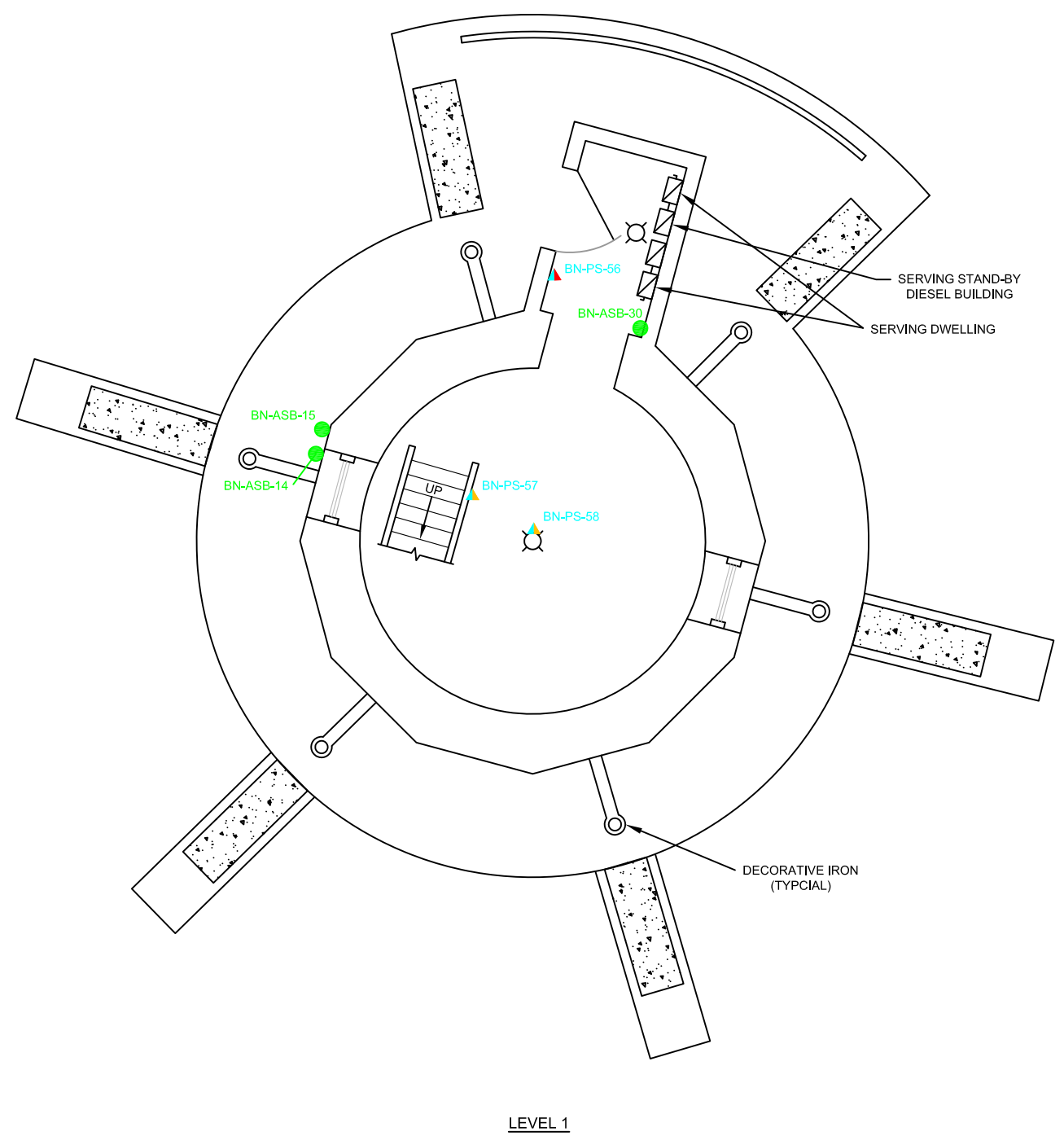
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J. Lundrigan
 SCALE:
NTS

PROJECT
**HAZARDOUS BUILDING MATERIALS SURVEY
 BELLE ISLE NORTH LIGHTSTATION
 BELLE ISLE, NL**
 TITLE
SINGLE DWELLING SAMPLE LOCATION PLAN

DATE
March 2013
 PROJECT No.
TF12076460
 REV. No.
0
 FIGURE No.
4



LEGEND:

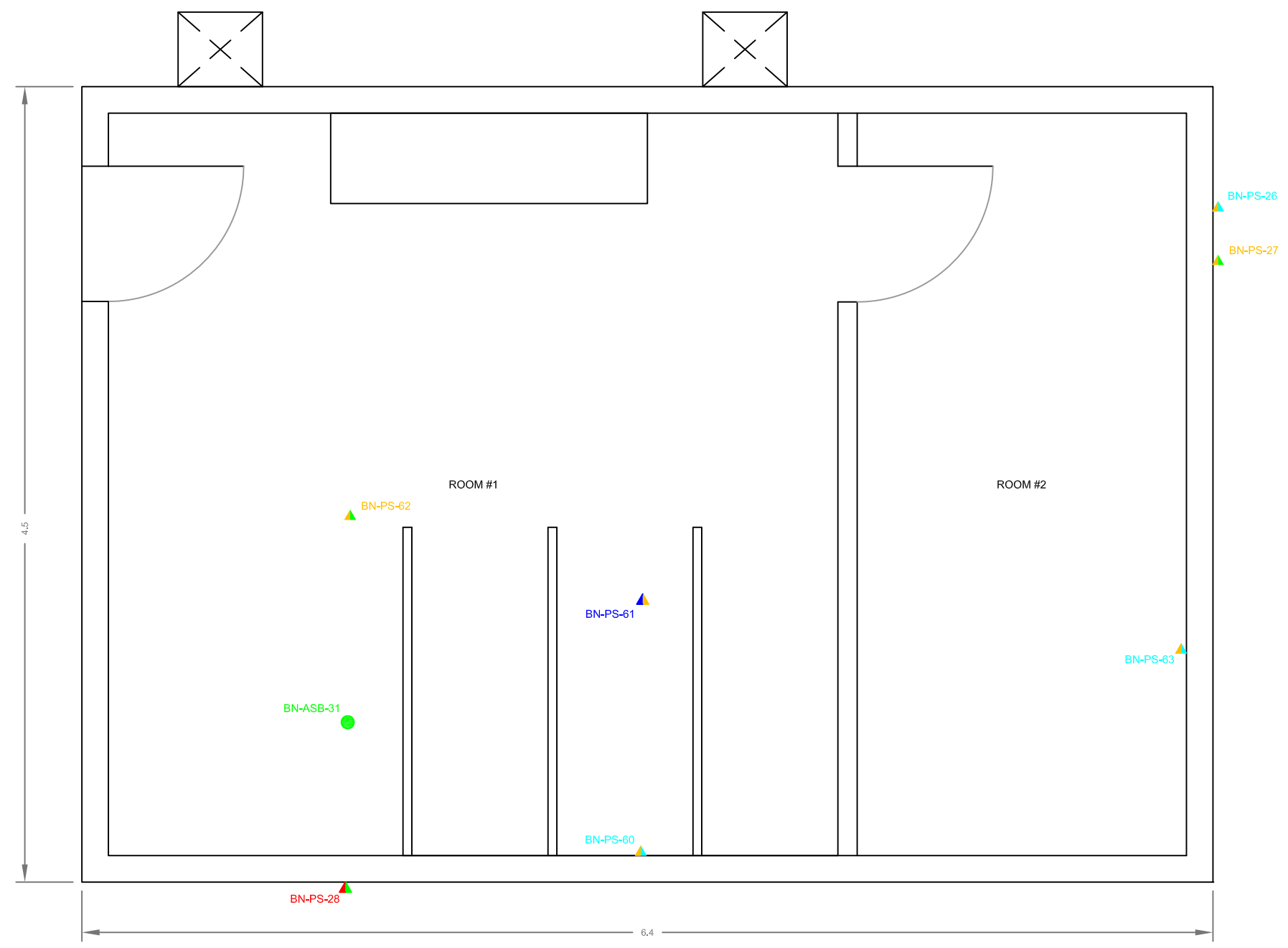
- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND EXCEED 24 mg/kg FOR MERCURY
- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 5000 mg/kg FOR LEAD AND EXCEED 24 mg/kg FOR MERCURY
- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED OR RESULTS < 1% FOR ASBESTOS

NOTE:

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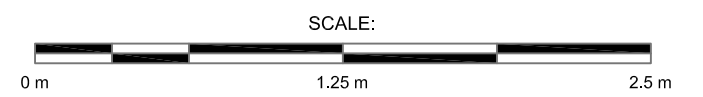
 <p>Public Works and Government Services Canada Travaux publics et Services gouvernementaux Canada</p>	
<p>AMEC Environment & Infrastructure</p> <p>133 Crosbie Road St. John's, NL A1B 4A5 709-722-7023</p>	

DWN BY:	H. Ryan	PROJECT	DATE
CHK'D BY:	J. Lundrigan	HAZARDOUS BUILDING MATERIALS SURVEY BELLE ISLE NORTH LIGHTSTATION BELLE ISLE, NL	March 2013
SCALE:	NTS		PROJECT No. TF12076460
		TITLE	REV. No. 0
		LIGHT TOWER SAMPLE LOCATION PLAN	FIGURE No. 5





LEGEND:

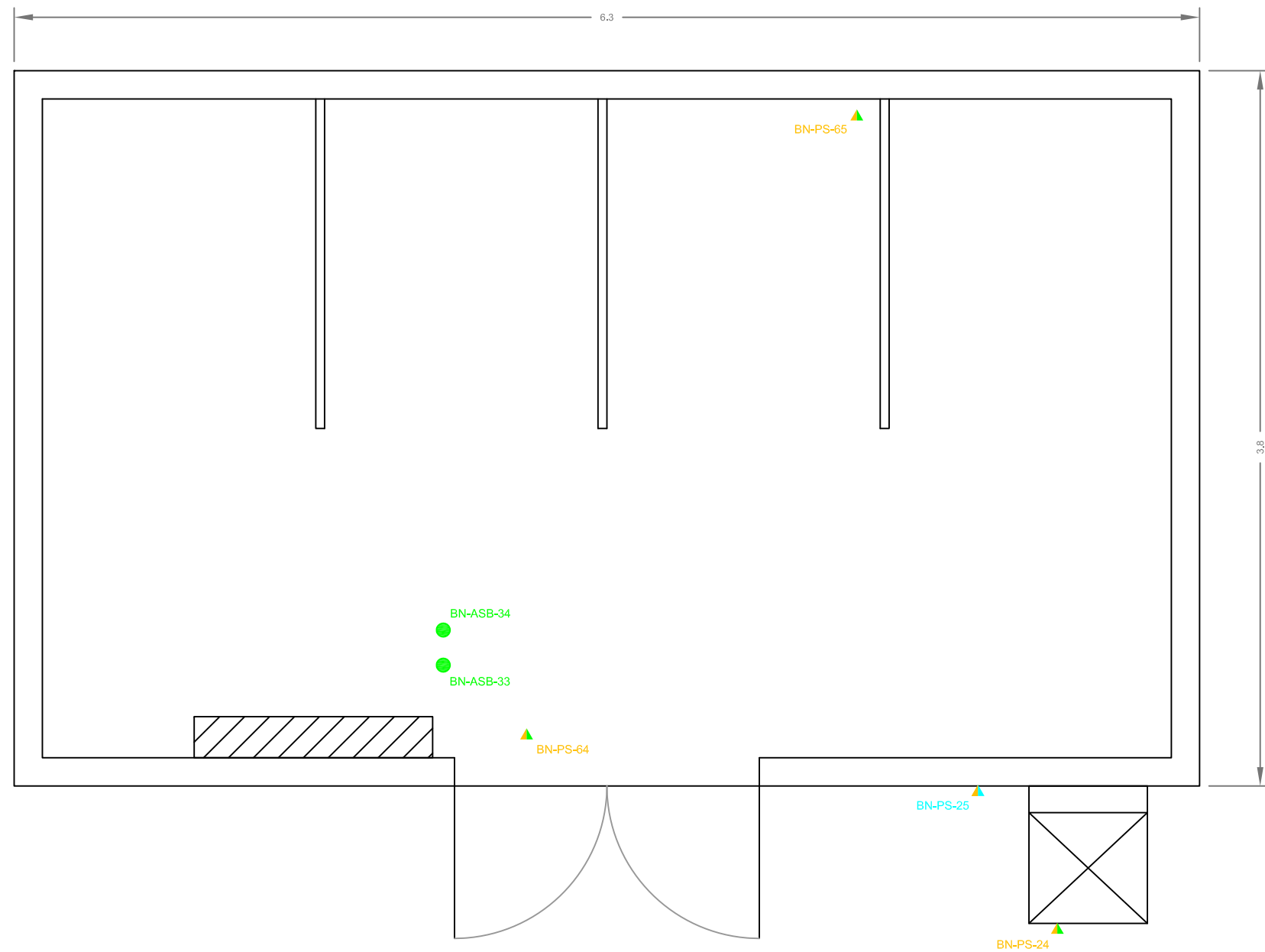
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- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY
- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 10 mg/kg AND LESS THAN 24 mg/kg FOR MERCURY AND RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD
- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND EXCEED 24 mg/kg FOR MERCURY
- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED OR RESULTS < 1% FOR ASBESTOS



NOTE:

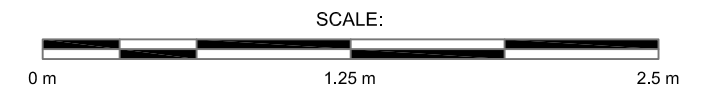
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	CHK'D BY:	J. Lundrigan		PROJECT No.	TF12076460
AMEC Environment & Infrastructure 133 Crosbie Road St. John's, NL A1B 4A5 709-722-7023		SCALE:	EQUIPMENT BUILDING SAMPLE LOCATION PLAN	REV. No.	0
				FIGURE No.	6



LEGEND:

- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY
- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND EXCEED 24 mg/kg FOR MERCURY
- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED OR RESULTS < 1% FOR ASBESTOS



NOTE:

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H. Ryan

CHK'D BY:

J. Lundrigan

SCALE:

As Shown

PROJECT

**HAZARDOUS BUILDING MATERIALS SURVEY
BELLE ISLE NORTH LIGHTSTATION
BELLE ISLE, NL**

TITLE

**GENERATOR BUILDING
SAMPLE LOCATION PLAN**

DATE

March 2013

PROJECT No.

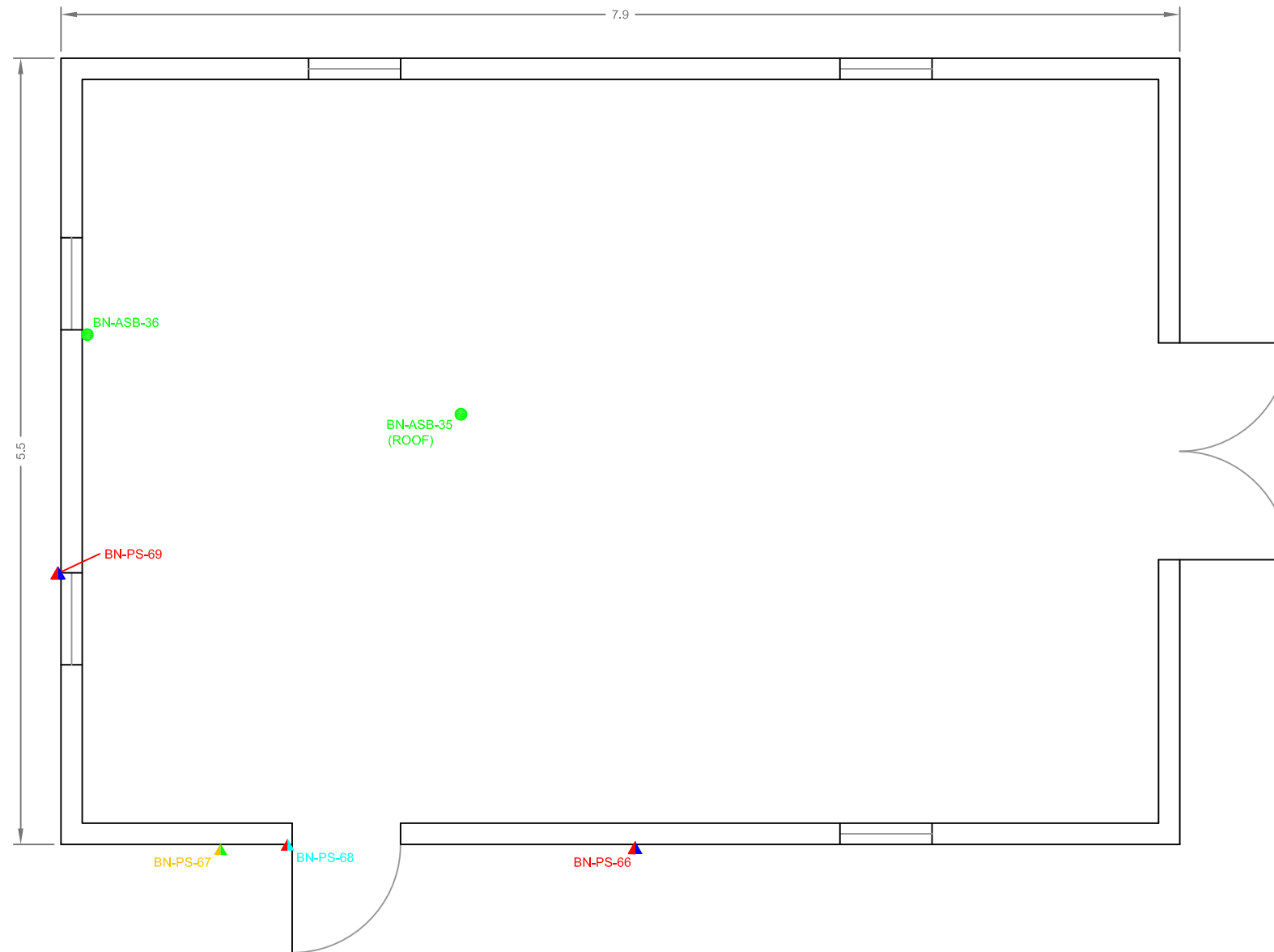
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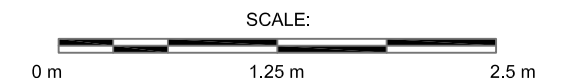
FIGURE No.

7



LEGEND:

- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY
- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 5000 mg/kg FOR LEAD AND EXCEED 10 mg/kg AND LESS THAN 24 mg/kg FOR MERCURY
- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 5000 mg/kg FOR LEAD AND EXCEED 24 mg/kg FOR MERCURY
- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED OR RESULTS < 1% FOR ASBESTOS



NOTE:

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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.
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AMEC Environment & Infrastructure

133 Crosbie Road
St. John's, NL
A1B 4A5
709-722-7023



DWN BY:

H. Ryan

CHK'D BY:

J. Lundrigan

SCALE:

As Shown

PROJECT

HAZARDOUS BUILDING MATERIALS SURVEY
BELLE ISLE NORTH LIGHTSTATION
BELLE ISLE, NL

TITLE

STORAGE SHED #2
SAMPLE LOCATION PLAN

DATE

March 2013

PROJECT No.

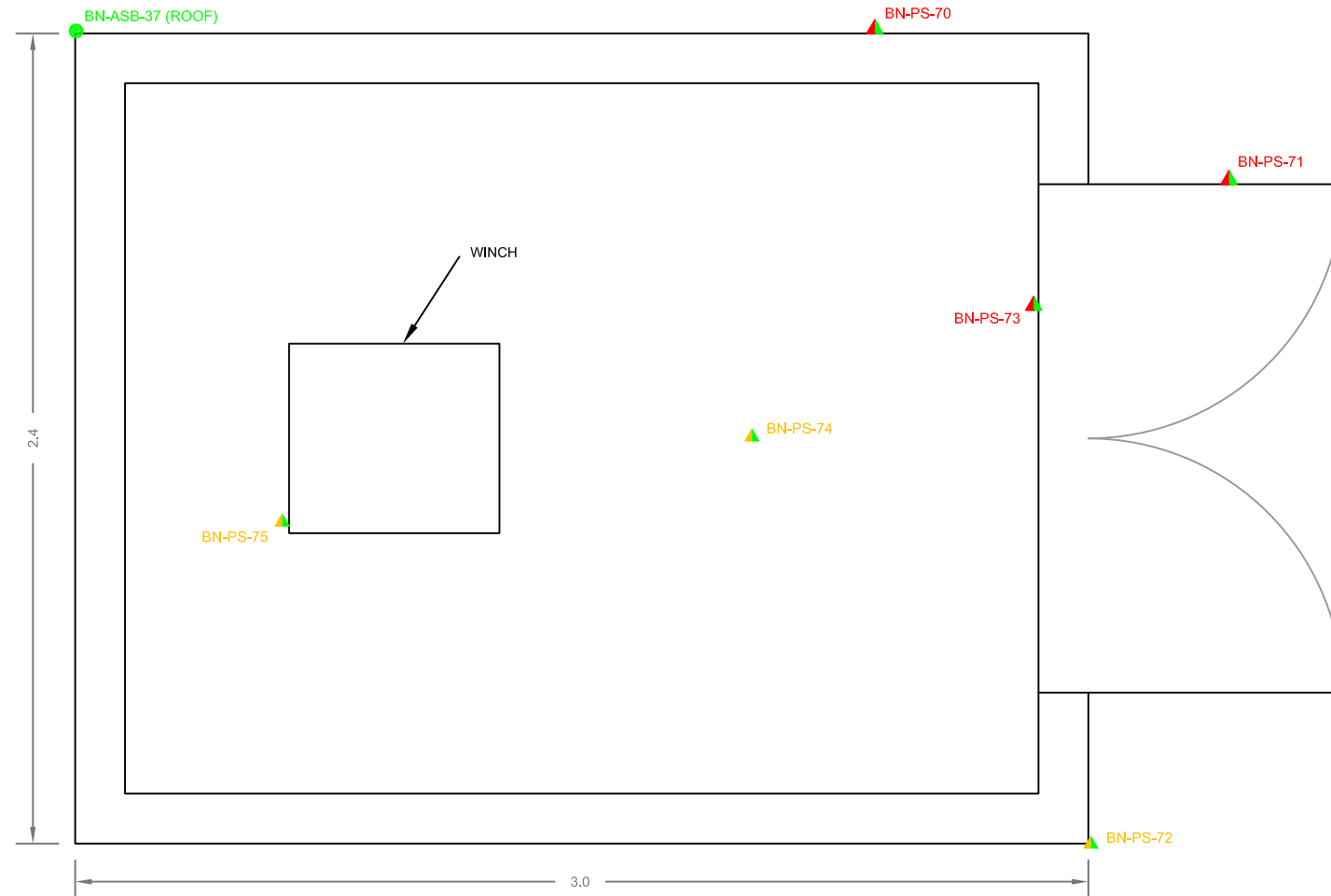
TF12076460

REV. No.

0

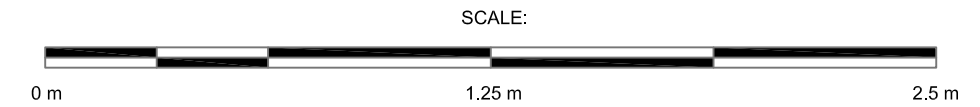
FIGURE No.

8






LEGEND:

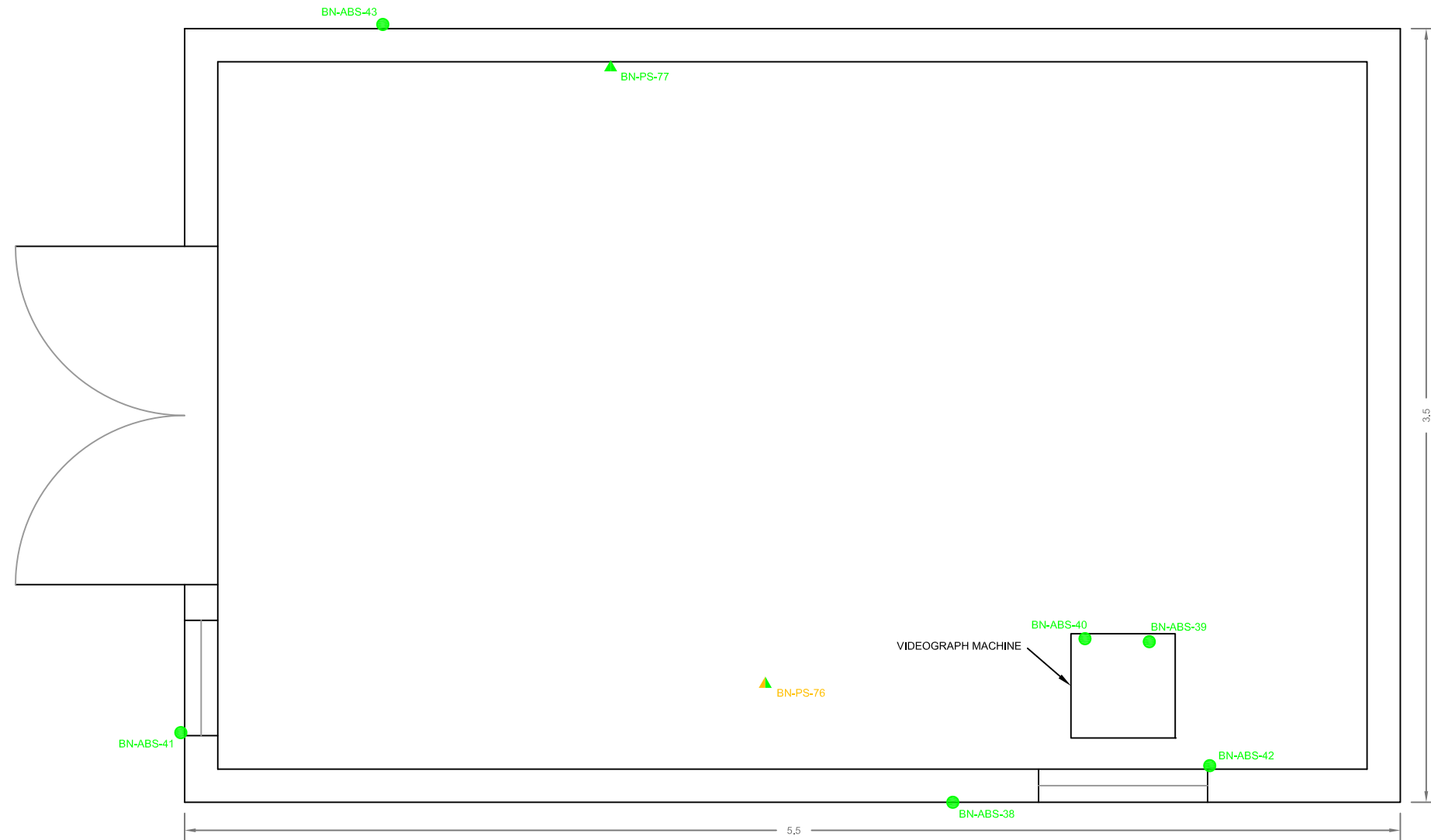
- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY
- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY
- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED OR RESULTS < 1% FOR ASBESTOS



NOTE:

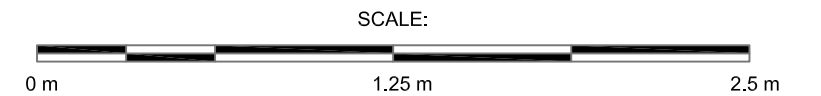
1. ALL DIMENSIONS ARE IN METRES.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
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 Public Works and Government Services Canada Travaux publics et Services gouvernementaux Canada	DWN BY:	PROJECT	DATE	
	 133 Crosbie Road St. John's, NL A1B 4A5 709-722-7023		HAZARDOUS BUILDING MATERIALS SURVEY BELLE ISLE NORTH LIGHTSTATION BELLE ISLE, NL	March 2013 PROJECT No. TF12076460
		CHK'D BY: J. Lundrigan	TITLE WINCH HOUSE SAMPLE LOCATION PLAN	REV. No. 0
		SCALE: As Shown	FIGURE No. 9	



LEGEND:

- ▲ PAINT SAMPLE LOCATION - NO CRITERIA EXCEEDANCES
- ▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY
- 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.
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709-722-7023



DWN BY:

H. Ryan

CHK'D BY:

J. Lundrigan

SCALE:

As Shown

PROJECT

HAZARDOUS BUILDING MATERIALS SURVEY
BELLE ISLE NORTH LIGHTSTATION
BELLE ISLE, NL

TITLE

VIDEOGRAPH BUILDING
SAMPLE LOCATION PLAN

DATE

March 2013

PROJECT No.

TF12076460

REV. No.

0

FIGURE No.

10

APPENDIX B

Photographic Record



Photo 1: View of the Belle Isle North Lightstation located on Belle Isle, NL.



Photo 2: Aerial View of the Belle Isle North Lower Landing Area, Belle Isle, NL.



Photo 3: View of grey rolled flooring sample BN-ASB-01.

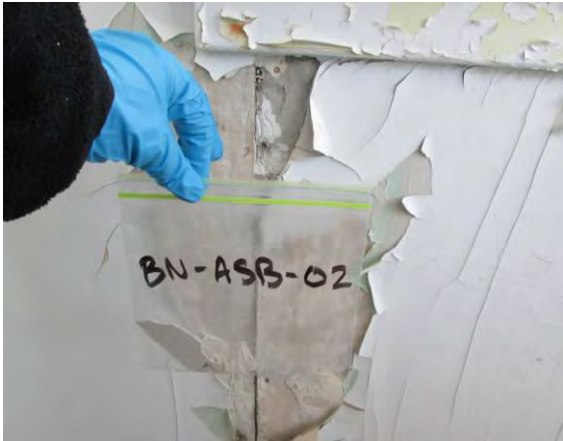


Photo 4: View of drywall joint compound sample BN-ASB-02.

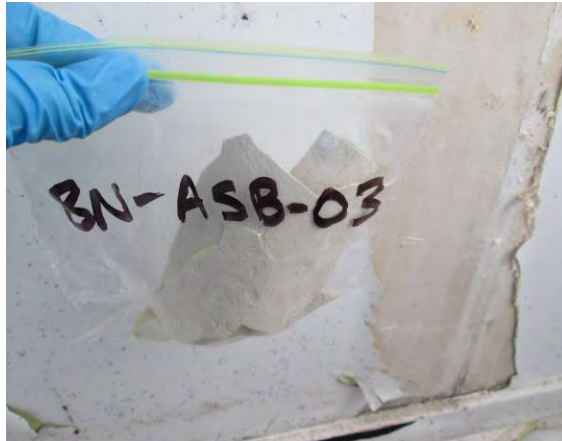


Photo 5: View of drywall joint compound sample BN-ASB-03.

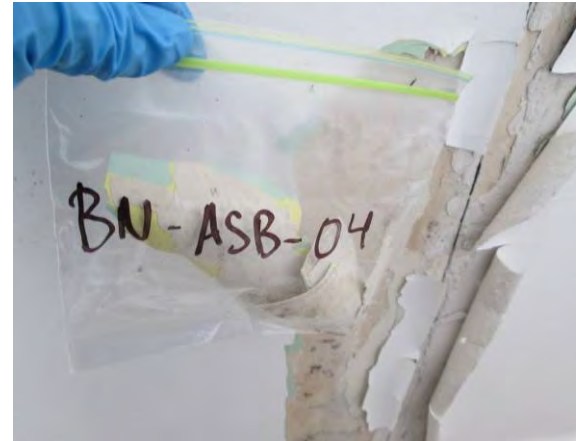


Photo 6: View of drywall joint compound sample BN-ASB-04.

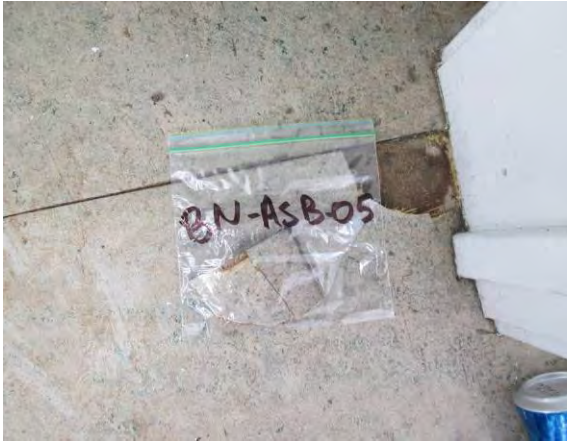


Photo 7: View of beige rolled flooring sample BN-ASB-05.



Photo 8: View of fibreboard sample BN-ASB-06.

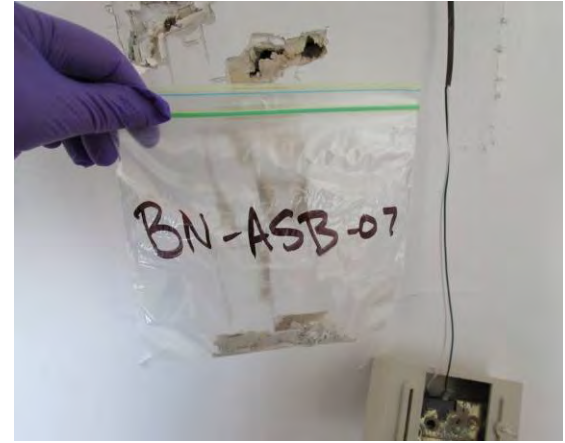


Photo 9: View of drywall joint compound sample BN-ASB-07.



Photo 10: View of green with flower print vinyl floor tile sample BN-ASB-08.

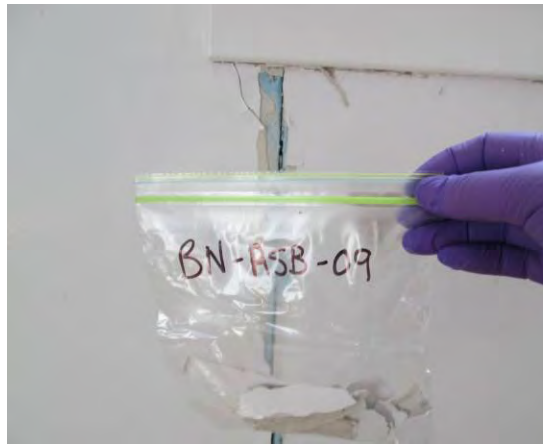


Photo 11: View of drywall joint compound sample BN-ASB-09.



Photo 12: View of brick mortar sample BN-ASB-10.



Photo 13: View of insulation with foil backing sample BN-ASB-11.



Photo 14: View of red asphalt shingle sample ARG-AS-12.



Photo 15: View of light grey caulking sample BN-ASB-13.

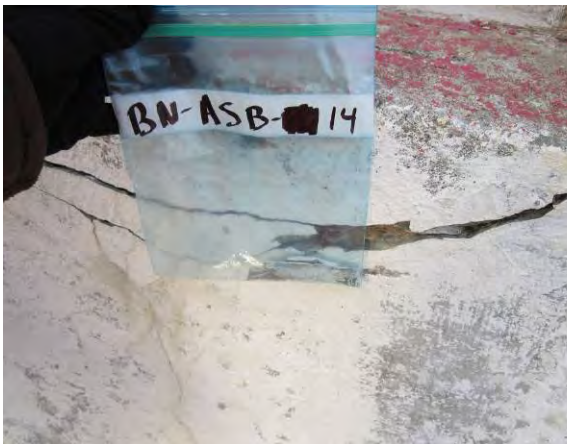


Photo 16: View of patching sample BN-ASB-14.



Photo 17: View of grey patching sample BN-ASB-15.



Photo 18: View of dark grey caulking from roof gutter sample BN-ASB-16.



Photo 19: View of red asphalt shingle sample BN-ASB-17.



Photo 20: View of grey wood panel flooring with mesh backing and grey adhesive sample BN-ASB-18.

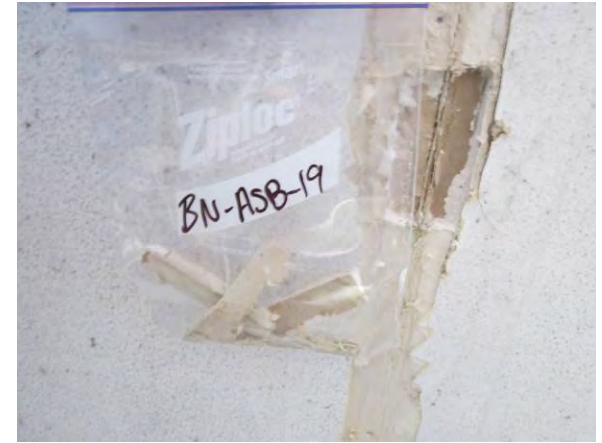


Photo 21: View of drywall joint compound BN-ASB-19.



Photo 22: View of pink fiberglass insulation with paper backing sample BN-ASB-20.



Photo 23: View of grey with green and white fleck vinyl floor tile sample BN-ASB-21.



Photo 24: View of black mastic sample BN-AS-22.



Photo 25: View of brown rolled flooring with mesh backing and adhesive sample BN-ASB-23.



Photo 26: View of grey mortar sample BN-ASB-24.



Photo 27: View of light green and beige vinyl floor tile with black mastic sample BN-ASB-25.



Photo 28: View of drywall joint compound and plaster sample BN-ASB-26.

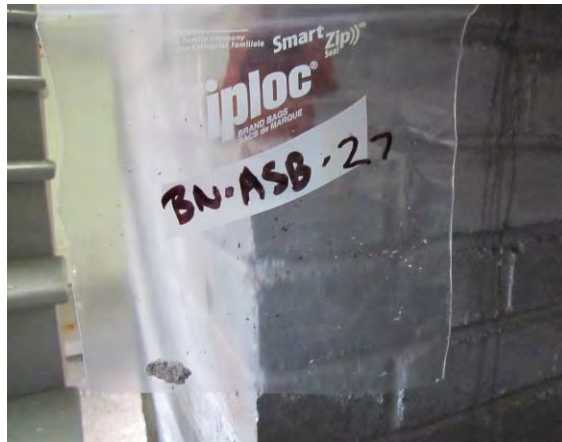


Photo 29: View of grey brick mortar sample BN-ASB-27.

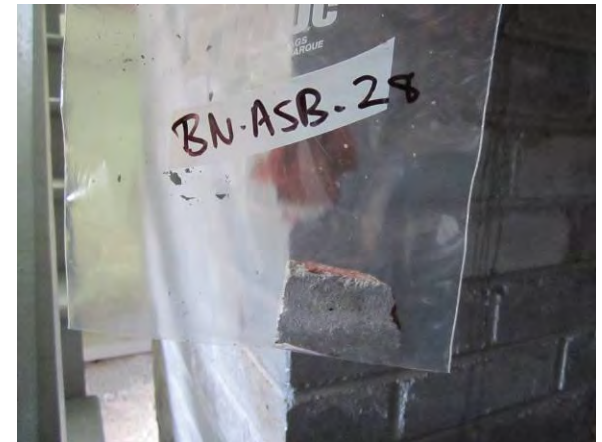


Photo 30: View of red painted brick sample BN-ASB-28.



Photo 31: View of grey fibreglass insulation sample BN-ASB-29.



Photo 32: View of grey/silver mortar sample BN-ASB-30.



Photo 33: View of drywall joint compound sample BN-ASB-31.



Photo 34: View of pink fibreglass insulation with paper backing sample BN-ASB-32.



Photo 35: View of black grout sample BN-ASB-33.



Photo 36: View of grey rolled flooring with paper backing sample BN-ASB-34.



Photo 37: View of red asphalt shingle with felt/paper backing sample BN-ASB-35.

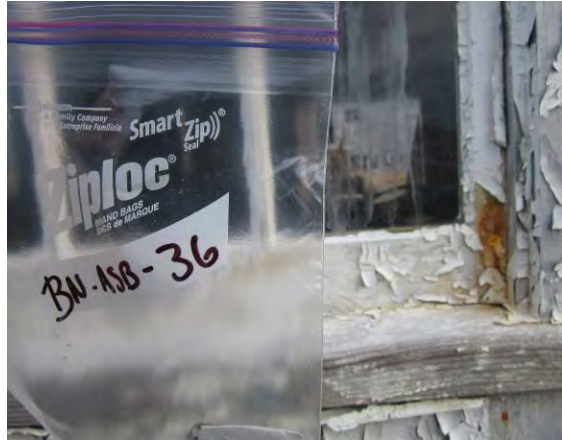


Photo 38: View of white window caulking sample BN-ASB-36.



Photo 39: View of red asphalt shingle with paper/felt backing sample BN-ASB-37.

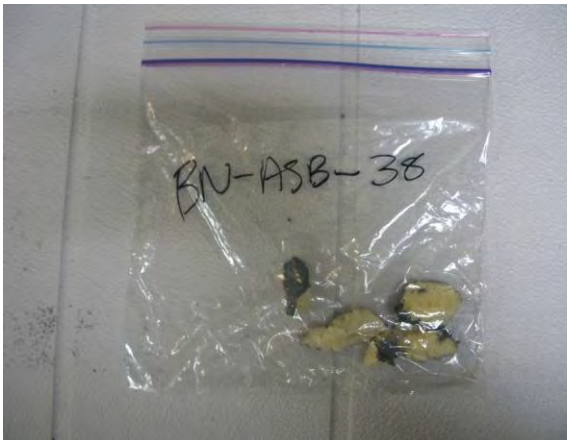


Photo 40: View of white insulation sample BN-ASB-38.

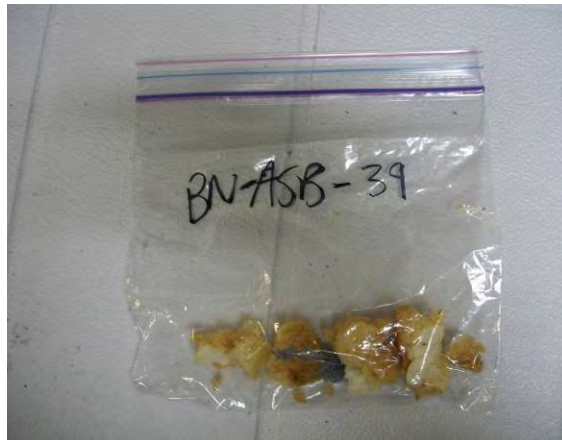


Photo 41: View of beige insulation sample BN-ASB-39.



Photo 42: View of black rubber sample BN-ASB-40.

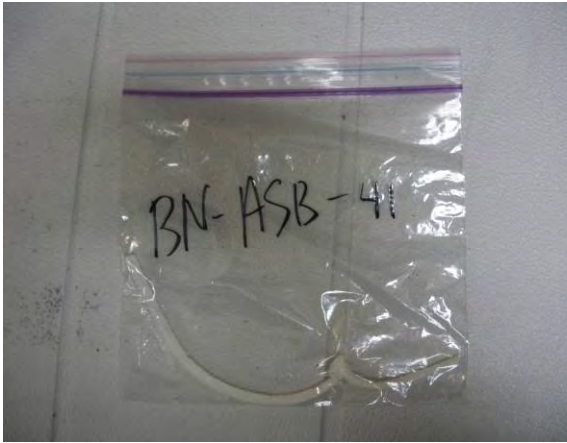


Photo 43: View of white caulking sample BN-ASB-41.

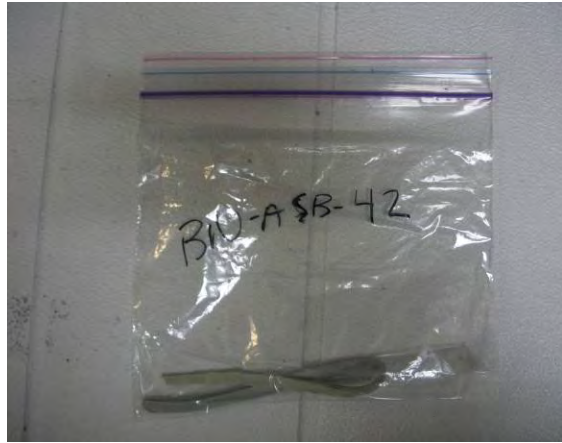


Photo 44: View of light grey caulking sample BN-ASB-42.



Photo 45: View of red/black asphalt shingle sample BN-ASB-43.

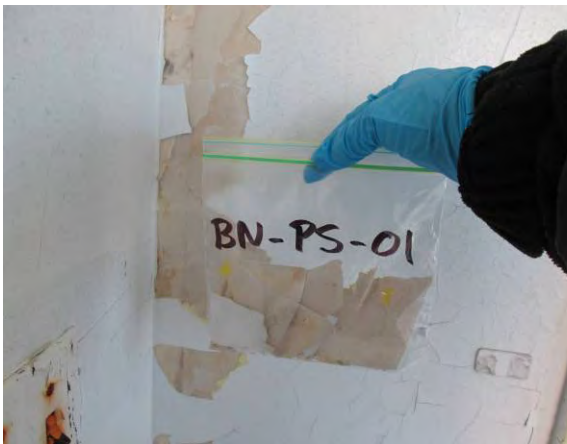


Photo 46: View of paint sample BN-PS-01.



Photo 47: View of paint sample BN-PS-02.



Photo 48: View of paint sample BN-PS-03.



Photo 49: View of paint sample BN-PS-04.

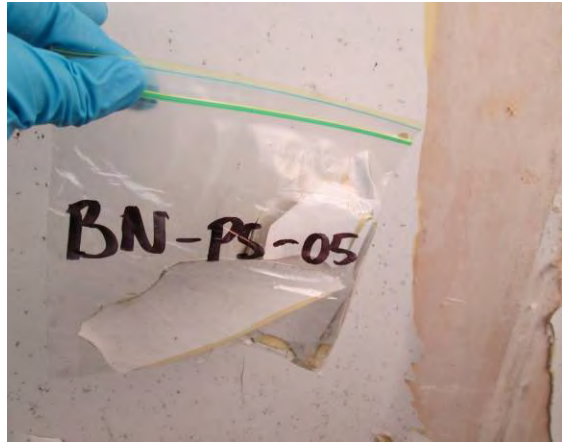


Photo 50: View of location of paint sample BN-PS-05.



Photo 51: View of paint sample BN-PS-06.

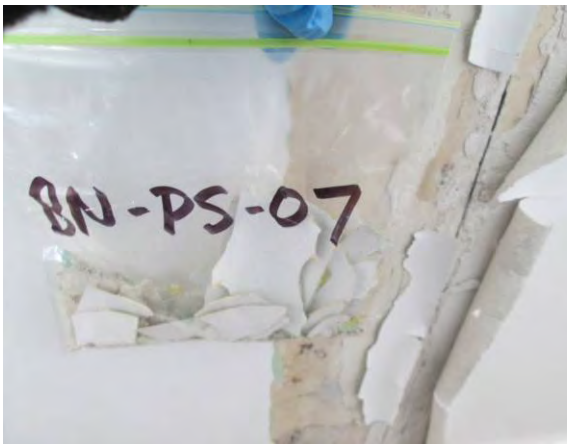


Photo 52: View of paint sample BN-PS-07.

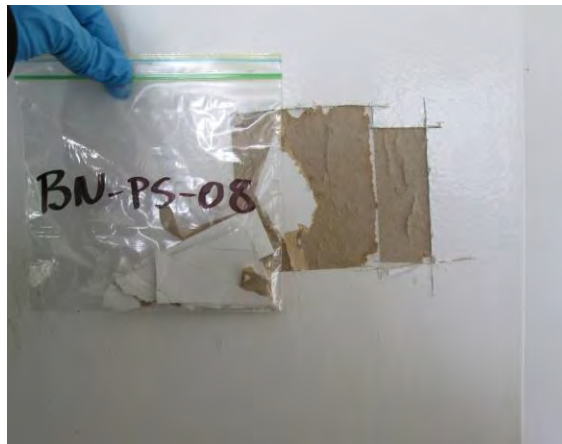


Photo 53: View of paint sample BN-PS-08.



Photo 54: View of paint sample BN-PS-09.

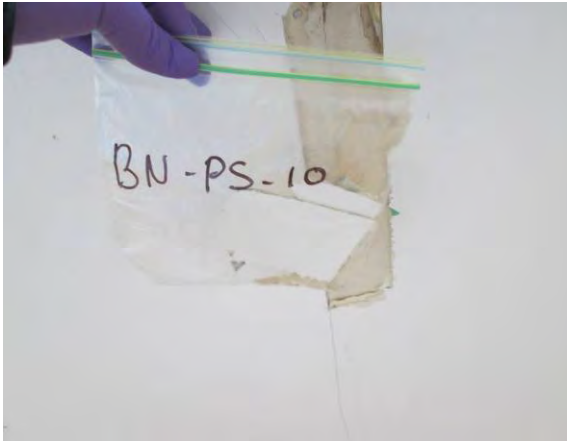


Photo 55: View of paint sample BN-PS-10.

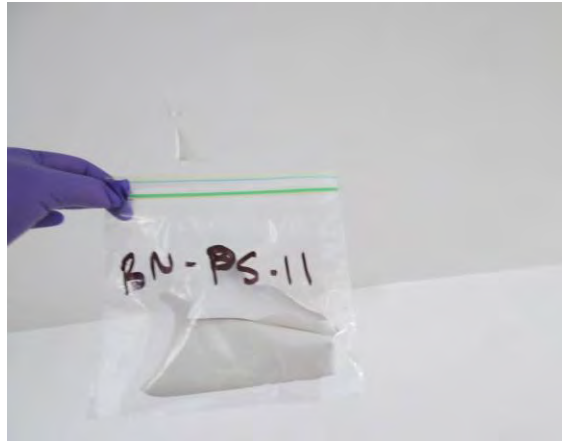


Photo 56: View of location of paint sample BN-PS-11.

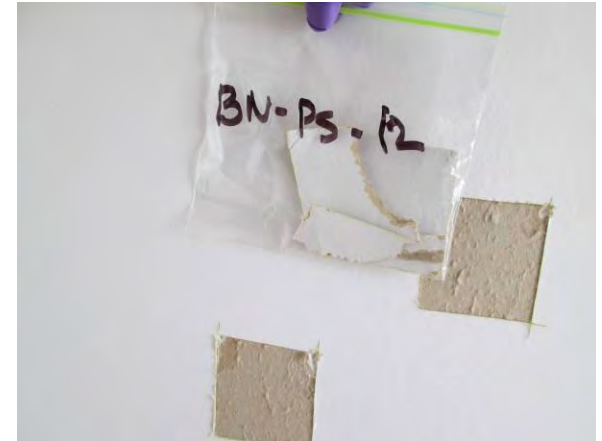


Photo 57: View of location of paint sample BN-PS-12.

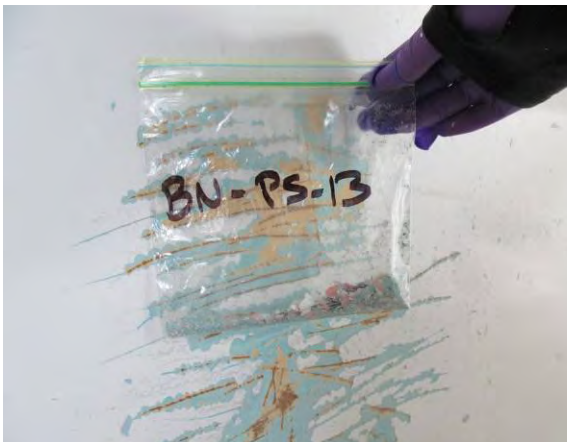


Photo 58: View of paint sample BN-PS-13.

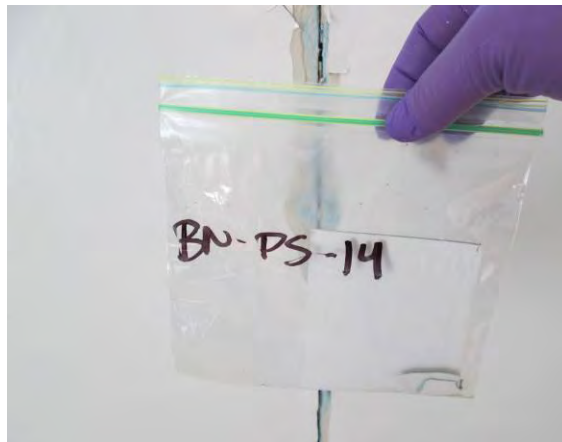


Photo 59: View of paint sample BN-PS-14.



Photo 60: View of paint sample BN-PS-15.

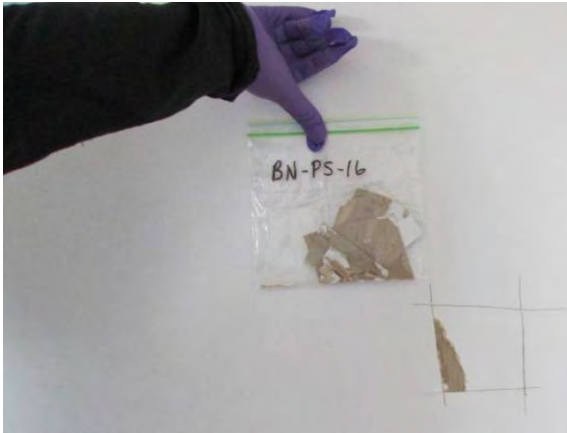


Photo 61: View of paint sample BN-PS-16.

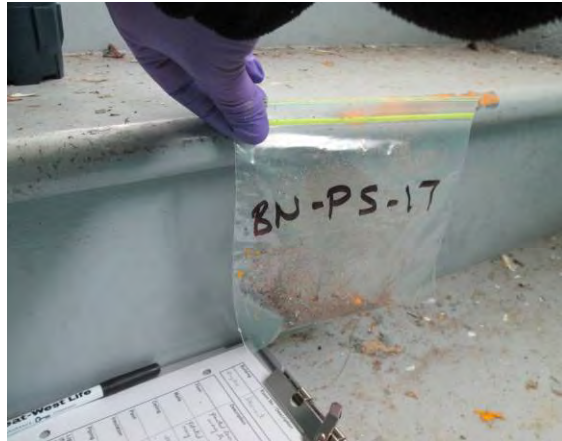


Photo 62: View of paint sample BN-PS-17.



Photo 63: View of paint sample BN-PS-18.

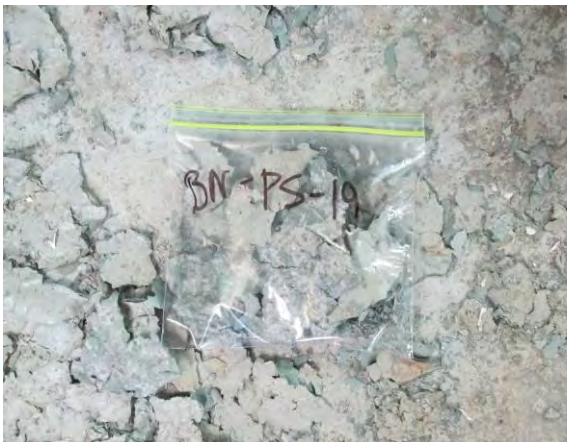


Photo 64: View of paint sample BN-PS-19.

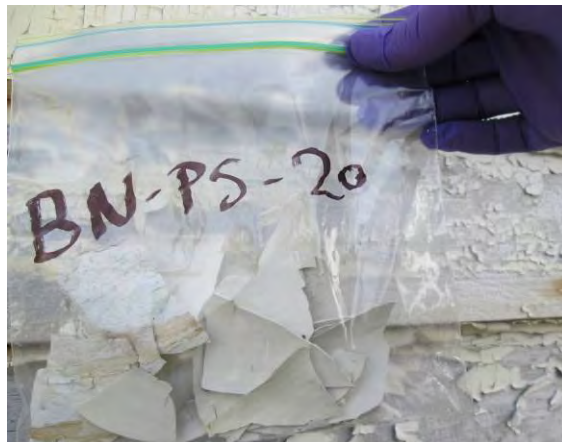


Photo 65: View of paint sample BN-PS-20.



Photo 66: View of paint sample BN-PS-21.



Photo 67: View of paint sample BN-PS-22.



Photo 68: View of paint sample BN-PS-23.



Photo 69: View of paint sample BN-PS-24.

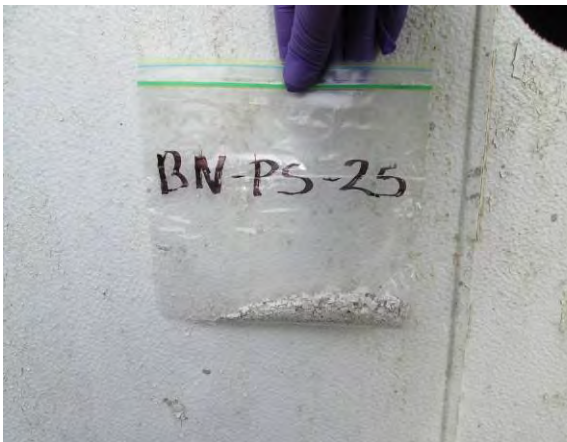


Photo 70: View of paint sample BN-PS-25.



Photo 71: View of paint sample BN-PS-26.



Photo 72: View of paint sample BN-PS-27.



Photo 73: View of paint sample BN-PS-28.

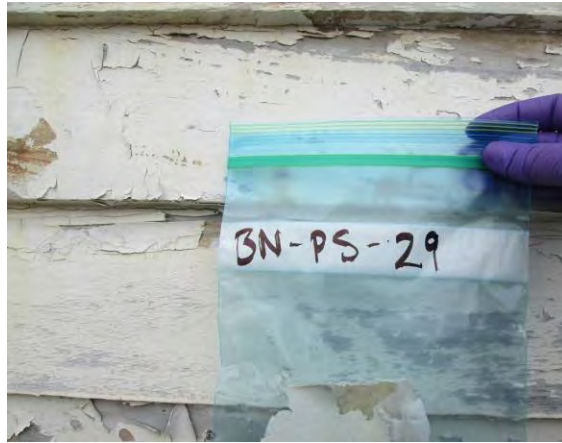


Photo 74: View of paint sample BN-PS-29.

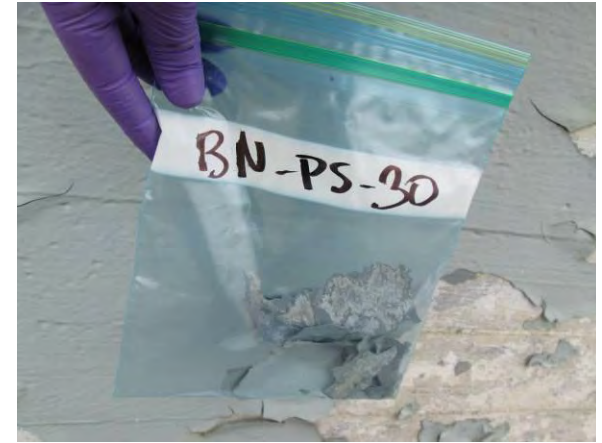


Photo 75: View of paint sample BN-PS-30.



Photo 76: View of paint sample BN-PS-31.



Photo 77: View of paint sample BN-PS-32.



Photo 78: View of paint sample BN-PS-33.



Photo 79: View of paint sample BN-PS-34.

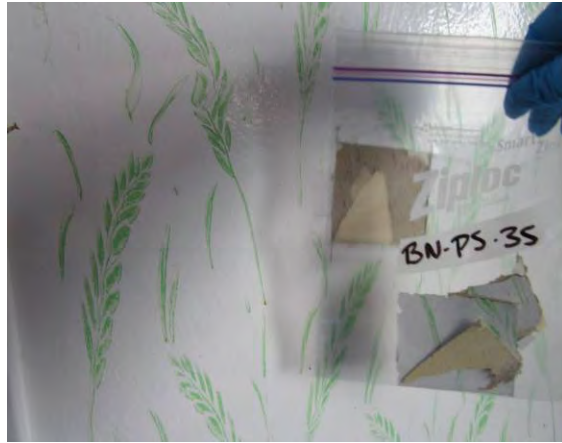


Photo 80: View of paint sample BN-PS-35.



Photo 81: View of paint sample BN-PS-36.

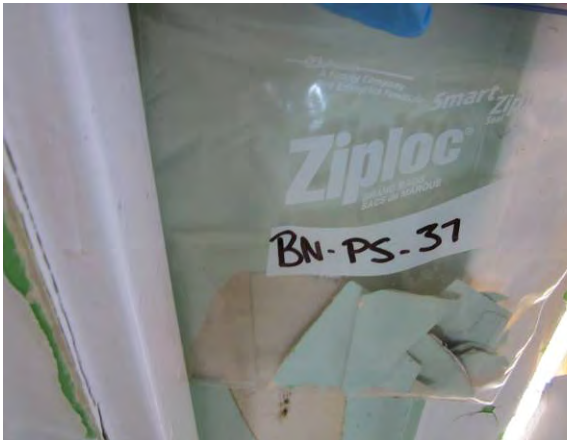


Photo 82: View of paint sample BN-PS-37.

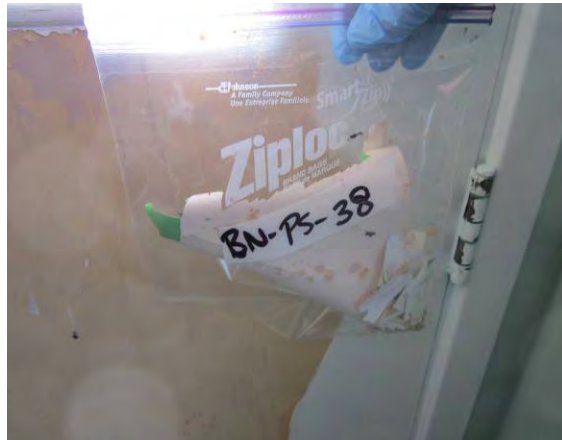


Photo 83: View of paint sample BN-PS-38.



Photo 84: View of paint sample BN-PS-39.

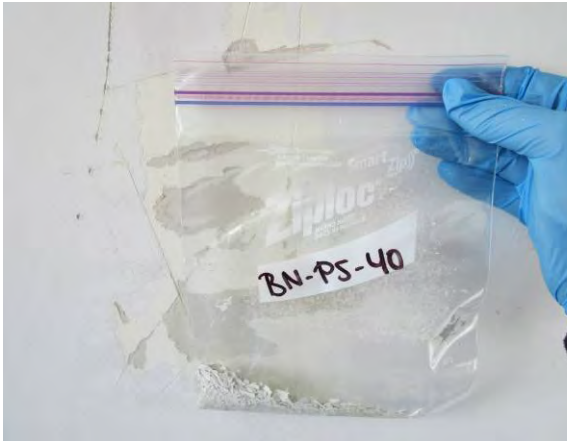


Photo 85: View of paint sample BN-PS-40.



Photo 86: View of paint sample BN-PS-41.

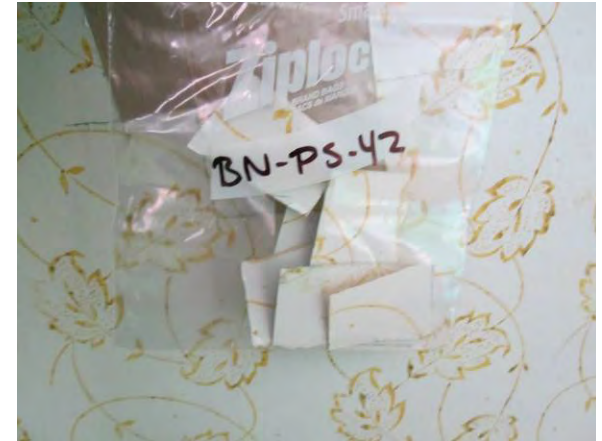


Photo 87: View of paint sample BN-PS-42.



Photo 88: View of paint sample BN-PS-43.



Photo 89: View of paint sample BN-PS-44.



Photo 90: View of paint sample BN-PS-45.



Photo 91: View of paint sample BN-PS-46.

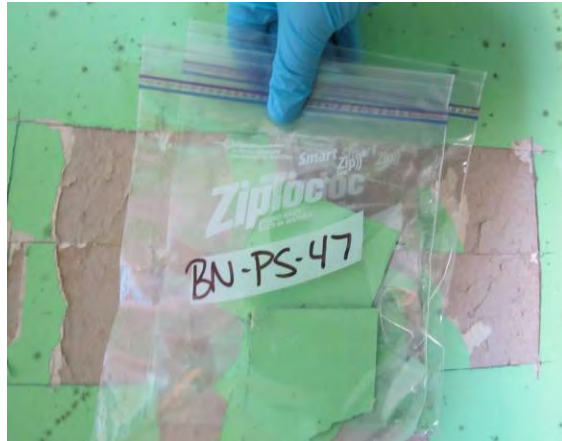


Photo 92: View of paint sample BN-PS-47.



Photo 93: View of paint sample BN-PS-48.

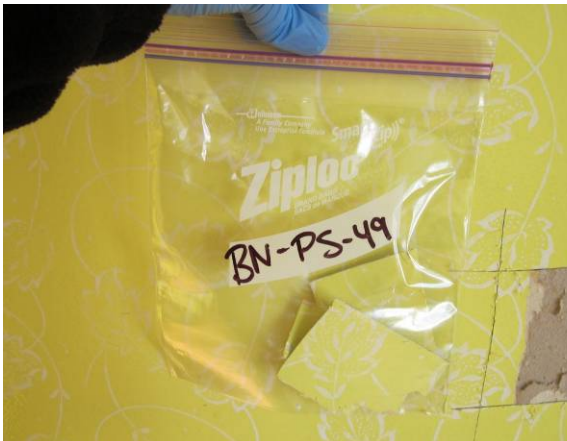


Photo 94: View of paint sample BN-PS-49.



Photo 95: View of paint sample BN-PS-50.



Photo 96: View of paint sample BN-PS-51.

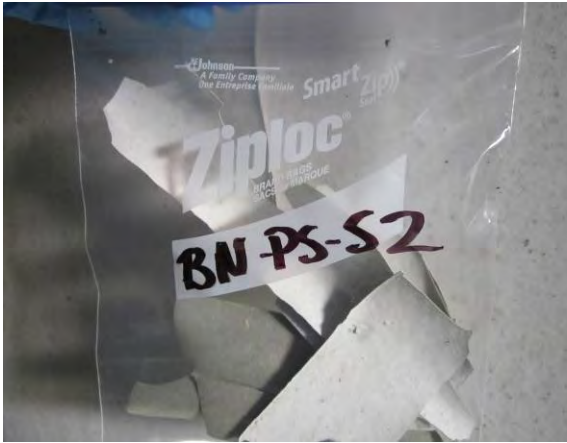


Photo 97: View of paint sample BN-PS-52.



Photo 98: View of paint sample BN-PS-53.

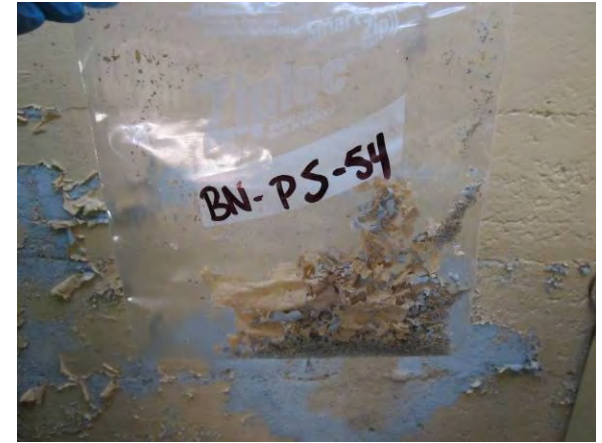


Photo 99: View of paint sample BN-PS-54.



Photo 100: View of paint sample BN-PS-55.



Photo 101: View of paint sample BN-PS-56.



Photo 102: View of paint sample BN-PS-57.



Photo 103: View of paint sample BN-PS-58.



Photo 104: View of paint sample BN-PS-59.



Photo 105: View of paint sample BN-PS-60.

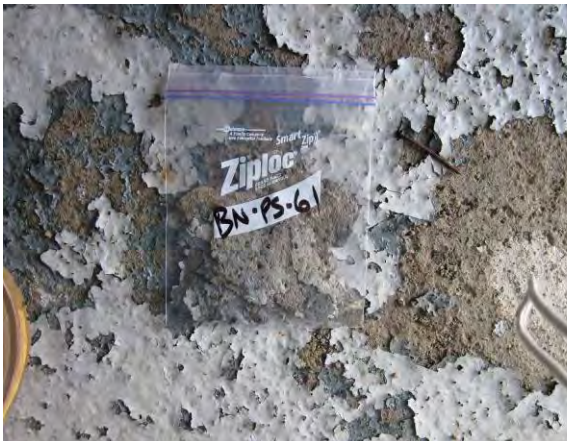


Photo 106: View of paint sample BN-PS-61.

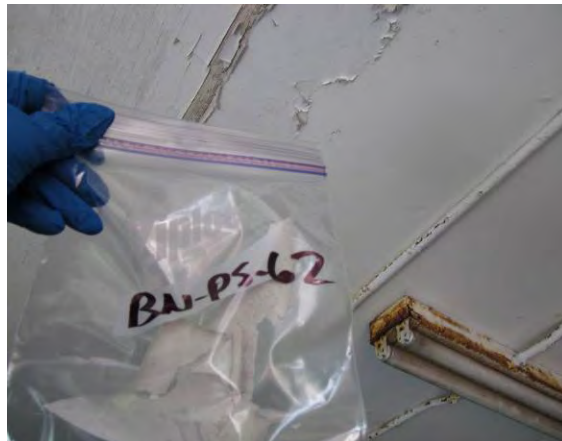


Photo 107: View of paint sample BN-PS-62.

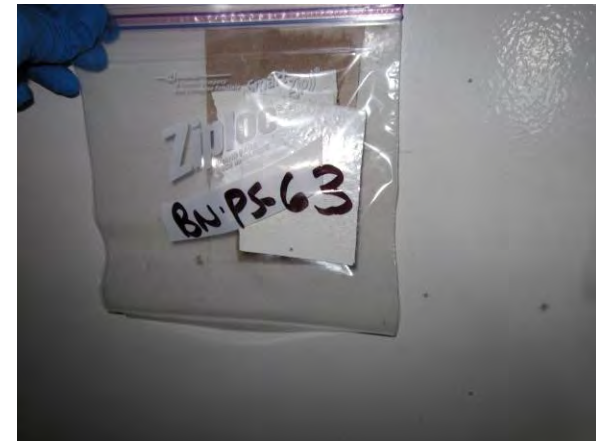


Photo 108: View of paint sample BN-PS-63.



Photo 109: View of paint sample BN-PS-64.



Photo 110: View of paint sample BN-PS-65.



Photo 111: View of paint sample BN-PS-66.



Photo 112: View of paint sample BN-PS-67.



Photo 113: View of paint sample BN-PS-68.



Photo 114: View of paint sample BN-PS-69.

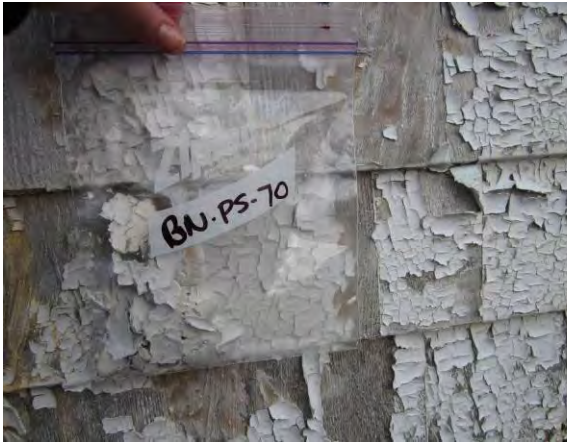


Photo 115: View of paint sample BN-PS-70.



Photo 116: View of paint sample BN-PS-71.



Photo 117: View of paint sample BN-PS-72.



Photo 118: View of paint sample BN-PS-73.



Photo 119: View of paint sample BN-PS-74.



Photo 120: View of paint sample BN-PS-75.

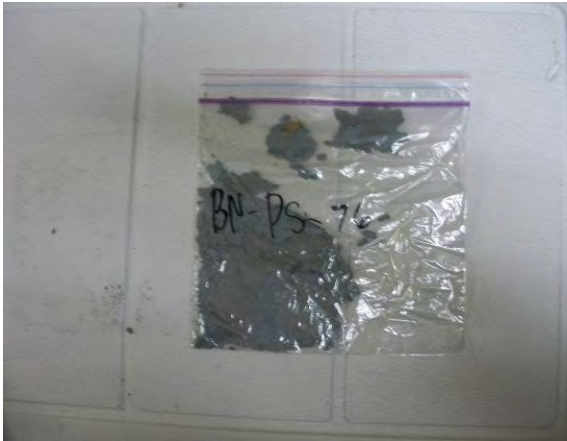


Photo 121: View of paint sample BN-PS-76.

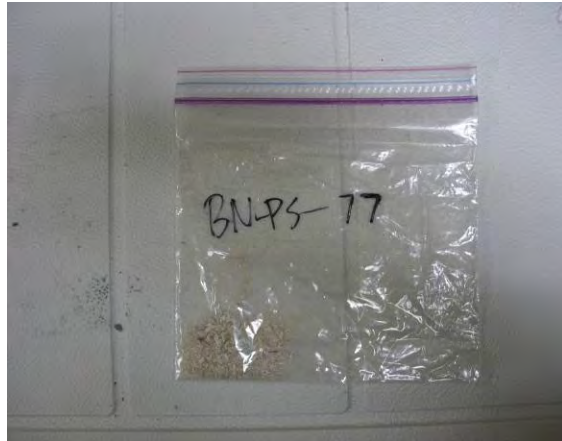


Photo 122: View of paint sample BN-PS-77.



Photo 123: View of mould growth on cabinets in duplex kitchen.



Photo 124: View of mould growth on ceiling in single dwelling bedroom #1.



Photo 125: View of mould growth on walls in equipment building.



Photo 126: View of mould growth on walls, ceiling and floor in generator building.



Photo 127: View of mould sample BN-MD-01.

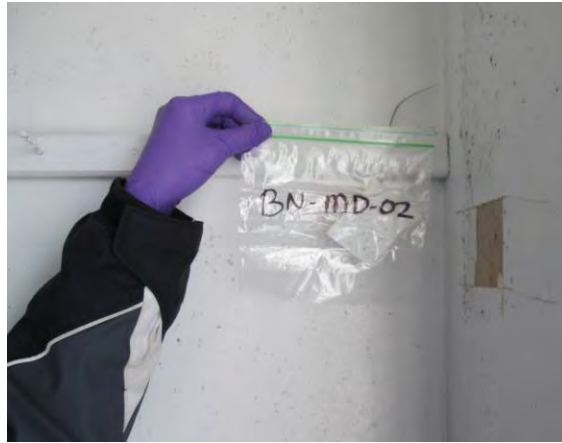


Photo 128: View of mould sample BN-MD-02.



Photo 129: View of mould sample BN-MD-03.



Photo 130: View of mould sample BN-MD-04.



Photo 131: View of mould sample BN-MD-05.



Photo 132: View of mould sample BN-MD-06.

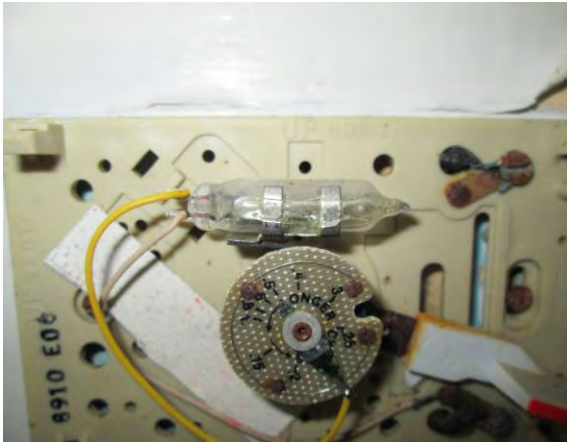


Photo 133: View of mercury tube in White-Rogers rectangular thermostat.



Photo 134: View of mercury tube in beige Honeywell rectangular thermostat.



Photo 135: View of thermostat in equipment building.



Photo 136: View of thermostat in generator building.



Photo 137: View of CGE Gold Label light ballast in equipment building.



Photo 138: View of fire extinguisher in duplex basement.



Photo 139: View of waste materials on-Site.



Photo 140: View of waste materials on-Site.



Photo 141: View of abandoned ASTs on-Site.

APPENDIX C

Sample and Analytical Summary Tables

Table C-1: Asbestos Sample Descriptions and Analytical Results

Sample ID	Material (Layer) Analyzed	Detailed Material Description	AMEC Rm #	Analytical Result
BN-ASB-01	Grey Rolled Flooring	Grey rolled flooring.	Duplex Front Porch	ND
BN-ASB-02	Drywall Joint Compound	Drywall joint compound.	Duplex Front Porch	ND
BN-ASB-03	Drywall Joint Compound	Drywall joint compound.	Duplex Back Porch	3.0% Chrysotile
BN-ASB-04	Drywall Joint Compound	Drywall joint compound.	Duplex Pantry	2.0% Chrysotile
BN-ASB-05	Rolled Flooring	Beige with green and brown whirl rolled flooring.	Duplex Pantry	ND
BN-ASB-06	Fibreboard	Fibreboard.	Duplex Kitchen	ND
BN-ASB-07	Drywall Joint Compound	Drywall joint compound.	Duplex Living Room	ND
BN-ASB-08	Vinyl Floor Tile	Green with flower print vinyl floor tile.	Duplex Washroom	ND
BN-ASB-09	Drywall Joint Compound	Drywall joint compound.	Duplex Bedroom # 1	ND
BN-ASB-10	Mortar	Brick mortar.	Duplex Basement	ND
BN-ASB-11	Insulation	Insulation with foil backing collected from furnace.	Duplex Basement	ND
BN-ASB-12	Asphalt Shingle	Red asphalt shingle.	Duplex Exterior	ND
BN-ASB-13	Caulking	Light grey caulking around pipe.	Duplex Exterior	0.26% Chrysotile
BN-ASB-14	Plaster	Plaster on concrete.	Light Tower Exterior	ND
BN-ASB-15	Patching	Grey patching on concrete.	Light Tower Exterior	ND
BN-ASB-16	Caulking	Dark grey caulking on roof gutter.	Single Dwelling Exterior	3.4% Chrysotile
BN-ASB-17	Asphalt Shingle	Red asphalt shingle with black paper.	Single Dwelling Exterior	<0.25% Chrysotile
BN-ASB-18	Panel Flooring	Grey wood panel flooring with mesh backing and grey adhesive.	Single Dwelling Porch 1	ND

Notes:

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 C-1: Asbestos Sample Descriptions and Analytical Results (Continued)

Sample ID	Material (Layer) Analyzed	Detailed Material Description	AMEC Rm #	Analytical Result
BN-ASB-19	Drywall Plaster and Caulking	White drywall plaster and caulking	Single Dwelling Porch 1	0.34% Chrysotile
BN-ASB-20	Insulation with Paper Backing	Pink fibreglass insulation with paper backing.	Single Dwelling Living Room	ND
BN-ASB-21	Vinyl Floor Tile	Grey with green and white fleck vinyl floor tile (12" x 12") with black mastic.	Single Dwelling Kitchen	1.3% Chrysotile
BN-ASB-22	Mastic	Mastic on countertop.	Single Dwelling Kitchen	<0.25% Chrysotile
BN-ASB-23	Flooring	Brown rolled flooring with mesh and black adhesive.	Single Dwelling Kitchen	ND
BN-ASB-24	Mortar	Grey mortar on wall around pipe from oven.	Single Dwelling Kitchen	3% Chrysotile
BN-ASB-25	Vinyl Floor Tile	Light green and beige vinyl floor tile with black mastic.	Single Dwelling Washroom	ND
BN-ASB-26	Drywall Joint Compound	Drywall joint compound and plaster.	Single Dwelling Bedroom # 3	2% Chrysotile
BN-ASB-27	Mortar	Grey brick mortar.	Single Dwelling Basement	ND
BN-ASB-28	Brick	Red brick.	Single Dwelling Basement	ND
BN-ASB-29	Insulation with Paper Backing	Grey insulation with foil backing collected from furnace.	Single Dwelling Basement	ND
BN-ASB-30	Mortar	Grey/silver mortar.	Light Tower Interior	ND
BN-ASB-31	Drywall Joint Compound	Drywall joint compound.	Equipment Building Room # 1	ND
BN-ASB-32	Insulation with Paper Backing	Pink fibreglass insulation with paper backing.	Equipment Building Room # 1	ND
BN-ASB-33	Grout	Black grout between floor boards.	Generator Building Interior	0.86% Chrysotile
BN-ASB-34	Flooring	Rolled grey flooring with paper backing.	Generator Building Interior	ND
BN-ASB-35	Asphalt Shingle	Red asphalt shingle with paper/felt backing.	Storage Shed # 2 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 C-1: Asbestos Sample Descriptions and Analytical Results (Continued)

Sample ID	Material (Layer) Analyzed	Detailed Material Description	AMEC Rm #	Analytical Result
BN-ASB-36	Caulking	White caulking.	Storage Shed # 2 Exterior	ND
BN-ASB-37	Asphalt Shingle	Red asphalt shingle with paper/felt backing.	Winch House Exterior	0.26% Chrysotile
BN-ASB-38	Foam insulation	White foam insulation around electrical conduit.	Videograph Building Interior	ND
BN-ASB-39	Foam insulation	Beige foam insulation on videograph machine.	Videograph Building Interior	ND
BN-ASB-40	Rubber Coating	Black rubbering.	Videograph Building Interior	ND
BN-ASB-41	Caulking	White caulking.	Videograph Building Exterior	ND
BN-ASB-42	Caulking	Light grey caulking.	Videograph Building Exterior	ND
BN-ASB-43	Asphalt shingle	Red/black asphalt shingle.	Videograph Building Exterior	ND
BN-ASB-DUP1	Drywall Joint Compound	Drywall joint compound.	Duplex Pantry	3% Chrysotile
BN-ASB-DUP2	Panel Flooring	Grey wood panel flooring with mesh backing and grey adhesive.	Single Dwelling Porch 1	ND
BN-ASB-DUP3	Mortar	Grey mortar on wall around pipe from oven.	Single Dwelling Kitchen	2% Chrysotile
BN-ASB-DUP4	Asphalt Shingle	Red asphalt shingle with paper/felt backing.	Storage Shed # 2	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)

BN-ASB-DUP1 is a duplicate of BN-ASB-04

BN-ASB-DUP2 is a duplicate of BN-ASB-18

BN-ASB-DUP3 is a duplicate of BN-ASB-24

BN-ASB-DUP4 is a duplicate of BN-ASB-35



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

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	Sent for Analysis (Yes/No)	RDL (mg/kg)	Total Lead (mg/kg)
BN-PS-01	White over light green over yellow over tan	Drywall	Duplex Front Porch	Yes	5.0	1,900
BN-PS-02	White over black over yellow/green over tan	Wooden baseboard	Duplex Front Porch	Yes	5.0	2,700
BN-PS-03	White over yellow over tan	Wood door	Duplex Front Porch	Yes	5.0	3,900
BN-PS-04	White over blue over light blue over green over tan	Drywall	Duplex Hallway 1st Floor	Yes	5.0	1,200
BN-PS-05	White over yellow over light yellow over tan	Drywall	Duplex Back Porch	Yes	5.0	3,600
BN-PS-06	White over beige over yellow over tan over grey	Wood door	Duplex Back Porch	Yes	5.0	1,300
BN-PS-07	White over light green over yellow	Drywall	Duplex Pantry	Yes	5.0	3,300
BN-PS-08	White over tan over yellow over green	Drywall	Duplex Kitchen	Yes	5.0	770
BN-PS-09	Dark green over white over yellow over light green over yellow	Wood door	Duplex Kitchen	Yes	5.0	6,500
BN-PS-10	White over green/blue over beige	Drywall	Duplex Living Room	Yes	5.0	1,400
BN-PS-11	White	Drywall	Duplex Living Room	Yes	5.0	1,000
BN-PS-12	White over yellow over light yellow	Drywall	Duplex Hallway 2nd Floor	Yes	5.0	1,700
BN-PS-13	White over beige	Drywall	Duplex Washroom	Yes	5.0	20,000
BN-PS-14	White over light green over blue	Drywall	Duplex Bedroom # 1	Yes	5.0	470
BN-PS-15	White over aqua over blue	Drywall	Duplex Bedroom # 2	Yes	5.0	4,700
BN-PS-16	White over light blue over pink	Drywall	Duplex Bedroom # 3	Yes	5.0	1,500
BN-PS-17	Multiple layers of grey over yellow/orange over red	Wood	Duplex Basement	Yes	5.0	12,000
BN-PS-18	Multiple layers of green over light green over grey over red	Concrete	Duplex Basement	Yes	5.0	4,100

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 C-2: Paint Sample Descriptions and Lead Analytical Results (Continued)

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	Sent for Analysis (Yes/No)	RDL (mg/kg)	Total Lead (mg/kg)
BN-PS-19	Multiple layers of grey	Concrete	Duplex Basement	Yes	5.0	730
BN-PS-20	White	Wood	Duplex Exterior	Yes	5.0	8,900
BN-PS-21	Multiple layers of grey	Concrete	Duplex Exterior	Yes	5.0	1,700
BN-PS-22	Multiple layers of grey over green	Wood	Duplex Exterior	Yes	5.0	4,500
BN-PS-23	White over grey	Wood	Small Shed	Yes	5.0	2,200
BN-PS-24	Red	Metal	Generator Building Exterior	Yes	5.0	2,700
BN-PS-25	White	Metal	Generator Building Exterior	Yes	5.0	1,000
BN-PS-26	White	Wood	Equipment Building Exterior	Yes	5.0	4,000
BN-PS-27	Multiple layers of grey	Concrete	Equipment Building Exterior	Yes	5.0	1,600
BN-PS-28	Red over white	Wood	Equipment Building Exterior	Yes	5.0	16,000
BN-PS-29	Multiple layers of white	Wood	Single Dwelling Exterior	Yes	5.0	2,500
BN-PS-30	Multiple layers of grey	Concrete	Single Dwelling Exterior	Yes	5.0	2,200
BN-PS-31	Red over orange over red	Wood	Single Dwelling Exterior	Yes	5.0	12,000
BN-PS-32	Red	Wood	Duplex Exterior	Yes	5.0	14,000
BN-PS-33	Orange over tan over light yellow over light green over white	Drywall	Single Dwelling Porch # 1	Yes	5.0	3,600
BN-PS-34	White	Drywall	Single Dwelling Living Room	Yes	5.0	850
BN-PS-35	White over beige over green	Drywall	Single Dwelling Living Room	Yes	5.0	2,500
BN-PS-36	Blue over light green over yellow over white over dark red	Drywall	Single Dwelling Kitchen	Yes	5.0	5,500

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 C-2: Paint Sample Descriptions and Lead Analytical Results (Continued)

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	Sent for Analysis (Yes/No)	RDL (mg/kg)	Total Lead (mg/kg)
BN-PS-37	Green over dark green over tan over beige	Drywall	Single Dwelling Porch # 2	Yes	5.0	7,900
BN-PS-38	White over green over tan over dark tan	Drywall	Single Dwelling Porch # 2	Yes	5.0	1,900
BN-PS-39	Light blue over blue over yellow over beige	Wood panel	Single Dwelling Washroom	Yes	5.0	2,300
BN-PS-40	White over beige	Drywall	Single Dwelling Washroom	Yes	5.0	2,000
BN-PS-41	Green over yellow over blue over grey	Drywall	Single Dwelling Bedroom # 1	Yes	5.0	2,900
BN-PS-42	White with yellow pattern over light green over blue over beige	Drywall	Single Dwelling Bedroom # 1	Yes	5.0	2,800
BN-PS-43	White with yellow pattern over light green over blue	Drywall	Single Dwelling Bedroom # 1	Yes	5.0	2,000
BN-PS-44	Beige over light beige over light brown	Drywall	Single Dwelling Bedroom # 2	Yes	5.0	2,500
BN-PS-45	White with yellow pattern over pink over beige	Drywall	Single Dwelling Bedroom # 2	Yes	5.0	2,000
BN-PS-46	White over beige	Drywall	Single Dwelling Hallway	Yes	5.0	3,800
BN-PS-47	Green over blue over white	Drywall	Single Dwelling Bedroom # 3	Yes	5.0	1,400
BN-PS-48	White over light green over dark green	Drywall	Single Dwelling Bedroom # 3	Yes	5.0	1,300
BN-PS-49	Yellow with white pattern over green over beige	Drywall	Single Dwelling Bedroom # 4	Yes	5.0	3,000
BN-PS-50	Yellow over green over white	Drywall	Single Dwelling Bedroom # 4	Yes	5.0	2,600
BN-PS-51	Multiple layers of grey	Concrete	Single Dwelling Basement	Yes	5.0	1,800
BN-PS-52	White over multiple layers of grey	Drywall	Single Dwelling Basement	Yes	5.0	18,000
BN-PS-53	Grey over green over white	Concrete	Single Dwelling Basement	Yes	5.0	2,600
BN-PS-54	Yellow over grey	Concrete	Single Dwelling Basement	Yes	5.0	4,600

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 C-2: Paint Sample Descriptions and Lead Analytical Results (Continued)

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	Sent for Analysis (Yes/No)	RDL (mg/kg)	Total Lead (mg/kg)
BN-PS-55	Grey over blue over orange over red	Wood	Single Dwelling Basement	Yes	5.0	26,000
BN-PS-56	Grey over red over dark red over grey	Concrete	Light Tower Interior	Yes	5.0	32,000
BN-PS-57	Red over green over dark green	Metal staircase	Light Tower Interior	Yes	5.0	3,800
BN-PS-58	Grey over red over over brown over white	Metal post	Light Tower Interior	Yes	5.0	290
BN-PS-59	Beige over dark beige	Concrete	Light Tower Interior	Yes	5.0	49,000
BN-PS-60	Light green over white	Drywall	Equipment Building Room # 1	Yes	5.0	1,900
BN-PS-61	Multiple layers of grey	Concrete	Equipment Building Room # 1	Yes	5.0	2,500
BN-PS-62	White	Wood panel	Equipment Building Room # 1	Yes	5.0	690
BN-PS-63	White	Drywall	Equipment Building Room # 2	Yes	5.0	440
BN-PS-64	Multiple layers of grey	Wood	Generator Building Interior	Yes	5.0	2,400
BN-PS-65	White	Wood panel	Generator Building Interior	Yes	5.0	600
BN-PS-66	Multiple layers of white	Wood Siding	Storage Shed Exterior	Yes	5.0	37,000
BN-PS-67	Multiple layers of grey	Concrete	Storage Shed # 2 Exterior	Yes	5.0	800
BN-PS-68	White over red over grey	Wood	Storage Shed # 2 Exterior	Yes	5.0	17,000
BN-PS-69	White over red over dark grey	Wood	Storage Shed # 2 Exterior	Yes	5.0	11,000
BN-PS-70	Multiple layers of white	Wood	Winch House Exterior	Yes	5.0	28,000
BN-PS-71	Red over grey	Wood	Winch House Exterior	Yes	5.0	21,000
BN-PS-72	Multiple layers of grey	Concrete	Winch House Exterior	Yes	5.0	2,700

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 C-2: Paint Sample Descriptions and Lead Analytical Results (Continued)

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	Sent for Analysis (Yes/No)	RDL (mg/kg)	Total Lead (mg/kg)
BN-PS-73	Multiple layers of grey over red over white	Wood	Winch House Interior	Yes	5.0	17,000
BN-PS-74	Multiple layers of grey over red	Concrete	Winch House Interior	Yes	5.0	1,800
BN-PS-75	Green over orange	Metal	Winch House Interior	Yes	5.0	3,500
BN-PS-76	Multiple layers of grey	Concrete	Videograph Building Interior	Yes	5.0	100
BN-PS-77	Off-white	Wood	Videograph Building Interior	Yes	5.0	45
BN-PS-DUP1	White	Wood	Duplex Exterior	Yes	5.0	18,000
BN-PS-DUP2	Green over blue over white	Drywall	Single Dwelling Bedroom # 3	Yes	5.0	1,100
BN-PS-DUP3	Beige over dark beige	Concrete	Light Tower Interior	Yes	5.0	25,000
BN-PS-DUP4	Grey over red over dark red over grey	Concrete	Light Tower Interior	Yes	5.0	27,000
BN-PS-DUP5	Multiple layers of grey	Concrete	Videograph Building Interior	Yes	5.0	100

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

BN-PS-DUP1 is a duplicate of BN-PS-20

BN-PS-DUP2 is a duplicate of BN-PS-47

BN-PS-DUP3 is a duplicate of BN-PS-59

BN-PS-DUP4 is a duplicate of BN-PS-56

BN-PS-DUP5 is a duplicate of BN-PS-76



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

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	Sent for Analysis (Yes/No)	RDL (mg/kg)	Total Mercury (mg/kg)
BN-PS-01	White over light green over yellow over tan	Drywall	Duplex Front Porch	Yes	1.0	4.4
BN-PS-02	White over black over yellow/green over tan	Wooden baseboard	Duplex Front Porch	Yes	1.0	2.6
BN-PS-03	White over yellow over tan	Wood door	Duplex Front Porch	Yes	1.0	5.0
BN-PS-04	White over blue over light blue over green over tan	Drywall	Duplex Hallway 1st Floor	Yes	1.0	1.4
BN-PS-05	White over yellow over light yellow over tan	Drywall	Duplex Back Porch	Yes	1.0	4.0
BN-PS-06	White over beige over yellow over tan over grey	Wood door	Duplex Back Porch	Yes	1.0	1.4
BN-PS-07	White over light green over yellow	Drywall	Duplex Pantry	Yes	1.0	1.3
BN-PS-08	White over tan over yellow over green	Drywall	Duplex Kitchen	Yes	1.0	<1.0
BN-PS-09	Dark green over white over yellow over light green over yellow	Wood door	Duplex Kitchen	Yes	1.0	3.0
BN-PS-10	White over green/blue over beige	Drywall	Duplex Living Room	Yes	1.0	25
BN-PS-11	White	Drywall	Duplex Living Room	Yes	1.0	1.4
BN-PS-12	White over yellow over light yellow	Drywall	Duplex Hallway 2nd Floor	Yes	1.0	1.7
BN-PS-13	White over beige	Drywall	Duplex Washroom	Yes	1.0	1.4
BN-PS-14	White over light green over blue	Drywall	Duplex Bedroom # 1	Yes	1.0	14
BN-PS-15	White over aqua over blue	Drywall	Duplex Bedroom # 2	Yes	1.0	13
BN-PS-16	White over light blue over pink	Drywall	Duplex Bedroom # 3	Yes	1.0	1.8
BN-PS-17	Multiple layers of grey over yellow/orange over red	Wood	Duplex Basement	Yes	1.0	2.3
BN-PS-18	Multiple layers of green over light green over grey over red	Concrete	Duplex Basement	Yes	1.0	24

Notes:

RDL: Reportable detection limit

<X: Non Detect

HPA: Hazardous Products Act

(1) Elevated reporting limit due to a low sample weight used in the digestion.



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)

Table C-3: Paint Sample Descriptions and Mercury Analytical Results (Continued)

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	Sent for Analysis (Yes/No)	RDL (mg/kg)	Total Lead (mg/kg)
BN-PS-19	Multiple layers of grey	Concrete	Duplex Basement	Yes	1.0	1.6
BN-PS-20	White	Wood	Duplex Exterior	Yes	1.0	35
BN-PS-21	Multiple layers of grey	Concrete	Duplex Exterior	Yes	1.0	9.4
BN-PS-22	Multiple layers of grey over green	Wood	Duplex Exterior	Yes	1.0	12
BN-PS-23	White over grey	Wood	Small Shed	Yes	1.0	25
BN-PS-24	Red	Metal	Generator Building Exterior	Yes	1.0	<1.0
BN-PS-25	White	Metal	Generator Building Exterior	Yes	1.0	37
BN-PS-26	White	Wood	Equipment Building Exterior	Yes	1.0	30
BN-PS-27	Multiple layers of grey	Concrete	Equipment Building Exterior	Yes	1.0	1.9
BN-PS-28	Red over white	Wood	Equipment Building Exterior	Yes	1.0	4.3
BN-PS-29	Multiple layers of white	Wood	Single Dwelling Exterior	Yes	1.0	24
BN-PS-30	Multiple layers of grey	Concrete	Single Dwelling Exterior	Yes	1.0	3.7
BN-PS-31	Red over orange over red	Wood	Single Dwelling Exterior	Yes	1.0	<1.0
BN-PS-32	Red	Wood	Duplex exterior	Yes	1.0	4.7
BN-PS-33	Orange over tan over light yellow over light green over white	Drywall	Single Dwelling Porch # 1	Yes	1.0	<1.0
BN-PS-34	White	Drywall	Single Dwelling Living Room	Yes	1.0	14
BN-PS-35	White over beige over green	Drywall	Single Dwelling Living Room	Yes	1.0	65
BN-PS-36	Blue over light green over yellow over white over dark red	Drywall	Single Dwelling Kitchen	Yes	1.0	1.8

Notes:

RDL: Reportable detection limit

<X: Non Detect

HPA: Hazardous Products Act

(1) Elevated reporting limit due to a low sample weight used in the digestion.

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)



Table C-3: Paint Sample Descriptions and Mercury Analytical Results (Continued)

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	Sent for Analysis (Yes/No)	RDL (mg/kg)	Total Lead (mg/kg)
BN-PS-37	Green over dark green over tan over beige	Drywall	Single Dwelling Porch # 2	Yes	1.0	2.5
BN-PS-38	White over green over tan over dark tan	Drywall	Single Dwelling Porch # 2	Yes	1.0	1.6
BN-PS-39	Light blue over blue over yellow over beige	Wood panel	Single Dwelling Washroom	Yes	1.0	<1.0
BN-PS-40	White over beige	Drywall	Single Dwelling Washroom	Yes	1.0	<1.0
BN-PS-41	Green over yellow over blue over grey	Drywall	Single Dwelling Bedroom # 1	Yes	1.0	13
BN-PS-42	White with yellow pattern over light green over blue over beige	Drywall	Single Dwelling Bedroom # 1	Yes	1.0	30
BN-PS-43	White with yellow pattern over light green over blue	Drywall	Single Dwelling Bedroom # 1	Yes	1.0	44
BN-PS-44	Beige over light beige over light brown	Drywall	Single Dwelling Bedroom # 2	Yes	1.0	3.6
BN-PS-45	White with yellow pattern over pink over beige	Drywall	Single Dwelling Bedroom # 2	Yes	1.0	34
BN-PS-46	White over beige	Drywall	Single Dwelling Hallway	Yes	1.0	1.5
BN-PS-47	Green over blue over white	Drywall	Single Dwelling Bedroom # 3	Yes	1.0	1.4
BN-PS-48	White over light green over dark green	Drywall	Single Dwelling Bedroom # 3	Yes	1.0	1.1
BN-PS-49	Yellow with white pattern over green over beige	Drywall	Single Dwelling Bedroom # 4	Yes	1.0	1.7
BN-PS-50	Yellow over green over white	Drywall	Single Dwelling Bedroom # 4	Yes	1.0	2.0
BN-PS-51	Multiple layers of grey	Concrete	Single Dwelling Basement	Yes	1.0	1.2
BN-PS-52	White over multiple layers of grey	Drywall	Single Dwelling Basement	Yes	1.0	7.1
BN-PS-53	Grey over green over white	Concrete	Single Dwelling Basement	Yes	1.0	5.9
BN-PS-54	Yellow over grey	Concrete	Single Dwelling Basement	Yes	1.0	2.1

Notes:

RDL: Reportable detection limit

<X: Non Detect

HPA: Hazardous Products Act

(1) Elevated reporting limit due to a low sample weight used in the digestion.

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)



Table C-3: Paint Sample Descriptions and Mercury Analytical Results (Continued)

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	Sent for Analysis (Yes/No)	RDL (mg/kg)	Total Lead (mg/kg)
BN-PS-55	Grey over blue over orange over red	Wood	Single Dwelling Basement	Yes	1.0	3.8
BN-PS-56	Grey over red over dark red over grey	Concrete	Light Tower Interior	Yes	1.0	<u>62</u>
BN-PS-57	Red over green over dark green	Metal staircase	Light Tower Interior	Yes	1.0	<u>120</u>
BN-PS-58	Grey over red over over brown over white	Metal post	Light Tower Interior	Yes	1.0	<u>25</u>
BN-PS-59	Beige over dark beige	Concrete	Light Tower Interior	Yes	1.0	<u>53</u>
BN-PS-60	Light green over white	Drywall	Equipment Building Room # 1	Yes	1.0	<u>29</u>
BN-PS-61	Multiple layers of grey	Concrete	Equipment Building Room # 1	Yes	1.0	<u>15</u>
BN-PS-62	White	Wood panel	Equipment Building Room # 1	Yes	1.0	7.6
BN-PS-63	White	Drywall	Equipment Building Room # 2	Yes	1.0	<u>57</u>
BN-PS-64	Multiple layers of grey	Wood	Generator Building Interior	Yes	1.0	7.2
BN-PS-65	White	Wood panel	Generator Building Interior	Yes	1.0	9.2
BN-PS-66	Multiple layers of white	Wood Siding	Storage Shed Exterior	Yes	1.0	<u>15</u>
BN-PS-67	Multiple layers of grey	Concrete	Storage Shed # 2 Exterior	Yes	1.0	<1.0
BN-PS-68	White over red over grey	Wood	Storage Shed # 2 Exterior	Yes	1.0	<u>31</u>
BN-PS-69	White over red over dark grey	Wood	Storage Shed # 2 Exterior	Yes	1.0	<u>15</u>
BN-PS-70	Multiple layers of white	Wood	Winch House Exterior	Yes	1.0	7.6
BN-PS-71	Red over grey	Wood	Winch House Exterior	Yes	1.0	2.3
BN-PS-72	Multiple layers of grey	Concrete	Winch House Exterior	Yes	1.0	<1.0

Notes:

RDL: Reportable detection limit

<X: Non Detect

HPA: Hazardous Products Act

(1) Elevated reporting limit due to a low sample weight used in the digestion.

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)



Table C-3: Paint Sample Descriptions and Mercury Analytical Results (Continued)

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	Sent for Analysis (Yes/No)	RDL (mg/kg)	Total Lead (mg/kg)
BN-PS-73	Multiple layers of grey over red over white	Wood	Winch House Interior	Yes	1.0	3.3
BN-PS-74	Multiple layers of grey over red	Concrete	Winch House Interior	Yes	1.0	1.3
BN-PS-75	Green over orange	Metal	Winch House Interior	Yes	1.0	6.3
BN-PS-76	Multiple layers of grey	Concrete	Videograph Building Interior	Yes	1.0	<1.0
BN-PS-77	Off-white	Wood	Videograph Building Interior	Yes	1.0	<1.0
BN-PS-DUP1	White	Wood	Duplex Exterior	Yes	1.0	<u>38</u>
BN-PS-DUP2	Green over blue over white	Drywall	Single Dwelling Bedroom # 3	Yes	1.0	1.1
BN-PS-DUP3	Beige over dark beige	Concrete	Light Tower Interior	Yes	1.0	<u>14</u>
BN-PS-DUP4	Grey over red over dark red over grey	Concrete	Light Tower Interior	Yes	1.0	<u>61</u>
BN-PS-DUP5	Multiple layers of grey	Concrete	Videograph Building Interior	Yes	1.0	1.0

Notes:

RDL: Reportable detection limit

<X: Non Detect

HPA: Hazardous Products Act

(1) Elevated reporting limit due to a low sample weight used in the digestion.

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)

BN-PS-DUP1 is a duplicate of BN-PS-20

BN-PS-DUP2 is a duplicate of BN-PS-47

BN-PS-DUP3 is a duplicate of BN-PS-59

BN-PS-DUP4 is a duplicate of BN-PS-56

BN-PS-DUP5 is a duplicate of BN-PS-76



Table C-4: Paint Sample Descriptions and PCB Analytical Results

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	Sent for Analysis (Yes/No)	MDL (mg/kg)	Total PCB (mg/kg)
BN-PS-04	White over blue over light blue over green over tan	Drywall	Duplex Hallway 1st Floor	Yes	5.0	<5.0
BN-PS-14	White over light green over blue	Drywall	Duplex Bedroom # 1	Yes	5.0	<5.0
BN-PS-21	Multiple layers of grey	Concrete	Duplex Exterior	Yes	5.0	<5.0
BN-PS-36	Blue over light green over yellow over white over dark red	Drywall	Singe Dwelling Kitchen	Yes	5.0	<5.0
BN-PS-45	White with yellow pattern over pink over beige	Drywall	Single Dwelling Bedroom # 2	Yes	5.0	<5.0
BN-PS-51	Multiple layers of grey	Concrete	Single Dwelling Basement	Yes	5.0	<5.0
BN-PS-61	Multiple layers of grey	Concrete	Equipment Building Room # 1	Yes	5.0	<5.0
BN-PS-75	Green over orange	Metal	Winch House Interior	Yes	5.0	<5.0

Notes:

MDL: Method detection limit

<X: Non Detect

Bold and shaded results indicate that PCB concentration is above the Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for PCBs in soil at a commercial site (33 mg/kg)



Table C-5: Paint Sample Descriptions and Lead Leachate Analytical Results

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	Sent for Analysis (Yes/No)	MDL (mg/L)	Lead Leachate (mg/L)
BN-PS-09	Dark green overwhite over	Wood door	Duplex Kitchen	Yes	0.005	2.8
BN-PS-13	White over beige	Drywall	Duplex Washroom	Yes	0.005	38
BN-PS-17	Multiple layers of grey over yellow/orange over red	Wood	Duplex Basement	Yes	0.005	8
BN-PS-28	Red over white	Wood	Equipment Building Exterior	Yes	0.005	19
BN-PS-31	Red over orange over red	Wood	Single Dwelling Exterior	Yes	0.005	0.72
BN-PS-32	Red	Wood	Duplex Exterior	Yes	0.005	4.7
BN-PS-36	Blue over light green over yellow over	Drywall	Singe Dwelling Kitchen	Yes	0.005	0.8
BN-PS-37	Green over dark green over tan over	Drywall	Single Dwelling Porch # 2	Yes	0.005	0.29
BN-PS-52	White over multiple layers of grey	Drywall	Single Dwelling Basement	Yes	0.005	9.5
BN-PS-55	Grey over blue over orange over red	Wood	Single Dwelling Basement	Yes	0.005	27
BN-PS-56	Grey over red over dark red over grey	Concrete	Light Tower Interior	Yes	0.005	55
BN-PS-59	Beige over dark beige	Concrete	Light Tower Interior	Yes	0.005	67
BN-PS-66	Multiple layers of white	Wood Siding	Storage Shed # 2 Exterior	Yes	0.005	79
BN-PS-68	White over red over grey	Wood	Storage Shed # 2 Exterior	Yes	0.005	41
BN-PS-69	White over red over dark grey	Wood	Storage Shed # 2 Exterior	Yes	0.005	31
BN-PS-70	Multiple layers of white	Wood	Winch House Exterior	Yes	0.05	130
BN-PS-71	Red over grey	Wood	Winch House Exterior	Yes	0.005	40
BN-PS-73	Multiple layers of grey over red over white	Wood	Winch House Interior	Yes	0.05	190
BN-PS-DUP1	White	Wood	Duplex Exterior	Yes	0.005	52

Notes:

Shaded results indicate that lead leachate concentration is above the provincial guidance document for leachable toxic waste criterion for lead (5.00 mg/L)

BN-PS-DUP1 is a duplicate of BN-PS-20



Table C-6: Paint Sample Descriptions and Mercury Leachate Analytical Results

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	Sent for Analysis (Yes/No)	MDL (mg/L)	Mercury Leachate (mg/L)
BN-PS-10	White over green/blue over beige	Drywall	Duplex Living Room	Yes	0.001	0.002
BN-PS-18	Multiple layers of green over light green over grey over red	Concrete	Duplex Basement	Yes	0.0002	0.00093
BN-PS-23	White over grey	Wood	Small Shed	Yes	0.0005	0.0054
BN-PS-25	White	Metal	Generator Building Exterior	Yes	0.0005	0.0022
BN-PS-26	White	Wood	Equipment Building Exterior	Yes	0.0001	0.00094
BN-PS-29	Multiple layers of white	Wood	Single Dwelling Exterior	Yes	0.0001	0.00088
BN-PS-35	White over beige over green	Drywall	Single Dwelling Living Room	Yes	0.005	<0.005
BN-PS-42	White with yellow pattern over light green over blue over beige	Drywall	Single Dwelling Bedroom # 1	Yes	0.0005	<0.0005
BN-PS-43	White with yellow pattern over light green over blue	Drywall	Single Dwelling Bedroom # 1	Yes	0.0005	<0.0005
BN-PS-45	White with yellow pattern over pink over beige	Drywall	Single Dwelling Bedroom # 2	Yes	0.0005	0.0014
BN-PS-56	Grey over red over dark red over grey	Concrete	Light Tower Interior	Yes	0.0005	<0.0005
BN-PS-57	Red over green over dark green	Metal staircase	Light Tower Interior	Yes	0.001	0.0031
BN-PS-58	Grey over red over over brown over white	Metal post	Light Tower Interior	Yes	0.002	0.026
BN-PS-59	Beige over dark beige	Concrete	Light Tower Interior	Yes	0.0005	<0.0005
BN-PS-60	Light green over white	Drywall	Equipment Building Room # 1	Yes	0.0002	<0.0002
BN-PS-63	White	Drywall	Equipment Building Room # 2	Yes	0.005	0.0074
BN-PS-68	White over red over grey	Wood	Storage Shed # 2 Exterior	Yes	0.001	<0.001
BN-PS-DUP1	White	Wood	Duplex Exterior	Yes	0.001	<0.001

Notes:

Shaded results indicate that mercury leachate concentration is above the provincial guidance document for leachable toxic waste criterion for mercury (0.10 mg/L)

BN-PS-DUP1 is a duplicate of BN-PS-20



Table C-7: Mould Sample Descriptions and Direct Microscopic Examination Results

Sample ID	Sample Description	Sample Location (Room No.)	Sent for Analysis (Yes/No)	Mould Identified, in rank order	Mould Growth
BN-MD-01	White Paint	Duplex Front Porch	Yes	<i>Ulocladium, Cladosporium and Chaetomium</i> (a few spores)	Moderate
BN-MD-02	White Paint	Duplex Back Porch	Yes	<i>Cladosporium</i>	Moderate
BN-MD-03	Tape Lift	Duplex Kitchen	Yes	<i>Cladosporium</i>	Abundant
BN-MD-04	Beige Paint	Single Dwelling Porch #1	Yes	<i>Cladosporium</i>	Abundant
BN-MD-05	Green Paint	Single Dwelling Bedroom #1	Yes	<i>Cladosporium</i>	Abundant
BN-MD-06	White Paint and Drywall	Single Dwelling Bedroom #3	Yes	<i>Ulocladium, Penicillium, Acremonium and Cladosporium</i>	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.
4. The results are only related to the samples analyzed.



APPENDIX D

Laboratory Certificates of Analyses



EMSL Canada Inc.

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Fax: (709) 722-7353
Collected:
Received: 11/27/2012
Analyzed: 12/04/2012

Proj: BE16IS6 NORTH

Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: BN-ASB-01 **Lab Sample ID:** 551205651-0001
Sample Description: Grey Rolled Flooring

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	rown /Tan /Variou	0.0%	100%	None Detected	

Client Sample ID: BN-ASB-02 **Lab Sample ID:** 551205651-0002
Sample Description: Drywall Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Gray	0%	100%	None Detected	

Client Sample ID: BN-ASB-03 **Lab Sample ID:** 551205651-0003
Sample Description: Drywall Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Gray	0%	97%	3% Chrysotile	

Client Sample ID: BN-ASB-04 **Lab Sample ID:** 551205651-0004
Sample Description: Drywall Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Gray	0%	98%	2% Chrysotile	

Client Sample ID: BN-ASB-05 **Lab Sample ID:** 551205651-0005
Sample Description: Beige w/green & brown whirl rolled flooring

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	rown /Tan /Variou	0.0%	100%	None Detected	

Client Sample ID: BN-ASB-06 **Lab Sample ID:** 551205651-0006
Sample Description: Fiberboard

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Tan/White	0%	100%	None Detected	

Client Sample ID: BN-ASB-07 **Lab Sample ID:** 551205651-0007
Sample Description: Drywall Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Gray	0%	100%	None Detected	



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Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: BN-ASB-08 **Lab Sample ID:** 551205651-0008

Sample Description: Green w/flower print Vinyl Floor Tile

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	arious /Black /Gree	0.0%	100%	None Detected	

Client Sample ID: BN-ASB-09 **Lab Sample ID:** 551205651-0009

Sample Description: Drywall Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Gray/White	0%	100%	None Detected	

Client Sample ID: BN-ASB-10 **Lab Sample ID:** 551205651-0010

Sample Description: Brick Mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	ray /Various /Silve	0.0%	100%	None Detected	

Client Sample ID: BN-ASB-11 **Lab Sample ID:** 551205651-0011

Sample Description: Insulation w/foil backing

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Brown	90%	10%	None Detected	

Client Sample ID: BN-ASB-12 **Lab Sample ID:** 551205651-0012

Sample Description: Red Asphalt Shingle

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	red /Various /Blac	0.0%	100%	None Detected	

Client Sample ID: BN-ASB-13 **Lab Sample ID:** 551205651-0013

Sample Description: Light Grey Caulking Around Pipe

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	rown /Gray /Variou	0.0%	99.7%	0.26% Chrysotile	

Client Sample ID: BN-ASB-14 **Lab Sample ID:** 551205651-0014

Sample Description: Plaster Coating on Concrete

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Gray	0%	100%	None Detected	

Client Sample ID: BN-ASB-15 **Lab Sample ID:** 551205651-0015

Sample Description: Grey Patching on Concrete

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Gray	0%	100%	None Detected	



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Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: BN-ASB-16 **Lab Sample ID:** 551205651-0016

Sample Description: Dark Grey Caulking on Roof Gutter

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	Gray /Red /Black	0.0%	96.6%	3.4% Chrysotile	

Client Sample ID: BN-ASB-17 **Lab Sample ID:** 551205651-0017

Sample Description: Red Asphalt Shingle w/Black Paper

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	Red /Various /Black	0.0%	100%	<0.25% Chrysotile	

Client Sample ID: BN-ASB-18 **Lab Sample ID:** 551205651-0018

Sample Description: Grey Wood Panel Flooring w/Mesh Backing & Grey Adhesive

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	rown /Gray /Variou	0.0%	100%	None Detected	

Client Sample ID: BN-ASB-19 **Lab Sample ID:** 551205651-0019

Sample Description: White Drywall Plaster & Caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	Gray /Tan /Various	0.0%	99.7%	0.34% Chrysotile	

Client Sample ID: BN-ASB-20 **Lab Sample ID:** 551205651-0020

Sample Description: Pink Fiberglass Insulation w/Paper Backing

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Black/Pink	90%	10%	None Detected	

Client Sample ID: BN-ASB-21 **Lab Sample ID:** 551205651-0021

Sample Description: 1x1 VFT w/Black Adhesive

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	ray /Various /Gree	0.0%	98.7%	1.3% Chrysotile	

Client Sample ID: BN-ASB-22 **Lab Sample ID:** 551205651-0022

Sample Description: Mastic on Countertop

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	Black	0.0%	100%	<0.25% Chrysotile	

Client Sample ID: BN-ASB-23 **Lab Sample ID:** 551205651-0023

Sample Description: Brown Rolled Flooring w/Mesh Black & Adhesive

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	rown /Tan /Variou	0.0%	100%	None Detected	



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Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: BN-ASB-24 **Lab Sample ID:** 551205651-0024

Sample Description: Grey Mortar on Oven Piping Wall

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012		0%	97%	3% Chrysotile	

Client Sample ID: BN-ASB-25 **Lab Sample ID:** 551205651-0025

Sample Description: Light Green/beige Floor Tile w/Black Mastic

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	arious /Black /Gree	0.0%	100%	None Detected	

Client Sample ID: BN-ASB-26 **Lab Sample ID:** 551205651-0026

Sample Description: Drywall Joint Compound & Plaster

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012		0%	98%	2% Chrysotile	

Client Sample ID: BN-ASB-27 **Lab Sample ID:** 551205651-0027

Sample Description: Grey Mortar Brick Mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	ray /Various /Silver	0.0%	100%	None Detected	

Client Sample ID: BN-ASB-28 **Lab Sample ID:** 551205651-0028

Sample Description: Red Brick

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	Red /Silver	0.0%	100%	None Detected	

Client Sample ID: BN-ASB-29 **Lab Sample ID:** 551205651-0029

Sample Description: Grey Insulation w/foil Backing

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Brown/Silver	90%	10%	None Detected	

Client Sample ID: BN-ASB-30 **Lab Sample ID:** 551205651-0030

Sample Description: Grey/Silver Mortar

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Gray	0%	100%	None Detected	

Client Sample ID: BN-ASB-31 **Lab Sample ID:** 551205651-0031

Sample Description: Drywall Joint Compound

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Gray	0%	100%	None Detected	



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Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: BN-ASB-32 **Lab Sample ID:** 551205651-0032

Sample Description: Pink Fiberglass w/Paper Backing

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Gray/Pink	80%	20%	None Detected	

Client Sample ID: BN-ASB-33 **Lab Sample ID:** 551205651-0033

Sample Description: Black Grout between Floor Boards

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	Gray /Black	0.0%	99.1%	0.86% Chrysotile	

Client Sample ID: BN-ASB-34 **Lab Sample ID:** 551205651-0034

Sample Description: Rolled Grey Flooring w/Paper Backing

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	Brown /Gray	0.0%	100%	None Detected	

Client Sample ID: BN-ASB-35 **Lab Sample ID:** 551205651-0035

Sample Description: Red Shingles Paper Felt Backing

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	Gray /Red /Black	0.0%	100%	None Detected	

Client Sample ID: BN-ASB-36 **Lab Sample ID:** 551205651-0036

Sample Description: White Caulking

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	Gray /Tan /Various	0.0%	100%	None Detected	

Client Sample ID: BN-ASB-37 **Lab Sample ID:** 551205651-0037

Sample Description: Red Asphalt Shingles w/Paper Felt

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	Red /Various /Blac	0.0%	99.7%	0.26% Chrysotile	

Client Sample ID: BN-ASB-38 **Lab Sample ID:** 551205651-0038

Sample Description: White Spray Foam Around Electrical

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Gray/Yellow	0%	100%	None Detected	

Client Sample ID: BN-ASB-39 **Lab Sample ID:** 551205651-0039

Sample Description: Beige Spray Foam on Videograph

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Tan	0%	100%	None Detected	



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Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Client Sample ID: BN-ASB-40 **Lab Sample ID:** 551205651-0040

Sample Description: Black Rubbering

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	Black	0.0%	100%	None Detected	

Client Sample ID: BN-ASB-41 **Lab Sample ID:** 551205651-0041

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	White	0.0%	100%	None Detected	

Client Sample ID: BN-ASB-42 **Lab Sample ID:** 551205651-0042

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	Gray	0.0%	100%	None Detected	

Client Sample ID: BN-ASB-43 **Lab Sample ID:** 551205651-0043

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM Grav. Reduction	12/04/2012	Gray / Various / Blac	0.0%	100%	None Detected	

Client Sample ID: BN-ASB-DUP1 **Lab Sample ID:** 551205651-0045

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Gray	0%	97%	3% Chrysotile	

Client Sample ID: BN-ASB-DUP2 **Lab Sample ID:** 551205651-0046

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Brown/Tan	35%	65%	None Detected	

Client Sample ID: BN-ASB-DUP3 **Lab Sample ID:** 551205651-0047

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Gray/Beige	0%	98%	2% Chrysotile	

Client Sample ID: BN-ASB-DUP4 **Lab Sample ID:** 551205651-0048

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	12/04/2012	Black	0%	100%	None Detected	



EMSL Canada Inc.

10 Falconer Drive, Unit #3 Mississauga, ON L5N 3L8
Phone/Fax: 289-997-4602 / (289) 997-4607
<http://www.emsl.com> / torontolab@emsl.com

EMSL Canada Order 551205651
Customer ID: 55MEEN26
Customer PO:
Project ID:

Summary Test Report for Asbestos Analysis via EPA 600/R-93/116

Analyst(s)

Alice Feng	PLM Grav. Reduction	(25)
Matthew Davis	PLM	(22)

Kevin Pang
or other Approved Signatory

Any questions please contact Kevin Pang.

Samples analyzed by EPA 600/R-93/116 consistent with NLR 111/98. The estimated limit of detection for non-detect samples is <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: 12/04/2012 18:07:01

Your P.O. #: TF12076460
 Your Project #: BELLE ISLE NORTH

Attention: Lori Wiseman

AMEC Environment & Infrastructure
 St John's - Standing Offer
 PO Box 13216
 133 Crosbie Rd, Suite 202
 St John's, NL
 A1B 4A5

Your C.O.C. #: B111854, B111855, B086044, B086045, B086041, B086039, B086040, B086046, B086047

Report Date: 2012/12/20

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2I6965

Received: 2012/11/27, 11:31

Sample Matrix: Paint

Samples Received: 82

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Mercury - Total in Leachate (CVAA,LL)	17	2012/12/17	2012/12/17	ATL SOP 00026	Based on EPA245.1
Mercury - Total in Leachate (CVAA,LL)	1	2012/12/20	2012/12/20	ATL SOP 00026	Based on EPA245.1
Metals Leach. Tot. MS - N-per	10	2012/12/11	2012/12/12	ATL SOP 00059	Based on EPA6020A
Metals Leach. Tot. MS - N-per	7	2012/12/12	2012/12/13	ATL SOP 00059	Based on EPA6020A
Metals Leach. Tot. MS - N-per	2	2012/12/12	2012/12/14	ATL SOP 00059	Based on EPA6020A
Metals Paint Acid Extr. ICPMS (1)	20	2012/11/29	2012/11/29	ATL SOP 00024	Based on EPA6020A
Metals Paint Acid Extr. ICPMS (1)	20	2012/11/29	2012/11/30	ATL SOP 00024	Based on EPA6020A
Metals Paint Acid Extr. ICPMS (1)	17	2012/11/30	2012/11/30	ATL SOP 00024	Based on EPA6020A
Metals Paint Acid Extr. ICPMS (1)	23	2012/11/30	2012/12/01	ATL SOP 00024	Based on EPA6020A
Metals Paint Acid Extr. ICPMS (1)	2	2012/11/30	2012/12/03	ATL SOP 00024	Based on EPA6020A
PCBs in Paint by GC/ECD	8	2012/12/06	2012/12/11		in house
TCLP Inorganic extraction - pH	20	N/A	2012/12/11	ATL SOP-00035	Based on EPA1311
TCLP Inorganic extraction - pH	13	N/A	2012/12/12	ATL SOP-00035	Based on EPA1311
TCLP Inorganic extraction - Weight	20	N/A	2012/12/11	ATL SOP-00035	Based on EPA1311
TCLP Inorganic extraction - Weight	13	N/A	2012/12/12	ATL SOP-00035	Based on EPA1311

Remarks:

Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

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

* Results relate only to the items tested.

(1) Note: Metals naming convention has been changed from "Available" to "Acid Extractable" as part of a national harmonization initiative. Contact your project manager for additional details.



Maxxam Job #: B2I6965
Report Date: 2012/12/20

AMEC Environment & Infrastructure
Client Project #: BELLE ISLE NORTH

Your P.O. #: TF12076460
Sampler Initials: JL

-2-

Encryption Key

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

Michelle Hill, Project Manager
Email: MHill@maxxam.ca
Phone# (902) 420-0203 Ext:289

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

Total cover pages: 2

Maxxam Job #: B2I6965
Report Date: 2012/12/20

AMEC Environment & Infrastructure
Client Project #: BELLE ISLE NORTH

Your P.O. #: TF12076460
Sampler Initials: JL

RESULTS OF ANALYSES OF PAINT

Maxxam ID		PT6019	PT6020	PT6024	PT6028	PT6029	PT6034	PT6036	PT6037	PT6039	PT6040		
Sampling Date		2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20		
	Units	BN-PS-09	BN-PS-10	BN-PS-13	BN-PS-17	BN-PS-18	BN-PS-23	BN-PS-25	BN-PS-26	BN-PS-28	BN-PS-29	RDL	QC Batch
Inorganics													
Sample Weight (as received)	g	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	N/A	3064384
Initial pH	N/A	NA	9.2	NA	6.1	10	5.5	5.4	5.9	5.9	5.9		3064387
Final pH	N/A	5.1	6.0	5.0	5.0	6.0	5.0	5.0	5.0	5.0	5.0		3064387

Maxxam ID		PT6043	PT6044	PT6047	PT6048	PT6049	PT6465	PT6466	PT6468	PT6475	PT6478		
Sampling Date		2012/10/20	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15		
	Units	BN-PS-31	BN-PS-32	BN-PS-35	BN-PS-36	BN-PS-37	BN-PS-42	BN-PS-43	BN-PS-45	BN-PS-52	BN-PS-55	RDL	QC Batch
Inorganics													
Sample Weight (as received)	g	2.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	N/A	3064384
Initial pH	N/A	NA	5.9	5.5	NA	9.3	5.9	5.9	6.1	6.6	6.4		3064387
Final pH	N/A	4.9	5.0	5.0	5.0	5.8	5.0	5.1	5.1	5.1	5.1		3064387

Maxxam ID		PT6479	PT6480	PT6481	PT6482	PT6483	PT6488	PT6491		
Sampling Date		2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15		
	Units	BN-PS-56	BN-PS-57	BN-PS-58	BN-PS-59	BN-PS-60	BN-PS-63	BN-PS-66	RDL	QC Batch
Inorganics										
Sample Weight (as received)	g	5.0	2.5	2.5	5.0	2.5	2.5	2.5	N/A	3066694
Initial pH	N/A	6.3	6.7	6.6	6.0	8.0	NA	6.4		3066698
Final pH	N/A	5.1	5.1	5.2	5.1	5.7	5.3	5.1		3066698

Maxxam ID		PT6493	PT6494	PT6495	PT6508	PT6510	PT6515		
Sampling Date		2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/10/20		
	Units	BN-PS-68	BN-PS-69	BN-PS-70	BN-PS-71	BN-PS-73	BN-PS-DUP1	RDL	QC Batch
Inorganics									
Sample Weight (as received)	g	4.5	2.5	2.5	2.5	2.5	5.0	N/A	3066694
Initial pH	N/A	NA	6.5	6.3	6.2	5.9	6.2		3066698
Final pH	N/A	5.1	5.0	5.1	5.1	5.0	5.2		3066698

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B2I6965
 Report Date: 2012/12/20

 AMEC Environment & Infrastructure
 Client Project #: BELLE ISLE NORTH

 Your P.O. #: TF12076460
 Sampler Initials: JL

MERCURY BY COLD VAPOUR AA (PAINT)

Maxxam ID		PT6020		PT6029		PT6034	PT6036		PT6037	PT6040		PT6047		
Sampling Date		2012/10/20		2012/10/20		2012/10/20	2012/10/20		2012/10/20	2012/10/20		2012/11/15		
	Units	BN-PS-10	RDL	BN-PS-18	RDL	BN-PS-23	BN-PS-25	RDL	BN-PS-26	BN-PS-29	RDL	BN-PS-35	RDL	QC Batch
Metals														
Leachable Mercury (Hg)	ug/L	2.0 ⁽¹⁾	1.0	0.93 ⁽¹⁾	0.20	5.4	2.2	0.50	0.94	0.88	0.10	<5.0 ⁽¹⁾	5.0	3071758

Maxxam ID		PT6465	PT6466	PT6468	PT6479		PT6480		PT6481		PT6482		
Sampling Date		2012/11/15	2012/11/15	2012/11/15	2012/11/15		2012/11/15		2012/11/15		2012/11/15		
	Units	BN-PS-42	BN-PS-43	BN-PS-45	BN-PS-56	RDL	BN-PS-57	RDL	BN-PS-58	RDL	BN-PS-59	RDL	QC Batch
Metals													
Leachable Mercury (Hg)	ug/L	<0.50 ⁽¹⁾	<0.50 ⁽¹⁾	1.4 ⁽¹⁾	<0.50 ⁽¹⁾	0.50	3.1	1.0	26	2.0	<0.50 ⁽¹⁾	0.50	3071758

Maxxam ID		PT6483		PT6488		PT6493		PT6515		
Sampling Date		2012/11/15		2012/11/15		2012/11/15		2012/10/20		
	Units	BN-PS-60	RDL	BN-PS-63	RDL	BN-PS-68	QC Batch	BN-PS-DUP1	RDL	QC Batch
Metals										
Leachable Mercury (Hg)	ug/L	<0.20 ⁽¹⁾	0.20	7.4 ⁽¹⁾	5.0	<1.0 ⁽¹⁾	3071758	<1.0 ⁽²⁾	1.0	3076661

ELEMENTS BY ICP/MS (PAINT)

Maxxam ID		PT6019	PT6024	PT6028	PT6039	PT6043	PT6044	PT6048	PT6049	PT6475		
Sampling Date		2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/11/15	2012/11/15	2012/11/15	2012/11/15		
	Units	BN-PS-09	BN-PS-13	BN-PS-17	BN-PS-28	BN-PS-31	BN-PS-32	BN-PS-36	BN-PS-37	BN-PS-52	RDL	QC Batch
Metals												
Leachable Lead (Pb)	ug/L	2800	38000	8000	19000	720	4700	800	290	9500	5.0	3065409

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) - Elevated RDL due to sample matrix.

(2) - Elevated detection limit due to sample matrix.

Maxxam Job #: B216965
 Report Date: 2012/12/20

 AMEC Environment & Infrastructure
 Client Project #: BELLE ISLE NORTH

 Your P.O. #: TF12076460
 Sampler Initials: JL

ELEMENTS BY ICP/MS (PAINT)

Maxxam ID		PT6478		PT6479	PT6482	PT6491	PT6493		
Sampling Date		2012/11/15		2012/11/15	2012/11/15	2012/11/15	2012/11/15		
	Units	BN-PS-55	QC Batch	BN-PS-56	BN-PS-59	BN-PS-66	BN-PS-68	RDL	QC Batch
Metals									
Leachable Lead (Pb)	ug/L	27000	3065409	55000	67000	79000	41000	5.0	3067056

Maxxam ID		PT6494		PT6495		PT6508		PT6510		PT6515		
Sampling Date		2012/11/15		2012/11/15		2012/11/15		2012/11/15		2012/10/20		
	Units	BN-PS-69	RDL	BN-PS-70	RDL	BN-PS-71	RDL	BN-PS-73	RDL	BN-PS-DUP1	RDL	QC Batch
Metals												
Leachable Lead (Pb)	ug/L	31000	5.0	130000	50	40000	5.0	190000	50	52000	5.0	3067056

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		PT6011	PT6011	PT6011	PT6012	PT6013	PT6014	PT6015	PT6016	PT6017		
Sampling Date		2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20		
	Units	BN-PS-01	BN-PS-01 Lab-Dup	BN-PS-01 Lab-Dup 2	BN-PS-02	BN-PS-03	BN-PS-04	BN-PS-05	BN-PS-06	BN-PS-07	RDL	QC Batch
Metals												
Acid Extractable Lead (Pb)	mg/kg	1900	2000	1900	2700	3900	1200	3600	1300	3300	5.0	3052474
Acid Extractable Mercury (Hg)	mg/kg	4.4	4.9	4.9	2.6	5.0	1.4	4.0	1.4	1.3	1.0	3052474

Maxxam ID		PT6018	PT6019	PT6020	PT6022	PT6023	PT6024	PT6025	PT6026	PT6027		
Sampling Date		2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20		
	Units	BN-PS-08	BN-PS-09	BN-PS-10	BN-PS-11	BN-PS-12	BN-PS-13	BN-PS-14	BN-PS-15	BN-PS-16	RDL	QC Batch
Metals												
Acid Extractable Lead (Pb)	mg/kg	770	6500	1400	1000	1700	20000	470	4700	1500	5.0	3052474
Acid Extractable Mercury (Hg)	mg/kg	<1.0	3.0	25	1.4	1.7	1.4	14	13	1.8	1.0	3052474

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B2I6965
 Report Date: 2012/12/20

 AMEC Environment & Infrastructure
 Client Project #: BELLE ISLE NORTH

 Your P.O. #: TF12076460
 Sampler Initials: JL

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		PT6028	PT6029	PT6030	PT6031		PT6032	PT6032	PT6032	PT6033	PT6034		
Sampling Date		2012/10/20	2012/10/20	2012/10/20	2012/10/20		2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20		
	Units	BN-PS-17	BN-PS-18	BN-PS-19	BN-PS-20	QC Batch	BN-PS-21	BN-PS-21 Lab-Dup	BN-PS-21 Lab-Dup 2	BN-PS-22	BN-PS-23	RDL	QC Batch
Metals													
Acid Extractable Lead (Pb)	mg/kg	12000	4100	730	8900	3052474	1700	1700	1600	4500	2200	5.0	3053916
Acid Extractable Mercury (Hg)	mg/kg	2.3	24	1.6	35	3052474	9.4	11	11	12	25	1.0	3053916

Maxxam ID		PT6035	PT6036		PT6037	PT6038	PT6039	PT6040	PT6041	PT6043	PT6043		
Sampling Date		2012/10/20	2012/10/20		2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/10/20		
	Units	BN-PS-24	BN-PS-25	QC Batch	BN-PS-26	BN-PS-27	BN-PS-28	BN-PS-29	BN-PS-30	BN-PS-31	BN-PS-31 Lab-Dup	RDL	QC Batch
Metals													
Acid Extractable Lead (Pb)	mg/kg	2700	1000	3053916	4000	1600	16000	2500	2200	12000	8700	5.0	3052853
Acid Extractable Mercury (Hg)	mg/kg	<1.0	37	3053916	30	1.9	4.3	24	3.7	<1.0	<1.0	1.0	3052853

Maxxam ID		PT6043	PT6044	PT6045	PT6046	PT6047	PT6048	PT6049	PT6050	PT6051			
Sampling Date		2012/10/20	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15			
	Units	BN-PS-31 Lab-Dup 2	BN-PS-32	BN-PS-33	BN-PS-34	BN-PS-35	BN-PS-36	BN-PS-37	BN-PS-38	BN-PS-39	RDL	QC Batch	
Metals													
Acid Extractable Lead (Pb)	mg/kg	9200	14000	3600	850	2500	5500	7900	1900	2300	5.0	3052853	
Acid Extractable Mercury (Hg)	mg/kg	<1.0	4.7	<1.0	14	65	1.8	2.5	1.6	<1.0	1.0	3052853	

Maxxam ID		PT6052	PT6464	PT6465	PT6466	PT6467	PT6468		PT6469	PT6470			
Sampling Date		2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15		2012/11/15	2012/11/15			
	Units	BN-PS-40	BN-PS-41	BN-PS-42	BN-PS-43	BN-PS-44	BN-PS-45	QC Batch	BN-PS-46	BN-PS-47	RDL	QC Batch	
Metals													
Acid Extractable Lead (Pb)	mg/kg	2000	2900	2800	2000	2500	2000	3052853	3800	1400	5.0	3053916	
Acid Extractable Mercury (Hg)	mg/kg	<1.0	13	30	44	3.6	34	3052853	1.5	1.4	1.0	3053916	

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B2I6965
 Report Date: 2012/12/20

 AMEC Environment & Infrastructure
 Client Project #: BELLE ISLE NORTH

 Your P.O. #: TF12076460
 Sampler Initials: JL

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		PT6471	PT6472	PT6473		PT6474	PT6474	PT6474		PT6475		
Sampling Date		2012/11/15	2012/11/15	2012/11/15		2012/11/15	2012/11/15	2012/11/15		2012/11/15		
	Units	BN-PS-48	BN-PS-49	BN-PS-50	QC Batch	BN-PS-51	BN-PS-51 Lab-Dup	BN-PS-51 Lab-Dup 2	QC Batch	BN-PS-52	RDL	QC Batch
Metals												
Acid Extractable Lead (Pb)	mg/kg	1300	3000	2600	3053916	1800	1700	1700	3054338	18000	5.0	3053916
Acid Extractable Mercury (Hg)	mg/kg	1.1	1.7	2.0	3053916	1.2	1.0	<1.0	3054338	7.1	1.0	3053916

Maxxam ID		PT6476	PT6477	PT6478	PT6479	PT6480	PT6481		PT6482	PT6483		
Sampling Date		2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15		2012/11/15	2012/11/15		
	Units	BN-PS-53	BN-PS-54	BN-PS-55	BN-PS-56	BN-PS-57	BN-PS-58	QC Batch	BN-PS-59	BN-PS-60	RDL	QC Batch
Metals												
Acid Extractable Lead (Pb)	mg/kg	2600	4600	26000	32000	3800	290	3053916	49000	1900	5.0	3054338
Acid Extractable Mercury (Hg)	mg/kg	5.9	2.1	3.8	62	120	25	3053916	53	29	1.0	3054338

Maxxam ID		PT6486	PT6487	PT6488	PT6489	PT6490	PT6491	PT6492	PT6493	PT6494		
Sampling Date		2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15		
	Units	BN-PS-61	BN-PS-62	BN-PS-63	BN-PS-64	BN-PS-65	BN-PS-66	BN-PS-67	BN-PS-68	BN-PS-69	RDL	QC Batch
Metals												
Acid Extractable Lead (Pb)	mg/kg	2500	690	440	2400	600	37000	800	17000	11000	5.0	3054338
Acid Extractable Mercury (Hg)	mg/kg	15	7.6	57	7.2	9.2	15	<1.0	31	15	1.0	3054338

Maxxam ID		PT6495		PT6508	PT6508	PT6508		PT6509	PT6510	PT6511		
Sampling Date		2012/11/15		2012/11/15	2012/11/15	2012/11/15		2012/11/15	2012/11/15	2012/11/15		
	Units	BN-PS-70	QC Batch	BN-PS-71	BN-PS-71 Lab-Dup	BN-PS-71 Lab-Dup 2	QC Batch	BN-PS-72	BN-PS-73	BN-PS-74	RDL	QC Batch
Metals												
Acid Extractable Lead (Pb)	mg/kg	28000	3054338	21000	6300(1)	8400(2)	3054345	2700	17000	1800	5.0	3054338
Acid Extractable Mercury (Hg)	mg/kg	7.6	3054338	2.3	<1.0	1.4	3054345	<1.0	3.3	1.3	1.0	3054338

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) - Poor RPD due to sample inhomogeneity. Results confirmed by redigestion and analysis.

(2) - Poor RPD due to sample inhomogeneity.

Maxxam Job #: B216965
Report Date: 2012/12/20

AMEC Environment & Infrastructure
Client Project #: BELLE ISLE NORTH

Your P.O. #: TF12076460
Sampler Initials: JL

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		PT6512		PT6513	PT6514	PT6515	PT6516	PT6517	PT6551		
Sampling Date		2012/11/15		2012/11/19	2012/11/19	2012/10/20	2012/11/15	2012/11/15	2012/11/15		
	Units	BN-PS-75	QC Batch	BN-PS-76	BN-PS-77	BN-PS-DUP1	BN-PS-DUP2	BN-PS-DUP3	BN-PS-DUP4	RDL	QC Batch
Metals											
Acid Extractable Lead (Pb)	mg/kg	3500	3054338	100	45	18000	1100	25000	27000	5.0	3054345
Acid Extractable Mercury (Hg)	mg/kg	6.3	3054338	<1.0	<1.0	38	1.1	14	61	1.0	3054345

Maxxam ID		PT6552			
Sampling Date		2012/11/19			
	Units	BN-PS-DUP5		RDL	QC Batch
Metals					
Acid Extractable Lead (Pb)	mg/kg			100	5.0
Acid Extractable Mercury (Hg)	mg/kg			1.0	1.0

POLYCHLORINATED BIPHENYLS BY GC-ECD (PAINT)

Maxxam ID		PT6014	PT6014	PT6025	PT6032	PT6048	PT6468	PT6474	PT6486	PT6512		
Sampling Date		2012/10/20	2012/10/20	2012/10/20	2012/10/20	2012/11/15	2012/11/15	2012/11/15	2012/11/15	2012/11/15		
	Units	BN-PS-04	BN-PS-04 Lab-Dup	BN-PS-14	BN-PS-21	BN-PS-36	BN-PS-45	BN-PS-51	BN-PS-61	BN-PS-75	RDL	QC Batch
PCBs												
Total PCB	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	3060802
Surrogate Recovery (%)												
Decachlorobiphenyl	%	18 ⁽¹⁾	23 ⁽¹⁾	14 ⁽¹⁾	13 ⁽¹⁾	33 ⁽²⁾	7.2 ⁽¹⁾	11 ⁽¹⁾	17 ⁽³⁾	20 ⁽¹⁾		3060802

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

(2) - PCB:Unidentified (possibly halogenated) compounds detected.

(3) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results. PCB:Unidentified (possibly halogenated) compounds detected.

Maxxam Job #: B2I6965
Report Date: 2012/12/20

AMEC Environment & Infrastructure
Client Project #: BELLE ISLE NORTH

Your P.O. #: TF12076460
Sampler Initials: JL

Package 1	13.3°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Revised report: Added TCLP Leachate + Lead to the following samples:

BN-PS-09
BN-PS-13
BN-PS-17
BN-PS-28
BN-PS-31
BN-PS-32
BN-PS-36
BN-PS-37
BN-PS-52
BN-PS-55
BN-PS-56
BN-PS-59
BN-PS-66
BN-PS-68
BN-PS-69
BN-PS-70
BN-PS-71
BN-PS-73
BN-PS-DUP1

Added TCLP Leachate + Mercury to the following samples:

BN-PS-10
BN-PS-18
BN-PS-DUP1
BN-PS-23
BN-PS-25
BN-PS-26
BN-PS-29
BN-PS-35
BN-PS-42
BN-PS-43
BN-PS-45
BN-PS-56

Maxxam Job #: B2I6965
Report Date: 2012/12/20

AMEC Environment & Infrastructure
Client Project #: BELLE ISLE NORTH

Your P.O. #: TF12076460
Sampler Initials: JL

BN-PS-57
BN-PS-58
BN-PS-59
BN-PS-60
BN-PS-63
BN-PS-68

As requested by Lori Wiseman. December 5, 2012

Sample PT6019-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6020-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6024-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6028-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6029-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6034-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6036-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6037-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6039-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6040-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6043-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Maxxam Job #: B2I6965
Report Date: 2012/12/20

AMEC Environment & Infrastructure
Client Project #: BELLE ISLE NORTH

Your P.O. #: TF12076460
Sampler Initials: JL

Sample PT6044-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6047-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6048-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6049-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6465-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6466-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6468-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6475-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6478-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6479-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6480-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6481-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6482-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6483-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Maxxam Job #: B216965
Report Date: 2012/12/20

AMEC Environment & Infrastructure
Client Project #: BELLE ISLE NORTH

Your P.O. #: TF12076460
Sampler Initials: JL

Sample PT6488-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6491-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6493-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6494-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6495-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6508-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6510-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

Sample PT6515-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample data quality.

POLYCHLORINATED BIPHENYLS BY GC-ECD (PAINT)

PCBs in Paint by GC/ECD: This data was generated using accepted laboratory practices and standard Quality Control procedures. However, due to the absence of a recognized reference method for PCB in Paint, an in-house method was used. Quality control samples were analyzed, however certain QC elements are unavailable, as noted:

Calculations of Method Detection Limit (MDL) as per CFR 40 (Part 136)

Accuracy and precision study

External performance evaluation study

Maxxam Job #: B2I6965
Report Date: 2012/12/20

AMEC Environment & Infrastructure
Client Project #: BELLE ISLE NORTH

Your P.O. #: TF12076460
Sampler Initials: JL

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3052474	Acid Extractable Lead (Pb)	2012/11/29	NC	75 - 125	96	75 - 125	<5.0	mg/kg	5.8	35		
3052474	Acid Extractable Mercury (Hg)	2012/11/29	111	75 - 125	102	75 - 125	<1.0	mg/kg	NC	35		
3052853	Acid Extractable Lead (Pb)	2012/11/30	NC	75 - 125	96	75 - 125	<5.0	mg/kg	30.3	35		
3052853	Acid Extractable Mercury (Hg)	2012/11/30	96	75 - 125	102	75 - 125	<1.0	mg/kg	NC	35		
3053916	Acid Extractable Lead (Pb)	2012/11/30	NC	75 - 125	104	75 - 125	<5.0	mg/kg	3.8	35		
3053916	Acid Extractable Mercury (Hg)	2012/11/30	NC	75 - 125	108	75 - 125	<1.0	mg/kg	12.3	35		
3054338	Acid Extractable Lead (Pb)	2012/12/01	NC	75 - 125	99	75 - 125	<5.0	mg/kg	5.9	35		
3054338	Acid Extractable Mercury (Hg)	2012/12/01	93	75 - 125	103	75 - 125	<1.0	mg/kg	NC	35		
3054345	Acid Extractable Lead (Pb)	2012/12/01	NC	75 - 125	95	75 - 125	<5.0	mg/kg	107 ^(1,2)	35		
3054345	Acid Extractable Mercury (Hg)	2012/12/01	85	75 - 125	101	75 - 125	<1.0	mg/kg	NC	35		
3060802	Decachlorobiphenyl	2012/12/11	10 ^(1,3)	30 - 130	36	30 - 130	68	%				
3060802	Total PCB	2012/12/11	25 ^(1,4)	60 - 130	108	60 - 130	<5.0	mg/kg	NC	50		
3064384	Sample Weight (as received)	2012/12/11					NA, RDL=N/A	g				
3065409	Leachable Lead (Pb)	2012/12/12			100	80 - 120	<5.0	ug/L				
3066694	Sample Weight (as received)	2012/12/12					NA, RDL=N/A	g	0	N/A		
3067056	Leachable Lead (Pb)	2012/12/13			105	80 - 120	<5.0	ug/L	NC	35		
3071758	Leachable Mercury (Hg)	2012/12/17			98	N/A	<0.10	ug/L			101	80 - 120
3076661	Leachable Mercury (Hg)	2012/12/20			97	N/A	<0.10	ug/L			94	80 - 120

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

(1) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) - Poor RPD due to sample inhomogeneity. Results confirmed by redigestion and analysis.

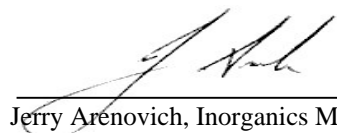
(3) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

(4) - Matrix Spike: results are outside acceptance limit. Analysis was repeated with similar results.

Validation Signature Page

Maxxam Job #: B2I6965

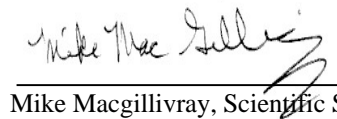
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



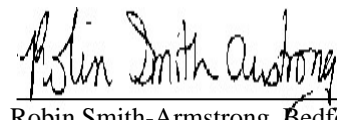
Jerry Arenovich, Inorganics Manager



Kevin Macdonald, Inorganics Supervisor



Mike Macgillivray, Scientific Specialist (Inorganics)



Robin Smith-Armstrong, Bedford SemiVol Spvsr

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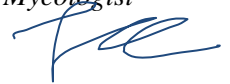
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Laboratory Analysis Report

To:

Lori Wiseman
 AMEC Environment & Infrastructure
 133 Crosbie Road
 P.O. Box 13216
 St. John's, Newfoundland
 A1B 4A5

EMC LAB REPORT NUMBER: 39500
Job/Project Name: Belle Isle North
Job/Project No: TF12076460 **No. of Samples:** 6
Sample Type: Bulk/Tape **Date Received:** Nov 27/12
Analysis Method(s): Direct Microscopic Examination
Date Analyzed: Nov 30/12 **Date Reported:** Nov 30/12
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
BN-MD-01	188142	Oct 20/12	White paint	<i>Ulocladium</i> <i>Cladosporium</i> <i>Chaetomium</i> (a few spores)	Moderate
BN-MD-02	188143	Oct 20/12	White paint	<i>Cladosporium</i>	Moderate
BN-MD-03	188144	Oct 20/12	Tape lift	<i>Cladosporium</i>	Abundant
BN-MD-04	188145	Nov 15/12	Beige paint	<i>Cladosporium</i>	Abundant
BN-MD-05	188146	Nov 15/12	Green paint	<i>Cladosporium</i>	Abundant
BN-MD-06	188147	Nov 15/12	White paint & drywall	<i>Ulocladium</i> <i>Penicillium</i> <i>Acremonium</i> <i>Cladosporium</i>	Abundant

Note:

- Mould growth is subjectively assessed with description terms sparse, moderate and abundant.
- 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).
- The presence of a few spores generally represents settled spores on the surface of the sample rather than indicating mould growth.
- The results are only related to the samples analyzed.

APPENDIX E

Room-By-Room Inspection Sheets

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
duplex	front porch (R)	1		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	beige rolled floor w/ mesh backing on wood	poor		
Walls	Painted drywall white/H. green/yellow/tan			BN-PS-01
Ceiling	Painted drywall			
Paint	ceiling, door, windows walls			
Insulation	none visible			
Piping	—			
Lighting (fluorescent, incandescent, HG, vapour)	1 incandescent bulb			Serial #s (10% to be checked):
Thermostats (eg. Honeywell, etc.)	—			Total: HG containing: Non-HG:
Lead Containing Materials	—			
Mould / Water Staining	visible black mould			BN-MD-01
Other (CO, VOCs, ODSs)	—			
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

BN-PS-02 painted wooden dressboard
white over black/yellow/tan/green

BN-PS-03 front door white/yellow/tan

BN-ASB-01^{poor} rolled flooring

BN-ASB-02 drywall joint compound

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
duplex	hallway	1		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	wood	fair		
Walls	unpainted drywall	fair		
Ceiling	unpainted drywall	good		
Paint	Walls white/blue/H blue/green/ tan	poor		BN-PS-04
Insulation	none visible			
Piping	—			
Lighting (fluorescent, incandescent, HG, vapour)	1 uncan			Serial #s (10% to be checked):
Thermostats (eg. Honeywell, etc.)	1 rectangular white Rodgers (Hg)			Total: HG containing: Non-HG:
Lead Containing Materials	—			
Mould / Water Staining	trace in areas near porch			
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
duplex	back porch			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	same as front porch			
Walls	painted drywall white/yellow/H yellow/tan			BN-PS-05
Ceiling	painted drywall			
Paint	doors white/beige/yellow/tan grey			BN-PS-06
Insulation	—			
Piping	—			
Lighting (fluorescent, incandescent, HG, vapour)	1 incandescent			Serial #s (10% to be checked):
Thermostats (eg. Honeywell, etc.)	—			Total: HG containing: Non-HG:
Lead Containing Materials	—			
Mould / Water Staining	unsealed (block)			BN-ASB-02 ND
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

~~BN-ASB-01 - KN; ASB-IND-02
drywall joint compound~~

BN-ASB-03 drywall joint compound

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
<i>duplex</i>	<i>pantry</i>			


	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	<i>rolled up flooring beige w/ green + brown swirl</i>	<i>fair</i>		<i>BN-ASB-05</i>
Walls	<i>painted drywall white/green/yellow</i>	<i>poor to fair</i>		<i>BN-PS-07</i>
Ceiling	<i>painted drywall white</i>	<i>good</i>		
Paint				
Insulation	<i>—</i>			
Piping	<i>—</i>			
Lighting (fluorescent, incandescent, HG, vapour)	<i>1 incandescent</i>		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	<i>—</i>		Total: HG containing: Non-HG:	
Lead Containing Materials	<i>possible metal piping? — see photo</i>			
Mould / Water Staining	<i>—</i>			
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); TEM (Transmission Electron microscopy); CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

drywall joint compound BN-ASB-04 - BN-ASB-DUP-1

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
duplex	kitchen	1		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	same as pantry	fair		
Walls	pointed drywall white/tan/yellow/green			BN-PS-03
Ceiling	pointed drywall	fair		
Paint	cupboard doors - dk green/ white/yellow/H green/wh/yellow	fair 		
Insulation	—			
Piping	Copper under sink			
Lighting (fluorescent, incandescent, HG, vapour)	1 incandescent		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	—		Total: HG containing: Non-HG:	
Lead Containing Materials	—			
Mould / Water Staining	cupboard doors - black mould trace on walls/crum			BN-MD-03
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

BN-PS-03 - dk green on cupboard doors see desc. above
 BN-ASB-06 fiberboard on walls

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
duplex	living room	1		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	wood	good		
Walls	1 painted drywall white/blue beige green	fair		BN-PS-10
Ceiling	1 painted drywall	poor		BN-PS-11
Paint				
Insulation	—			
Piping	—			
Lighting (fluorescent, incandescent, HG, vapour)	1 incandescent bulb		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	1 vect. general thermostat control not open		Total: HG containing: Non-HG:	
Lead Containing Materials	—			
Mould / Water Staining	—			
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

BN-ASB-07 drywall joint compound

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
displex	hallway	2		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Wood			
Walls	Painted drywall white/yellow/lt yellow			
Ceiling	Painted drywall			
Paint				
Insulation	—			
Piping	—			
Lighting (fluorescent, incandescent, HG, vapour)	1 incandescent		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	—		Total: HG containing: Non-HG:	
Lead Containing Materials	—			
Mould / Water Staining	—			
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

BN-PS-12 wall paint
~~BN-PS-12~~

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
duplex	bathroom	2		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	12x12 vinyl tile green flower print brown adhesive	fair		BN-PS-08
Walls	pointed drywall white/ + panelling - ps beige	fair		
Ceiling	pointed drywall			
Paint				
Insulation	—			
Piping	steel sink piping			
Lighting (fluorescent, incandescent, HG, vapour)	1 incandescent		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	—		Total: HG containing: Non-HG:	
Lead Containing Materials	—			
Mould / Water Staining	—			
Other (CO, VOCs, ODSs)	wall panelling same as kitchen white/lt blue/sky blue/pink/tan			
Photos	Same as 1 st fl. hall.			

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

BN-PS-13 paint on wall panelling

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
duplex	bedroom #1	2		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Wood			
Walls	Painted drywall white/lt green / blue			BN-PS-14
Ceiling	Painted drywall white			
Paint				
Insulation	—			
Piping	—			
Lighting (fluorescent, incandescent, HG, vapour)	1 incandescent		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	—		Total: HG containing: Non-HG:	
Lead Containing Materials	—			
Mould / Water Staining	—			
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

BN-ASB-09 drywall joint compound

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
duplex	bedroom #2	2		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	wood			
Walls	1 painted drywall white/ogreal blue			BN-PS-15
Ceiling	1 painted drywall			
Paint				
Insulation	—			
Piping	—			
Lighting (fluorescent, incandescent, HG, vapour)	1 incandescent			Serial #s (10% to be checked):
Thermostats (eg. Honeywell, etc.)	—			Total: HG containing: Non-HG:
Lead Containing Materials	—			
Mould / Water Staining	—			
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
duplex	bedroom #3			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Wood			
Walls	upainted drywall white & blue / pink			BN-PS-16
Ceiling	upainted drywall			
Paint				
Insulation	—			
Piping	—			
Lighting (fluorescent, incandescent, HG, vapour)	incandescent			Serial #s (10% to be checked):
Thermostats (eg. Honeywell, etc.)	—			Total: HG containing: Non-HG:
Lead Containing Materials	—			
Mould / Water Staining	—			
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
duplex	Basement			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Painted concrete many dk / dk grey layers	poor		BN-PS-19
Walls	Painted concrete many green / dk green layers over grey (some red)	poor		BN-PS-18
Ceiling	wood beam			
Paint	stains grey / dk grey / yellow-orange / red			BN-PS-17
Insulation	—			
Piping	laundry sink, furnace, hw tank copper / steel			
Lighting (fluorescent, incandescent, HG, vapour)	3 incandescent			Serial #s (10% to be checked):
Thermostats (eg. Honeywell, etc.)	—			Total: HG containing: Non-HG:
Lead Containing Materials	piping			
Mould / Water Staining				
Other (CO, VOCs, ODSs)	furnace + chimney			
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

BN-ASB-11
insulation with foil wrap on furnace panel

BN-ASB-10
brick mortar from chimney.

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Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
<i>duplex</i>	<i>apartment</i>			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls				
Ceiling Roof	<i>red asphalt shingle</i>			<i>BN-ASB-12</i>
Paint	<i>white on wood siding (layered) grey on concrete foundation (layered)</i>			<i>BN-PS-20 + DUP-01 BN-PS-21</i>
Insulation	<i>—</i>			
Piping	<i>—</i>			
Lighting (fluorescent, incandescent, HG, vapour)	<i>all lights removed</i>		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	<i>—</i>		Total: HG containing: Non-HG:	
Lead Containing Materials	<i>possible w/ piping</i>			
Mould / Water Staining				
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

*BN-PS-22 front steps
light grey/dark grey/green/grey*

*BN-PS-23
white over grey on small shed*

BN-ASB-13^{sk} grey caulking around metal pipe

Shed 1.8x2.5m

BN-PS-32 red trim paint

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Single Dwelling	Living Room	1		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Hardwood floor.			
Walls	Patterned white paper wall paper over beige paint over drywall.			AS-20 BW-PS-33. white over beige over green on drywall
Ceiling	Painted wood gypc white			BW-PS-34. white on drywall.
Paint	NO paint wallpaper.			
Insulation	Pink FG Insulation.			BW-ASB-20 pink fg insulation w/ paper back in
Piping	NO			
Lighting (fluorescent, incandescent, HG, vapour)	NA			Serial #s (10% to be checked):
Thermostats (eg. Honeywell, etc.)	NA			Total: HG containing: Non-HG:
Lead Containing Materials	NA			
Mould / Water Staining	Along Baseboards.			
Other (CO, VOCs, ODSs)	NO			
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Simu Dwelling	Kitchen	1		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
	Green			
Floor	Grey 1x1 tile with various colors of grey with black adhesive on wood	fair		BN-ASB-21
Walls	Paint on drywall Paneling half bottom			BN-ASB-22 BN-PS-30 BN-PS-31 BN-PS-32 BN-PS-33 BN-PS-34 BN-PS-35 BN-PS-36 BN-PS-37 BN-PS-38 BN-PS-39 BN-PS-40 BN-PS-41 BN-PS-42 BN-PS-43 BN-PS-44 BN-PS-45 BN-PS-46 BN-PS-47 BN-PS-48 BN-PS-49 BN-PS-50 BN-PS-51 BN-PS-52 BN-PS-53 BN-PS-54 BN-PS-55 BN-PS-56 BN-PS-57 BN-PS-58 BN-PS-59 BN-PS-60 BN-PS-61 BN-PS-62 BN-PS-63 BN-PS-64 BN-PS-65 BN-PS-66 BN-PS-67 BN-PS-68 BN-PS-69 BN-PS-70 BN-PS-71 BN-PS-72 BN-PS-73 BN-PS-74 BN-PS-75 BN-PS-76 BN-PS-77 BN-PS-78 BN-PS-79 BN-PS-80 BN-PS-81 BN-PS-82 BN-PS-83 BN-PS-84 BN-PS-85 BN-PS-86 BN-PS-87 BN-PS-88 BN-PS-89 BN-PS-90 BN-PS-91 BN-PS-92 BN-PS-93 BN-PS-94 BN-PS-95 BN-PS-96 BN-PS-97 BN-PS-98 BN-PS-99 BN-PS-100
Ceiling	White on gyproc.			
Paint	See sample			
Insulation	Pink FG insulate			
Piping	NO			
Lighting (fluorescent, incandescent, HG, vapour)	1		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	Hallway Honeywell rectangle	fair	Total: HG containing: Non-HG:	
Lead Containing Materials	Possible solder on pipe from stove and sink pipe	good		
Mould / Water Staining				
Other (CO, VOCs, ODSs)	two domestic fridges			
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:
 BN-ASB-22 - Mastic on countertop.
 BN-ASB-23 - Brown rolled floor with adhesive-mesh back
 BN-ASB-24 - mortar (grey) on oven output
 ↗ BN-ASB-DUP 3

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Single Dwelling	Porteh 2	1		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Same as Kitchen	Poor		
Walls	GYPROC. Painted	Poor		BN-PS-37 green over BN-PS-38 dark green over tan over beige BN-PS-38. Dark with over green over tan over dark tan
Ceiling	White paint on gyproc.			
Paint	See samples for colors.	Poor		
Insulation	Pink FG Insulation	Good		
Piping	NA.			
Lighting (fluorescent, incandescent, HG, vapour)	1			Serial #s (10% to be checked):
Thermostats (eg. Honeywell, etc.)	NA.			Total: HG containing: Non-HG:
Lead Containing Materials	NA.			
Mould / Water Staining	Along baseboards			
Other (CO, VOCs, ODSs)	NA.			
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); TEM (Transmission Electron microscopy); CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Single Dwelling	Bathroom (Downstairs)	1	Bathroom	

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	light green / Beige patterned Floor tile with Black mastic	poor		BN-ASB-25
Walls	Bot: Light blue over blue over yellow over blk. (to top half) Top: white over blk over gyproc.			BN-PS-39 - Bottom BN-PS-40 Top
Ceiling	White Painted gyproc.			
Paint	half white / half blue.			
Insulation	Pink fibreglass.			
Piping	NA			
Lighting (fluorescent, incandescent, HG, vapour)	1			Serial #s (10% to be checked):
Thermostats (eg. Honeywell, etc.)	NA			Total: HG containing: Non-HG:
Lead Containing Materials	Possible solder on sink plumbing			
Mould / Water Staining	yes			
Other (CO, VOCs, ODSs)	NO			
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Singy Anellon	Room 1	1		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Hardwood	fair		
Walls	Painted gyproc	poor		PS BN-PS-41-green over yellow over blue over grey BN-PS-42 white w/ yellow Pattern over light
Ceiling	White painted gyproc			green over blue over beige BW-PS-43 white with light yellow pattern over
Paint				light green over blue or beige
Insulation	Pink Fibreglass			
Piping	ND			
Lighting (fluorescent, incandescent, HG, vapour)	1			Serial #s (10% to be checked):
Thermostats (eg. Honeywell, etc.)	NA			Total: HG containing: Non-HG:
Lead Containing Materials	NA			
Mould / Water Staining	on ceiling & mould walls.			MD-07 MD-05
Other (CO, VOCs, ODSs)	NA			
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); TEM (Transmission Electron microscopy); CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Single Dwelling	Room 2	1		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Hardwood	good		
Walls	Painted drywall	good		BN-PS-44 - Beige over light beige over light tan BN-PS-45 White with yellow pattern over pink over beige
Ceiling	White painted drywall			
Paint	see samples			
Insulation	Pink fiberglass insul			
Piping	NA			
Lighting (fluorescent, incandescent, HG, vapour)	1			Serial #s (10% to be checked):
Thermostats (eg. Honeywell, etc.)	NA			Total: HG containing: Non-HG:
Lead Containing Materials	NA.			
Mould / Water Staining	on Baseboards			
Other (CO, VOCs, ODSs)	NA			
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Single Dwelling	Basement	Basement	Basement	

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	multiple layers of grey over concrete			BN-PS-51
Walls	white ^{over 2 layers of grey} painted Drywall grey over green over white _{concrete}			BN-PS-52 BN-PS-53
Ceiling	Open floor boards			
Paint	storage room yellow over grey concrete			BN-PS-54
Insulation	stairwell - grey over blue over orange over red wood			BN-PS-55
Piping	Ductwork			
Lighting (fluorescent, incandescent, HG, vapour)	4		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	NA		Total: HG containing: Non-HG:	
Lead Containing Materials	Dipin possible sault			
Mould / Water Staining	NA			
Other (CO, VOCs, ODSs)	Hot water tank			
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

BN-ASB-27 Grey Mortar
 BN-ASB-28 - Red brick
 BN-ASB-29 - insulation w foil backing
 on furnace
~~BN-ASB-30 - silver metal on chimney~~

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Simsy Dwelling	Hallway	2		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Hardwood	good		/
Walls	White painted drywall			BW-PS-46 White on bench BA-DUP
Ceiling	White painted drywall			
Paint				
Insulation	Pink FG insulation			
Piping	NA			
Lighting (fluorescent, incandescent, HG, vapour)	1			Serial #s (10% to be checked):
Thermostats (eg. Honeywell, etc.)	NA			Total: HG containing: Non-HG:
Lead Containing Materials	NA			
Mould / Water Staining	yes			
Other (CO, VOCs, ODSs)	NO			
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); TEM (Transmission Electron microscopy); CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Singapore Dwelling	Porteh 1	1		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	grey wood panel / Plaster on wood	Poor		BN-ASB-18 Grey wood panel flooring over mesh backing with grey adhesive BN-ASB-DUPZ
Walls	Paint on wood drywall.	Poor	Poor	BN-PS-33 Orange over tan over light yellow over light green over white
Ceiling	Paint on wood GYPROC			Some colours ↗ as
Paint	orange over +			↗ same as
Insulation	Pink fibreglass insulation			
Piping	NO			
Lighting (fluorescent, incandescent, HG, vapour)	1			Serial #s (10% to be checked):
Thermostats (eg. Honeywell, etc.)	NA			Total: HG containing: Non-HG:
Lead Containing Materials	NA			
Mould / Water Staining	yes			
Other (CO, VOCs, ODSs)	NO			
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); TEM (Transmission Electron microscopy); CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

BN-MD-04 → white paint inside room on wood
 BN-ASB-19 - white drywall plaster plaster on wall (point compound)

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Single dwelling	apteron			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls	white painted wood (drywall) junction H grey/dk grey/H grey			BN-PS-29 BN-PS-30
Ceiling-roof	red asphalt shingle w/ black paper			BN-ASB-17
Paint				
Insulation				
Piping				
Lighting (fluorescent, incandescent, HG, vapour)	incandescent		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)			Total: HG containing: Non-HG:	
Lead Containing Materials				
Mould / Water Staining				
Other (CO, VOCs, ODSs)				
Photos				

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Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

wooden frame? painted red BN-PS-31
red/orange/red

caulking in roof gutter dark grey BN-ASB-16

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Single Dwelling	Attic	3?	Attic	

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls				
Ceiling	Chimney Sample from basement			
Paint				
Insulation	pink fibreglass Sample from livingroom			
Piping				
Lighting (fluorescent, incandescent, HG, vapour)			Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)			Total: HG containing: Non-HG:	
Lead Containing Materials				
Mould / Water Staining				
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

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Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Single Dwelling	Room 4	2		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Hardwood			
Walls	Painted drywall			BN-PS-49 yellow in white pattern under green, one taken BN-PS-50 yellow over green over white
Ceiling	White painted gyproc			
Paint				
Insulation	Pink FG Insulation			
Piping	NA			
Lighting (fluorescent, incandescent, HG, vapour)	1		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	NA		Total: HG containing: Non-HG:	
Lead Containing Materials	NA			
Mould / Water Staining	walls / Bboards			
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); TEM (Transmission Electron microscopy); CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Singh Dwelling	Room 3	2		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Hardwood.			
Walls	Painted gyproc			BN-PS-47 DIP-2 Green on blue on white BN-PS-48 close to white on light green on dark green
Ceiling	Painted gyproc white			BN-ASB-26 drywall joint compound & plaster.
Paint				
Insulation	Pink Fiberglass Insul			
Piping	NA			
Lighting (fluorescent, incandescent, HG, vapour)	1			Serial #s (10% to be checked):
Thermostats (eg. Honeywell, etc.)	NA			Total: HG containing: Non-HG:
Lead Containing Materials	NA			
Mould / Water Staining	yes under window			MD-03 MD-06
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); TEM (Transmission Electron microscopy); CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Lighthouse	Interior			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	WOOD. on parter. concrete inside			
Walls	concrete & wood trim on doors & trim			BN-PS-56. Door frame grey over red over dark red over grey BN-PS-Dup-04
Ceiling	All concrete			
Paint				
Insulation	—			
Piping	—			
Lighting (fluorescent, incandescent, HG, vapour)	1			Serial #s (10% to be checked):
Thermostats (eg. Honeywell, etc.)	NO			Total: HG containing: Non-HG:
Lead Containing Materials	NA			
Mould / Water Staining	NA			
Other (CO, VOCs, ODSs)	—			
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

BN-PS-57 - Red ^{over green over dk green} paint on stairwell. red over green over dark green.


BN-PS-58 - Cylinder going up centre. grey over red over brown over white metal

BN-PS-59 - Beige over dark beige over concrete.

(BN-PS-Dup-03) on walls on top

BN-ASB-30 - painted silver mortar (grey)

Also taken from PS Bar



Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
<i>Light house</i>	<i>exterior</i>			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls	<i>concrete - painted white possible plaster</i>			BN-ASB-14 BN-ASB-14
Ceiling				
Paint				
Insulation				
Piping				
Lighting (fluorescent, incandescent, HG, vapour)			Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)			Total: HG containing: Non-HG:	
Lead Containing Materials				
Mould / Water Staining				
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); TEM (Transmission Electron microscopy); CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:
grey patching material on concrete BN-ASB-15

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Generator	1	1		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Painted floor Boards atop old wood	poor		BIU-PS-64 Multiple layers of grey.
Walls	white painted wood	"		BIU-PS-65 white.
Ceiling	white painted wood	"		
Paint				
Insulation	NA			
Piping	NA			
Lighting (fluorescent, incandescent, HG, vapour)	2			Serial #s (10% to be checked): - Too rusted to check.
Thermostats (eg. Honeywell, etc.)	1			Total: HG containing: Non-HG:
Lead Containing Materials	Piping possible solder.			
Mould / Water Staining	NA			
Other (CO, VOCs, ODSs)	NA			
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); TEM (Transmission Electron microscopy); CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Floors
 BIU-ASB-33 - Black material between boards (like grout) fibrous
 BIU-ASB-34 - flooring rolled grey with paper-backing

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
generator	exhaust			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls	metal panels over plywood painted white			BN-PS-25
Ceiling Roof	metal roof painted red			VPS- BN-PS-24
Paint				
Insulation	—			
Piping	XXXXXXXXXX			
Lighting (fluorescent, incandescent, HG, vapour)			Serial #s (10% to be checked):	24 14
Thermostats (eg. Honeywell, etc.)	—		Total: HG containing: Non-HG:	
Lead Containing Materials	XXXXXXXXXX XXXXXXXXXX			
Mould / Water Staining	XXXXXXXXXX			
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

BN-PS-24 red/orange red on exhaust

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Equipment Bldg	11 EQUIPT 1	1		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Painted concrete			BN-PS-61 - Multiple layers of grey concrete
Walls	Painted gypoc			BN-PS-60 Light grey on white.
Ceiling	Painted board			BN-ASB-31 drywall compound on ceiling BN-PS-62 white ceiling paint
Paint				
Insulation	Pink fiberglass insulation			BN-ASB-32 PINK FG insula w/ paper backing
Piping				
Lighting (fluorescent, incandescent, HG, vapour)	3 flu 1 incand			Serial #s (10% to be checked): Too rusted together to check
Thermostats (eg. Honeywell, etc.)				Total: HG containing: Non-HG:
Lead Containing Materials				
Mould / Water Staining				
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Equipment Cldg	exterior			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls	gray painted concrete foundation white painted wood siding			BN-PS-27 BN-PS-26
Ceiling	cracked plaster			
Paint	red trim over white			BN-PS-28
Insulation	—			
Piping	—			
Lighting (fluorescent, incandescent, HG, vapour)	1 incandescent		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	—		Total: HG containing: Non-HG:	
Lead Containing Materials	—			
Mould / Water Staining	—			
Other (CO, VOCs, ODSs)	—			
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Equipment Buildn	2	1		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Painted concrete same as ROOM 1			
Walls	Painted gyproc			BU-PS-63. white
Ceiling	Painted board same as white ROOM 1			
Paint				
Insulation	Pink fiberglass insul.			
Piping				
Lighting (fluorescent, incandescent, HG, vapour)	2.			Serial #s (10% to be checked): Tested to check Serial # 17A240E
Thermostats (eg. Honeywell, etc.)	yes 1			Total: HG containing: <u>Non-HG.</u>
Lead Containing Materials	Possible solder on electrical venting.			
Mould / Water Staining	NA-			
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); TEM (Transmission Electron microscopy); CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Storage shed 2	8	1	exterior	

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	unfinished concrete			
Walls	unfinished wood			
Ceiling	↑ ↑			
Paint	door frame			BN-PS-
Insulation	NA			
Piping	NA.			
Lighting (fluorescent, incandescent, HG, vapour)	1 ^o incandescent hook up.		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	NO.		Total: HG containing: Non-HG:	
Lead Containing Materials	NO.			
Mould / Water Staining	NO.			
Other (CO, VOCs, ODSs)	NO.			
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); TEM (Transmission Electron microscopy); CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Red shingles w/ ASB-35 / BN-ASB-D07-04
 Door frame - BN-PS-68 white over red over grey
 outside concrete BN-PS-67 various layers of grey
 outside paint on siding (white) BN-PS-66

white over red over grey
 BN-PS-69
 paint from window frame
 ADD-36
 white caulking on window

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
W, nch House	1	1		

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Painted concrete			
Walls	Unfinished walls: wood			BW-PS-73 door inside multiple layers of grey over red over white
Ceiling	Unfinished wood			BW-PS-74 floor multiple layers of grey & red
Paint				
Insulation	NA			
Piping	NA			
Lighting (fluorescent, incandescent, HG, vapour)	NA		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	NA		Total: HG containing: Non-HG:	
Lead Containing Materials				
Mould / Water Staining	N/A. wet concrete floors			
Other (CO, VOCs, ODSs)	N/A			
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Ext. BW-ASB-37 - roofing red shingles & felt.
 BW-PS-70 - exterior white paint on siding (wood)
 BW-PS-71 - red ^{over grey} paint on trim & doors (red over grey)
 BW-PS-72 - grey paint on exterior concrete
 Int. BW-PS-75 - window green, green over orange

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Videograph	1	1		See drawing

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	multiple layers of grey over concrete			BN-PS-76 DUP-5
Walls	white on plywood paint from baseboard (wood)			BN-PS-77
Ceiling	off-white paint on plywood			
Paint				
Insulation	white spray foam around wiring Beige spray foam on videograph machine			BN-ASB-38 BN-ASB-39
Piping	X			
Lighting (fluorescent, incandescent, HG, vapour)	4 incandescent			Serial #s (10% to be checked):
Thermostats (eg. Honeywell, etc.)	NO			Total: HG containing: Non-HG:
Lead Containing Materials	/			
Mould / Water Staining	NO			
Other (CO, VOCs, ODSs)				
Photos				

Legend: PS (paint sample); VPS (visual reference to PS); AS (asbestos sample); VAS (visual reference to AS); FS (fungal sample); ACM (asbestos-containing material); DJC (drywall joint compound); VFT (vinyl floor tile); ACT (acoustic ceiling tile); LF (linear feet); SF (square feet); PLM (polarized light microscopy); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Black fluffing from videograph machine BN-ASB-40
Attic - see pics

APPENDIX F
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 AMEC'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, AMEC must be notified in order that it may determine if modifications to the conclusions in the report are necessary.
8. The utilization of AMEC's services during the implementation of any remedial measures will allow AMEC to observe compliance with the conclusions and recommendations contained in the report. AMEC'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. AMEC 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 AMEC.