SPECIFICATION

REMOVAL OF VARIOUS SURPLUS INFRASTRUCTURE AT GULL ISLAND (CAPE ST. JOHN), LIGHT STATION

PROJECT NUMBER: F6879-171008

REGISTERED PROFESSIONAL ENGINEER
NEIL C. HUNT
SIGNATURE
DATE Jul 12/17
NEWFOUNDLAND & LABRADOR

PREPARED FOR

Fisheries and Oceans Canada

DATE

June 30, 2017
Revision 1

PROVINCE OF NEWFOUNDLAND
PERMIT HOLDER
This Permit Allows
APN ENGINEERING INC.
To practice Professional Engineering
in Newfoundland and Labrador.
Permit No. as issued by APEGN 10292
which is valid for the year 2017

Removal of Various Surplus Infrastructure
at the Gull Island Light station
P/N: F6879-171008 2017-06-30

DRAWING NO	TITLE
02E1401A016C01	Site Plan
02E1401A016C02	Plans Double Dwelling
02E1401A016C03	Elevations Double Dwelling
02E1401A016C04	Plans Main Equipment Building and Lower Equipment Building
02E1401A016C05	Plans Boathouse and Storage Shed #2
02E1401A016C06	Plans Winchhouse and Storage Shed #1

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 Gul Island Light station, Cape St. John, NL, in strict accordance with specifications and accompanying drawings and subject to all terms and conditions of the Contract.

.2 Under this contract, DFO will provide helicopter services for all slinging purposes associated with removing demolition debris from the site. The services will only be provided between the work site and La Scie. Contractor responsible for all slinging materials and activities (packaging, loading, off-loading, signallers, lifting hooks, clamps, rigging plans, etc.). The maximum amount of weight permitted during slinging operations is 1,200 pounds. 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). Off-loading locations (in La Scie) and rigging plans are to be approved by the Departmental Representative.

.3 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 La Scie. Mobilization is limited to four (4) return trips between La Scie and the work site. Similarly, demobilization is limited to four (4) return trips between La Scie 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. Similar to services provided during slinging demolition debris, 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 of the double dwelling. Note that the concrete foundation, including above grade concrete foundation walls associated with the dwelling 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 buildings, boathouse, winch house, hoists, landing areas, tramway and sheds as noted on the drawings.
.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.
.4 Removal and disposal 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 written demolition work plan.

1.3 SITE OF WORK

.1 Work will be carried out at Gull Island, 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 recommended that bidders visit the site and its surroundings and their own cost 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 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.

.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.

.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 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 SERVICES

.1 Where work involves breaking into or 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
.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 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 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.

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 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 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 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 Public Works and Government Services Canada 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 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.

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 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.
.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 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 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 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.

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, 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.

1.4 COMPLIANCE

.1 Comply with the Occupational Health and

REQUIREMENTS

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/

.2 COSH can be viewed at: www.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 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 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.

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 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.

.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 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.

.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 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 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 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.

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 should the Contractor choose to burn materials on site, 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.

.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 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, regulations, codes and guidelines.

.4 Dispose of construction waste materials and demolition debris, resulting from work, at approved landfill sites only. Carryout such disposal in strict accordance with provincial and municipal rules and regulations. Separate out and prevent improper disposal of items banned from landfills.

.5 Establish methods and undertake construction practices which will minimize waste and optimize use of construction materials. Separate at source all construction waste materials, demolition debris and product packaging and delivery containers into various waste categories in order to maximize recycling abilities of various materials and avoid disposal of debris at landfill site(s) in a "mixed state". Where recycling firms, specializing in recycling of specific materials exist, transport such materials to the recycling facility and avoid disposal at landfill sites.

.6 Communicate with landfill operator prior to commencement of work, to determine what specific construction, demolition and renovation waste materials have been banned from disposal at the landfill and at transfer stations.

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 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 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.

1.1 SANITARY FACILITIES

.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.

1.2 WATER SUPPLY

.1 Arrange, pay for and maintain temporary water supply in accordance with governing regulations and ordinances.

1.3 SCAFFOLDING

.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.

1.4 CONSTRUCTION SIGN AND NOTICES

.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.

1.5 REMOVAL OF TEMPORARY FACILITIES

.1 Remove temporary facilities from site when directed by Departmental Representative.

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.

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.

1.1 SECTION INCLUDES

.1 Project Record Documents as follows:

.1 Inventory of all materials removed off-site with weigh bill slips from the waste disposal site, hazardous waste disposal site and recycling facilities, where applicable.

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.

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 double dwelling. Note that the concrete foundation, including above grade concrete foundation walls associated with the dwelling 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 buildings, boathouse, winch house, hoists, landing areas, tramway and sheds as noted on the drawings.

.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.

.4 All materials present on the interior of the buildings are to be removed/disposed – 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, removal and disposal of hazardous building materials.

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 become property of contractor and will be removed from site and disposed of to satisfaction of Departmental Representative and in accordance with environmental guidelines. It is the sole responsibility of the contractor to dispose of all demolished materials at an approved disposal site. Ensure that disposal site is approved and willing to accommodate any materials disposed of from work site.

.2 Contractor shall obtain and pay for all necessary permits and disposal fees for use of an approved waste disposal site.

3.4 RESTORATION

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

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

3.5 HELICOPTER USE

.1 All debris removed if utilized by helicopter shall be properly prepared for slinging. All air lifts of material and equipment shall be with the use of slinging nets complete with inner liner which has been attached to the slinging nets. All nets being used must be transport approved for helicopter slinging operations. All staff must be trained in Helicopter slinging operations. The flight path shall avoid over salmon rivers if possible. The refueling of helicopters must be completed at approved locations and never near a water body. All helicopter costs are the responsibility of the Contractor.

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 disposal of the materials. Removal and disposal of the hazardous building materials are the sole responsibility of the Contractor. The Contractor is responsible for determining an approved waste site and paying all associated permitting, dumping and disposal fees.

.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 and disposed of as part of the demolition activities:

- Drywall including joint compound on the interior walls and ceilings contains asbestos and is to be disposed of in accordance with the NL Asbestos Abatement Regulations. Roofing shingles, underlying tar material, mastic material at roofing penetrations, heat shields on furnaces/stoves, cement board/siding (transite), caulking and vinyl flooring 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.

Loose, flaking paint from surfaces is to be drummed-up and disposed of as hazardous waste. Where paint is not flaking/peeling from construction materials, the material can be disposed of at one of the Regional Solid Waste Disposal sites, such as Robin Hood Bay. 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 are to remain, the paint is to be removed from the concrete surfaces and disposed of as hazardous lead waste.

- All thermostats and fluorescent light tubes potentially contain mercury and are to be recycled or disposed of at an approved facility.
- Fluorescent light ballasts are to placed in steel containers, transported as hazardous waste and disposed of 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 disposed of at a metal recycling facility.
- Residential type refrigerators and freezers are to be disposed of at a waste facility capable of accepting ozone depleting substances.
- Fire extinguishers are to be disposed of as household hazardous waste.
- Smoke alarms potentially containing radioactive materials, to be transported as dangerous goods and disposed of at a licensed disposal facility.
- In the absence of sampling, all treated timber (creosote and CCA timber) is to be disposed of as hazardous waste. The Departmental Representative will permit disposal of treated timber at one of the Regional Solid

Waste Disposal sites, such as Robin Hood Bay, if the Contractor chooses to sample the wood for leachability (at the Contractors cost) and the results are within the applicable leachability guidelines for creosote and metals compounds.

- Metal waste and other debris, including but not limited to electrical and mechanical equipment, tanks, pressure vessels, cables, pipes, tires, wood, etc. are scattered at various locations throughout the Site. Take inventory of these materials at the pre-tender site visit and carry disposal costs in Bid.

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.

.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 Before commencing work obtain from the appropriate agency and submit to Departmental Representative all necessary permits for transportation and disposal of hazardous waste (including asbestos waste). Ensure that waste disposal operator is fully aware of hazardous nature of material being dumped, and proper methods of disposal. Submit proof satisfactory to Departmental Representative that suitable arrangements have been made to receive and properly dispose of hazardous waste.

.2 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.

.3 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.

.4 Submit Workplace Health, Safety and Compensation Commission status and

transcription of insurance.

.5 Use procedures and equipment required to limit occupational and environmental exposure to lead when lead- containing paint is removed.

1.5 LEAD PAINT DISPOSAL .1 Disposal of lead waste must comply with Federal and Provincial regulations. Dispose of leachable lead waste in UN certified containers. Label containers with appropriate warning labels. Disposal of containers is to be at a certified treatment/disposal facility such as STABLEX.

1.6 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
GULL ISLAND LIGHTSTATION
GULL ISLAND,
NEWFOUNDLAND AND LABRADOR

Submitted to:
Public Works and Government Services Canada
Environmental Services
The John Cabot Building
10 Barters Hill, PO Box 4600
St. John's, NL
A1C 5T2

Submitted by:
AMEC Environment & Infrastructure
A Division of AMEC Americas Limited
133 Crosbie Road
St. John's, NL
A1B 4A5

March 2013

AMEC Project No. TF12076463

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), Fisheries and Oceans Canada (DFO), to conduct a Hazardous Building Materials Survey (HBMS) for the Gull Island Lightstation located on Gull Island, 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 Gull Island, approximately 9 kilometers (km) west of Cape St. John, in Notre Dame Bay in NL. 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 original lighthouse was constructed on the Site in 1884 and a fog horn was added to the Site in 1916.

The Site buildings are currently located on four separate areas of the Site: the upper and lower landing areas, the videograph area and the lower equipment building area. The upper landing area contains a light tower, a duplex dwelling, two storage sheds, a main equipment building, a battery shed, a winch house, a covered walkway, a tramway, a solar array and a helicopter landing pad. The lower landing area contains a boathouse and a helicopter landing pad. The videograph area contains a videograph building, a solar array and a helicopter landing pad. The lower equipment building area contains a lower equipment building and a helicopter landing pad.

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
Asbestos-Containing Materials (ACMs)	• 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. - Non-friable asbestos is present in the form of cement board/siding (transite), caulking, roofing tar and felt tar paper. • Results of the asbestos sampling and analytical program also revealed that there are building materials containing less than 1% asbestos by dry weight: - Mortar, fibreglass insulation with black paper backing, particle board with mesh backing and roofing tar. • 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 fire rated structures or building materials, and underground infrastructure and piping.	• It should be noted that the drywall and associated joint compound visible throughout the Site buildings varied in condition from good to poor; therefore, priority should be given to the removal of the deteriorated joint compound inside these areas of the Site buildings. • 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 a 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
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 Hazardous Products Act [HPA] criteria of 90 mg/kg for lead and 10 mg/kg for mercury). - The concentrations of lead in the paint samples ranged from 6.0 mg/kg to 32,000 mg/kg. - The concentrations of mercury in the paint samples ranged from non-detect (<1.0 mg/kg) to 33 mg/kg. - Fifteen (15) paint samples contained lead at concentrations above the former Federal HPA criterion of 5,000 mg/kg. - Three (3) paint samples contained mercury at concentrations above 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, 42 of the 53 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 11 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. Alternatively, the painted metal panels, metal staircase and metal window frames, if removed from the light tower during future renovation/demolition activities, may be sent to a metal recycling facility. - The paint collected at the Site was generally in fair to poor condition; 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.

Findings	Conclusions	Recommendations
Lead, Mercury and PCBs in Paint	• 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).	• 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: - 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.

Findings	Conclusions	Recommendations
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 the duplex dwelling and the lower equipment building. • Since the history of the original Lightstation dates back to 1884, with various upgrades since that time, 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	• Areas of SVG and/or water damage were observed in several areas on the interior surfaces of the duplex dwelling and storage shed #2. • Results of the mould sampling program revealed that abundant mould growth was present in the samples collected from the interior of the duplex dwelling and storage shed #2. • Existing conditions in the Site buildings (e.g., roof and window leaks, 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 areas of mould impacted materials observed at the Site, both the duplex dwelling and storage shed #2 should be remediated using Level 3 abatement procedures (i.e. more than 10 m^2), 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.
Lead and Mercury-Containing Equipment	• Mercury-containing thermostats were observed in the duplex dwelling and suspected mercury-containing fluorescent light tubes were observed in the duplex dwelling and main equipment building. • Mercury may also be present in high intensity discharge (HID) lights at the top of the light tower. • Several potential lead-acid batteries (i.e., solar batteries) were noted inside the videograph building and the battery shed at the time of the Site inspections.	• 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.

Findings	Conclusions	Recommendations
Lead and Mercury-Containing Equipment	• Samples of the drinking water at the Site buildings were not collected or analyzed during this assessment for the presence of lead. • The history of the original Lightstation dates back to 1884, with various upgrades since that time; 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.
PCB-Containing Equipment	• Based on the manufacturer's code on the fluorescent light ballasts that were inspected during this assessment, the light ballasts in the kitchen of the duplex dwelling and in the main equipment building are not likely to contain PCBs.	• 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.
Potential Sources of ODS	• Potential sources of ODSs identified during this assessment included three (3) refrigerators and a freezer in the duplex dwelling. The types of refrigerant(s) were not confirmed for the freezer or refrigerators at the time of this assessment.	• All ODSs should be removed by an approved contractor prior to disposing of the refrigerators and/or freezer from the Site building. • The use, storage, operation, maintenance, decommissioning, and disposal of ODS containing equipment in general is regulated at both a Provincial and Federal level and must comply with the most recent NL Halocarbon Regulations and the Federal Halocarbon Regulations. The status of the potential ODS containing equipment should be confirmed through a mechanical contractor or consultant.
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.

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

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), Fisheries and Oceans Canada (DFO), to conduct a Hazardous Building Materials Survey (HBMS) for the Gull Island Lightstation located on Gull Island, Newfoundland and Labrador (NL), herein referred to as the "Site" (refer to Figure 1, Appendix A and Photos 1 to 4, Appendix B). The HBMS was requested to provide PWGSC and DFO/CCG 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 Gull Island, approximately 9 kilometers (km) west of Cape St. John, in Notre Dame Bay in NL (refer to Figure 1, Appendix A). The Site covers an area of approximately 0.6 km^2 and 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 original lighthouse was constructed on the Site in 1884 and a fog horn was added to the Site in 1916. The Site buildings are currently located on four separate areas of the Site: the upper and lower landing areas, the videograph area and the lower equipment building area (refer to Figure 2, Appendix A).

The upper landing area contains a light tower, a duplex dwelling, two storage sheds (storage shed #1 and storage shed #2), a main equipment building, a battery shed, a winch house, a covered walkway, a tramway, a solar array and a helicopter landing pad (refer to Photo 1, Appendix B). The lower landing area contains a boathouse and a helicopter landing pad (refer to Photo 2, Appendix B). The videograph area contains a videograph building, a solar array and a helicopter landing pad (refer to Photo 3, Appendix B). The lower equipment building area contains a lower equipment building and a helicopter landing pad (refer to Photo 4, Appendix B). Structures no longer on the Site include a former single dwelling and former aboveground storage tanks (ASTs).

1.2 SITE BUILDING DESCRIPTIONS

Upper Landing Area

Light Tower

The light tower is a multi-storey, metal frame structure. The exterior of the light tower consists of metal and wood framed windows and doors. The roofing materials consist of painted metal panels.

The exterior walls are constructed of metal and concrete. The interior walls and wall finishes consist of painted concrete, painted metal panels, painted wood boards, painted wooden door frames and painted metal 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.

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 one-storey, wood frame structure with a poured concrete basement. The exterior of the duplex consists of wooden siding and wooden framed windows and doors. The roofing materials consist of asphalt shingles.

The interior walls and wall finishes consist of 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 and painted particleboard.

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

Tramway

The tramway is a painted wood and metal walkway, which extends from the duplex dwelling to the landing platform (refer to Figure 2, Appendix A).

Storage Shed #1

Storage shed #1 is a one-storey, wood frame structure with a poured concrete slab-on-grade foundation. The exterior of the shed consists of painted wooden siding and a wooden framed window and door. The roofing materials consist of asphalt shingles. The interior walls and ceiling consist of unfinished wood boards. The floor consists of painted wood panels. There are no lights and the shed is not heated.

Storage Shed #2

Storage shed #2 is a one-storey, wood frame structure with no foundation. The exterior of the shed consists of painted wooden siding and a wooden framed window and door. The roofing materials consist of asphalt shingles. The interior walls and ceiling finishes consist of painted drywall. The floor consists of painted wood boards and painted particleboard. Interior lighting consists of incandescent lights. Storage shed #2 is not heated.

Main Equipment Building

The main equipment building is a one-storey, wood frame structure with a poured concrete slab-on-grade foundation. The exterior of the main equipment building consists of cement board siding and wooden framed windows and doors. The roofing materials consist of asphalt shingles. The interior walls and ceiling consist of painted plywood and cement board. The floor consists of painted concrete and metal. Interior lighting consists of fluorescent lights. The main equipment building is not heated.

Battery Shed

The battery shed is a one-storey, wood frame structure with a poured concrete slab-on-grade foundation. The exterior of the battery shed consists of painted wooden siding and metal and wooden framed windows and doors. The roofing materials consist of asphalt shingles. The interior walls and ceiling consist of painted plywood. The floor consists of painted plywood. Interior lighting consists of incandescent lights. The battery shed is not heated.

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 painted wooden siding and wooden framed windows and doors. 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.

Covered Walkway

The covered walkway is a wood frame structure with no foundation. The exterior of the covered walkway consists of painted wooden siding and wooden framed windows and doors. The roofing materials consist of asphalt shingles. The interior walls, ceiling and floor consist of painted wood boards. Interior lighting consists of incandescent lights and the covered walkway not heated. The covered walkway connects to the light tower and main equipment building (refer to Figure 2, Appendix A).

Lower Landing Area

Boathouse

The boathouse is a one-storey, wood frame structure with a poured concrete slab-on-grade foundation. The exterior of the boathouse consists of painted 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 consist of unfinished wood boards. The floor consists of unpainted concrete. There are no lights and the boathouse is not heated.

Videograph Area

Videograph Building

The videograph building is a one-storey, wood frame structure with no foundation. The exterior of the videograph building consists of painted wooden siding and vinyl framed windows and doors (refer to Photo 3, Appendix B). The roofing materials consist of asphalt shingles. The interior walls, ceiling and floor consist of painted plywood. Interior lighting consists of incandescent lights. The videograph building is not heated.

Lower Equipment Building Area

Lower Equipment Building

The lower equipment building is a one-storey, wood frame structure with a poured concrete slab-on-grade foundation. The exterior of the lower equipment building consists of painted wooden siding and wooden framed windows and doors (refer to Photo 4, Appendix B). The roofing materials consist of asphalt shingles. The interior walls and ceiling consist of painted drywall and wood panels. The floor consists of painted concrete. The lower equipment building is not heated and there are no light fixtures present on the exterior or interior of the building. A brick chimney was observed in the building; therefore, the lower equipment building appears to have been formerly heated by possibly a stove or a furnace (no longer present).

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, Gull Island, 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. 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 buildings.

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 December 2 and 5, 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 14, Appendix A. Sample locations are also shown in Photos 5 to 44, 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, five paint samples were analyzed for lead leachate and one paint sample was 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 14, Appendix A. Sample locations are also shown in Photos 45 to 97, 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 samples were collected from areas of SVG to confirm the presence of mould growth.

Mould samples were collected by removing a 2.0 cm by 2.0 cm piece of material (where possible) from the area of SVG. 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 12, Appendix A. Sample locations are also shown in Photos 98 and 99, 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

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 40 building material samples (GULL-AS-1 to Gull-AS-40) plus four (4) duplicate samples (GULL-AS-DUP1, GULL-AS-DUP-2, GULL-AS-DUP-3, GULL-AS-DUP-4; duplicates of GULL-AS-10, GULL-AS-16, GULL-AS-24 and GULL-AS-39, respectively) were collected from the Site buildings and analyzed for asbestos content (refer to Photos 5 to 44, 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 14, 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

Painted drywall was observed on the walls and ceilings in various areas throughout the lower equipment building and duplex dwelling. The following samples of drywall joint compound were

collected:

- Three (3) samples of drywall joint compound (GULL-AS-4, GULL-AS-8 and GULL-AS-10) plus one (1) field duplicate sample (GULL-AS-DUP-1, duplicate of GULL-AS-10) were collected from interior walls and a ceiling in the duplex dwelling and analyzed for asbestos content (refer to Photos 8, 12 and 14, Appendix B).
- One (1) sample of drywall joint compound (GULL-AS-25) was collected from an interior wall of the lower equipment building and analyzed for asbestos content (refer to Photo 29, Appendix B).

Chrysotile asbestos (ranging from 3% to 5%) was detected in all of the drywall joint compound samples 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 dwelling and the lower equipment building) are considered to be ACMs.

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

4.1.2.3 Vinyl Flooring Products and Mastics

Vinyl flooring was not observed in any of the Site buildings during the Site visits, therefore no samples of vinyl floor tile were collected for analysis during this assessment.

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

Ten (10) samples of asphalt shingle roofing material (GULL-AS-14, GULL-AS-18, GULL-AS-20, GULL-AS-22, GULL-AS-23, GULL-AS-24, GULL-AS-28, GULL-AS-32, GULL-AS-38 and GULL-AS-39) plus two (2) field duplicate samples (GULL-AS-DUP-3 and GULL-AS-DUP-4, duplicates of GULL-AS-24 and GULL-AS-39, respectively) were collected from the roofs of the Site buildings (duplex dwelling, main equipment building, battery shed, winch house, covered walkway, storage shed #1, lower equipment building, storage shed #2, videograph building and boathouse) and analyzed for asbestos content (refer to Photos 18, 22, 24, 26, 27, 28, 32, 36, 42 and 43, Appendix B).

Chrysotile asbestos (ranging from 1.1% to 19%) was detected in samples GULL-AS-DUP-3 (i.e. tar on green/black asphalt shingle collected from storage shed #1; duplicate of GULL-AS-24) and GULL-AS-DUP-4 (i.e. tar on red/black asphalt shingle collected from the boathouse; duplicate of GULL-AS-39) at levels above the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., <1%). Chrysotile asbestos (0.35%) was detected in sample GULL-AS-39 (i.e. tar on red/black asphalt shingle collected from the boathouse) at a level below the applicable *NL*

Asbestos Abatement Regulations (111/98) (i.e., <1%). Asbestos was not detected in Sample GULL-AS-24 (i.e. green/black asphalt shingle collected from storage shed #1). Therefore, the roofing materials on storage shed #1 and the boathouse are considered to be ACMs. Is it important to note that, based on the laboratory report, all of the asphalt shingles in samples GULL-AS-24/GULL-AS-DUP-3 and GULL-AS-39/GULL-AS-DUP-4 were negative for asbestos, whereas, the roofing tar in samples GULL-AS-DUP-3 and GULL-AS-39/GULL-AS-DUP-4 were positive for asbestos. Asbestos was not detected in the other roofing material samples collected and submitted for analysis.

The asphalt shingles visible on the roof of storage shed #1 (covering an area of approximately 3 m^2) as observed from the ground surface appeared to be generally intact and in good condition. The asphalt shingles visible on the roof of the boathouse (covering an area of approximately 22.5 m^2) as observed from the ground surface appeared to be generally intact and in fair condition.

4.1.2.6 Thermal System Insulation

One sample of electrical wiring insulation (GULL-AS-2) was collected from the duplex dwelling (north side basement) and analyzed for asbestos content (refer to Photo 6, Appendix B). Asbestos was not detected in the wiring insulation sample collected and submitted for analysis.

Two (2) samples of pink fibreglass insulation with tar and beige paper backing (GULL-AS-7 and GULL-AS-9) were collected from the duplex dwelling (north side living room and south side bedroom 1) and analyzed for asbestos content (refer to Photos 11 and 13, Appendix B). Two (2) samples of pink fibreglass insulation with black paper backing (GULL-AS-29 and GULL-AS-31) were collected from the lower equipment building (exterior and interior) and analyzed for asbestos content (refer to Photos 33 and 35, Appendix B). Chrysotile asbestos (<0.25%) was detected in sample GULL-AS-31 (i.e. pink fibreglass with black paper backing collected from the interior of the lower equipment building) at a level below the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., <1%). Asbestos was not detected in the other pink fibreglass insulation with paper backing samples collected and submitted for analysis.

4.1.2.7 Weather Stripping and Caulking

No samples of weather stripping were collected during this assessment.

Window caulking was observed on the exterior or interior of the duplex dwelling, light tower, lower equipment building, storage shed #2 and videograph building. The following samples of window caulking were collected:

- One (1) sample of white caulking (GULL-AS-13) was collected from around a window on the exterior of the duplex dwelling and analyzed for asbestos content (refer to Photo 17, Appendix B).

- One (1) sample of beige caulking (GULL-AS-19) was collected from around windows on the interior of the top floor of the light tower and analyzed for asbestos content (refer to Photo 23, Appendix B).
- One (1) sample of beige caulking (GULL-AS-30) was collected from around a window on the exterior of the lower equipment building and analyzed for asbestos content (refer to Photo 34, Appendix B).
- One (1) sample of black over grey caulking (GULL-AS-35) was collected from around a window on the exterior of storage shed #2 and analyzed for asbestos content (refer to Photo 39, Appendix B).
- One (1) sample of grey caulking (GULL-AS-37) was collected from around a window on the exterior of the videograph building and analyzed for asbestos content (refer to Photo 41, Appendix B).

Asbestos was not detected in the window caulking samples collected from the duplex dwelling, lower equipment building, storage shed #2 or videograph building. Chrysotile asbestos (3.9%) was detected in sample GULL-AS-19 at a level above the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., >1%) and therefore this material (i.e., beige caulking collected from around windows on the interior of the top floor of the light tower) is considered to be an ACM.

Two (2) samples of white caulking (GULL-AS-21 and GULL-AS-36) were collected from around electrical conduit on the exterior of the battery shed and videograph building and analyzed for asbestos content (refer to Photos 25 and 40, Appendix B). Chrysotile asbestos (13.3%) was detected in sample GULL-AS-36 at a level above the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., <1%) and therefore this material (i.e., white caulking collected from around electrical conduit on the exterior of the videograph building) is considered to be an ACM.

4.1.2.8 Mortar, Grout and Other Cementitious Materials

Three (3) samples of grey brick mortar (GULL-AS-1, GULL-AS-12 and GULL-AS-26) were collected from chimneys in the duplex dwelling basement (north and south sides) and the lower equipment building (interior) and analyzed for asbestos content (refer to Photos 5, 16 and 30, Appendix B. Chrysotile asbestos (<1%) was detected in sample GULL-AS-26 (i.e. grey brick mortar collected from the lower equipment building) at a level below the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., <1%). Asbestos was not detected in the brick mortar samples collected from the duplex dwelling.

One sample of grey cement board (GULL-AS-16) plus one (1) field duplicate sample (GULL-AS-DUP-2) were collected from an exterior wall in the main equipment building battery room and analyzed for asbestos content (refer to Photo 20, Appendix B). Chrysotile asbestos (15%) was detected in samples GULL-AS-16 and GULL-AS-DUP-2 at a level above the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., >1%) and therefore this material (i.e., grey cement board collected from the main equipment building) is considered to be an ACM. The cement board (i.e. transite) (covering an area of approximately 42 m^2) observed on the walls and ceiling of the main equipment building appeared to be generally intact and in fair condition.

One sample of a grey cement board siding with black felt tar paper (GULL-AS-17) was collected from the exterior of the main equipment building and analyzed for asbestos content (refer to Photo 21, Appendix B). Chrysotile asbestos (10%) was detected in sample GULL-AS-17 at a level above the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., >1%) and therefore this material (i.e., grey cement board siding collected from the exterior of the main equipment building) is considered to be an ACM. The cement board (i.e. transite) siding (covering an area of approximately 45 m^2) observed on the exterior of the main equipment building appeared to be generally intact and in fair condition.

4.1.2.9 Other Potential ACMs

Two (2) samples of particle board (GULL-AS-3 and GULL-AS-33) were collected from the floors of the duplex dwelling (north side kitchen) and storage shed #2 and analyzed for asbestos content (refer to Photos 7 and 37, Appendix B). One (1) sample of tile particle board (GULL-AS-5) was also collected from a wall in the duplex dwelling (north side kitchen) and analyzed for asbestos content (refer to Photo 9, Appendix B). Chrysotile asbestos (0.58%) was detected in sample GULL-AS-33 (i.e. grey painted particle board with mesh backing collected from the floor of storage shed #2) at a level below the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., <1%). Asbestos was not detected in the particle board flooring or tile particle board samples collected from the duplex dwelling (north side kitchen).

One (1) sample of blue countertop (GULL-AS-6) and one (1) sample of green countertop (GULL-AS-11) were collected from the duplex dwelling (north and south side kitchens) and analyzed for asbestos content (refer to Photos 10 and 15, Appendix B). Asbestos was not detected in the countertop samples collected and submitted for analysis.

Four (4) samples of felt tar paper (GULL-AS-15, GULL-AS-27, GULL-AS-34 and GULL-AS-40) were collected from the exterior of the covered walkway, lower equipment building, storage shed #2 and boathouse and analyzed for asbestos content (refer to Photos 19, 31, 38 and 44, Appendix B). Chrysotile asbestos (4.3%) was detected in sample GULL-AS-27 at a level above the applicable *NL Asbestos Abatement Regulations (111/98)* (i.e., >1%) and therefore this material (i.e., felt tar paper collected from the exterior of the lower equipment building) is considered to be an ACM. Asbestos was not detected in the other felt tar paper samples collected and submitted for analysis.

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 was generally in fair to poor condition. Peeling and flaking paint was observed on the interior and/or exterior of all of the Site buildings (refer to Photos 45, 47, 58, 66 and 84, Appendix B).

A total of fifty-three (53) samples (GULL-PS-1 to GULL-PS-53) plus five (5) field duplicate samples (GULL-PS-DUP-1, GULL-PS-DUP-2, GULL-PS-DUP-3, GULL-PS-DUP-4 and GULL-PS-DUP-5, duplicates of GULL-PS-1, GULL-PS-10, GULL-PS-19, GULL-PS-41 and GULL-PS-44, respectively) were collected from painted surfaces of the Site buildings and analyzed for lead and mercury content (refer to Photos 45 to 97, Appendix B). Five (5) paint samples (GULL-PS-1, GULL-PS-19, GULL-PS-20, GULL-PS-37 and GULL-PS-51) 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 14, Appendix A.

Since the concentrations of lead detected in fifteen (15) paint samples (GULL-PS-8, GULL-PS-10, GULL-PS-18, GULL-PS-22, GULL-PS-25 to GULL-PS-28, GULL-PS-33, GULL-PS-34, GULL-PS-38, GULL-PS-40, GULL-PS-43, GULL-PS-52 and GULL-PS-53) 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. The laboratory results for lead leachate in paint are presented in Table C-5, Appendix C.

The concentrations of mercury detected in three (3) paint samples (GULL-PS-26, GULL-PS-38 and GULL-PS-52) exceeded the CCME CSQG of 24 mg/kg for mercury in soil at a commercial site. These paint samples were also tested for mercury leachate using the TCLP to determine whether or not the paint would be considered hazardous waste upon removal from the Site. 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 6.0 mg/kg to 32,000 mg/kg (refer to Table C-2, Appendix C). Thirty-two (32) of the 53 paint samples plus four (4) field duplicate samples (GULL-PS-DUP-1, GULL-PS-DUP-3, GULL-PS-DUP-4 and GULL-PS-DUP-5, duplicates of GULL-PS-1, GULL-PS-19, GULL-PS-41 and GULL-PS-44) 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. Fifteen (15) paint samples (GULL-PS-8, GULL-PS-10, GULL-PS-18, GULL-PS-22, GULL-PS-25 to GULL-PS-28, GULL-PS-33, GULL-PS-34, GULL-PS-38, GULL-PS-40, GULL-PS-43, GULL-PS-52 and GULL-PS-53) plus one (1) field duplicate sample (GULL-PS-DUP-2, duplicate of GULL-PS-10) contained lead at concentrations above the former Federal HPA criterion of 5,000 mg/kg. All of the other paint samples contained lead at concentrations 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 GULL-PS-18 (19 mg/L), GULL-PS-22 (16 mg/L), GULL-PS-25 (71 mg/L), GULL-PS-26 (130 mg/L), GULL-PS-27 (17 mg/L), GULL-PS-28 (150 mg/L), GULL-PS-33 (150 mg/L), GULL-PS-38 (10 mg/L), GULL-PS-43 (38 mg/L), GULL-PS-52 (11 mg/L) and GULL-PS-53 (21 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:

- GULL-PS-18 (White paint collected from siding on the exterior of the duplex dwelling);
- GULL-PS-22 (White paint collected from siding on the exterior of the covered walkway);
- GULL-PS-25 (Red paint collected from metal panels on the exterior of the light tower);
- GULL-PS-26 (Red paint collected from metal panels on the exterior of the light tower);
- GULL-PS-27 (White paint collected from metal staircase on the interior of the light tower);
- GULL-PS-28 (White paint collected from metal window frame on the interior of the light tower);
- GULL-PS-33 (Green paint collected from siding on the exterior of the covered walkway);
- GULL-PS-38 (Orange/red paint collected from wood trim on the exterior of storage shed #1);
- GULL-PS-43 (White paint collected from siding on the exterior of the lower equipment building);
- GULL-PS-52 (White paint collected from siding on the exterior of the boathouse); and
- GULL-PS-53 (Orange paint collected from wood trim on the exterior of the boathouse).

The paint collected was generally in fair to poor condition and flaking. Since the concentrations of leachable lead in these paints are at levels considered to be hazardous, these paints, if removed from the Site, must be disposed of at a hazardous waste treatment facility. Alternatively, the painted metal panels, staircase and window frames, if removed from the light tower during future renovation / demolition activities, may be sent to a metal recycling facility.

4.2.3 Mercury in Paint

The concentrations of mercury in the paint samples ranged from non-detect (<1.0 mg/kg) to 33 mg/kg (refer to Table C-3, Appendix C). Thirteen (13) of the 53 paint samples (GULL-PS-2, GULL-PS-6, GULL-PS-14, GULL-PS-18, GULL-PS-22, GULL-PS-24, GULL-PS-37, GULL-PS-43 to GULL-PS-47 and GULL-PS-53) plus one (1) field duplicate sample (GULL-PS-DUP-5, duplicate of GULL-PS-44) contained mercury at concentrations above the Federal HPA criterion of 10 mg/kg but below the CCME CSQG of 24 mg/kg. Three (3) paint samples (GULL-PS-26, GULL-PS-38 and GULL-PS-52) contained mercury at concentrations above the CCME CSQG of 24 mg/kg for mercury in soil at a commercial site (refer to Photos 70, 82 and 96, Appendix B).

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 paint samples GULL-PS-26 (0.00014 mg/L), GULL-PS-38 (0.00099 mg/L) and GULL-PS-52 (0.00063 mg/L) 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, these paints were leachable for lead. Therefore, if removed from the Site, these paints must be disposed of at a hazardous waste treatment facility.

4.2.5 PCBs in Paint

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) (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 the duplex dwelling and the lower equipment building (refer to Photos 11, 13, 33 and 35, Appendix B). Since the history of the original Lightstation dates back to 1884, with various upgrades since that time, 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 14, 47, 58 and 59, Appendix B). No building cavity inspections were performed by AMEC during this assessment. Areas of SVG and/or water damage were observed in several areas on the interior surfaces of the duplex dwelling and storage shed #2. A total of two (2) samples (GULL-MD-01 and GULL-MD-02) were collected from the duplex dwelling north side kitchen (ceiling) and storage shed # 2 (ceiling) and analyzed for mould growth (refer to Figures 3 and 12, Appendix A and Photos 98 and 99, Appendix B). The laboratory results confirmed that 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 *Stachybotrys*, *Cladosporium, Ulocladium, Acremonium, Aspergillus* and *Penicillium*.

4.5 MERCURY-CONTAINING THERMOSTATS

Two (2) types of thermostats were identified inside the duplex dwelling during the investigation (refer to Photos 100 and 101, Appendix B). Results of the thermostat inspection are summarized in Table 1.

Table 1: Thermostat Descriptions

Description of Thermostat	Manufacturer	Location Observed	No. Observed	Thermostat Inspected (Yes/No)	Mercury Switch (Yes/No)
White rectangular casing, wall-mounted	Honeywell	Duplex Dwelling Kitchen / Hall (North Side)	1	Yes	Yes
Gold rectangular casing, wall-mounted	Honeywell	Duplex Dwelling Living Room (North side)	1	Yes	Yes

4.6 PCB-CONTAINING LIGHT BALLASTS

Two types of fluorescent light ballasts were observed during the Site inspections (refer to Photos 102 and 103, Appendix B). A total of five (5) ballasts were inspected. Results of the light ballast inspection are summarized in Table 2.

Table 2: Fluorescent Light Ballast Descriptions

Manufacturer	Cat./Serial No.	Location Observed	No. Inspected	Condition	Potential PCBs (Yes/No)
Advance	RM-2S35-TP	Duplex Dwelling Kitchen (North Side)	1	Poor	No
CGE Gold Label	17A240E	Main Equipment Building	4	Poor	No

4.7 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 during this assessment included three refrigerators and a freezer in the duplex dwelling (refer to Photo 104, Appendix B). The types of refrigerant(s) were not confirmed for the freezer and refrigerators at the time of this assessment.

Although three (3) fire extinguishers (i.e. dry chemical) were identified in the duplex dwelling, the labels on these units did not indicate the presence of halon or other ODS ingredients (refer to Photo 105, 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 in the duplex dwelling and the main equipment 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 history of the original Lightstation dates back to 1884, with various upgrades since that time, 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. 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 and the battery shed at the time of the Site inspections (refer to Photo 106, Appendix B).

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.

4.9 QA/QC DISCUSSION

Details regarding the QC assessment of surrogate recoveries, 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 GULL-PS-1, GULL-PS-19, GULL-PS-20 and GULL-PS-37 were not within the acceptable QC limits. 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 3.

Table 3: Field Duplicate RPDs

Duplicate Sample ID	Original Sample ID	RPD – Lead %	RPD- Mercury %
GULL-PS-DUP1	GULL-PS-1	66.7	NC
GULL-PS-DUP2	GULL-PS-10	8.0	15.7
GULL-PS-DUP3	GULL-PS-19	---	25.6
GULL-PS-DUP4	GULL-PS-41	37.6	18.2
GULL-PS-DUP5	GULL-PS-44	55.0	24.4

Notes:
--- denotes sample results are identical (i.e. 0.0%).
NC denotes RPD not calculated (i.e. result(s) less than reportable detection limit).

All of the 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 4.

Table 4: Laboratory Duplicate RPDs

Laboratory Duplicate Sample ID	Original Sample ID	RPD – Lead %	RPD- Mercury %
GULL-PS-3 Lab-Dup	GULL-PS-3	---	NC
GULL-PS-14 Lab-Dup	GULL-PS-14	42.9	7.4
GULL-PS-34 Lab-Dup	GULL-PS-34	76.9	---
GULL-PS-51 Lab-Dup	GULL-PS-51	40.9	---
GULL-PS-DUP3 Lab-Dup	GULL-PS-DUP3	2.9	58.8
GULL-PS-3 Lab-Dup2	GULL-PS-3	7.4	NC
GULL-PS-14 Lab-Dup2	GULL-PS-14	6.1	15.4
GULL-PS-34 Lab-Dup2	GULL-PS-34	28.6	---
GULL-PS-51 Lab-Dup2	GULL-PS-51	64.3	---
GULL-PS-DUP3 Lab-Dup2	GULL-PS-DUP3	26.7	37.8

Notes:
--- denotes sample results are identical (i.e. 0.0%).
NC denotes RPD not calculated (i.e. result(s) less than reportable detection limit).

All of the RPDs were reported within 100% proof of equivalency.

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. Non-friable asbestos is present in the form of cement board/siding (transite), caulking, roofing tar and felt tar paper. It should be noted that the drywall and associated joint compound visible throughout the Site buildings varied in condition from good to poor; therefore, priority should be given to the removal of the deteriorated joint compound 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 mortar, fibreglass insulation with black paper backing, particle board with mesh backing and roofing tar.
- 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 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 a 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 6.0 mg/kg to 32,000 mg/kg and the concentrations of mercury in the paint samples ranged from non-detect (<1.0 mg/kg) to 33 mg/kg.
    - Fifteen (15) paint samples contained lead at concentrations above the former Federal HPA criterion of 5,000 mg/kg.
    - Three (3) paint samples contained mercury at concentrations above 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, 42 of the 53 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 11 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. Alternatively, the painted metal panels, metal staircase and metal window frames, if removed from the light tower during future renovation/ demolition activities, may be sent to a metal recycling facility.
    - The paint collected at the Site was generally in fair to poor condition; 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 the duplex dwelling and the lower equipment building. Since the history of the original Lightstation dates back to 1884, with various upgrades since that time, 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 and/or water damage were observed in several areas on the interior surfaces of the duplex dwelling and storage shed #2. A total of two (2) samples were collected from duplex dwelling north side kitchen (ceiling) and storage shed # 2 (ceiling) and analyzed for mould growth. Results of the mould sampling program revealed that abundant mould growth was present in the samples collected from the interior of the duplex dwelling and storage shed #2. Existing conditions in the Site buildings (*e.g.,* roof and window leaks, 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 areas of mould impacted materials observed at the Site, both the duplex dwelling and storage shed #2 should be remediated using Level 3 abatement procedures (i.e. more than 10 m^2), 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.

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. The history of the original Lightstation dates back to 1884, with various upgrades since that time; 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 and the battery shed at the time of the Site inspections.
- Mercury-containing thermostats were observed in the duplex dwelling and suspected mercury-containing fluorescent light tubes were observed in the duplex dwelling and main equipment building.
- Mercury may also be present in the 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., light tubes, bulbs, thermostats, etc.) 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

- Based on the manufacturer's code on the fluorescent light ballasts that were inspected during this assessment, the light ballasts in the kitchen of the duplex dwelling and in the main equipment building are not likely to contain PCBs.
- 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.

Potential Sources of ODSs

- Potential sources of ODSs identified during this assessment included three (3) refrigerators and a freezer in the duplex dwelling. The types of refrigerant(s) were not confirmed for the freezer or refrigerators at the time of this assessment. All ODSs should be removed by an approved contractor prior to disposing of the refrigerators and/or freezer from the Site building.
- The use, storage, operation, maintenance, decommissioning, and disposal of ODS containing equipment in general is regulated at both a Provincial and Federal level and must comply with the most recent NL Halocarbon Regulations and the Federal Halocarbon Regulations. The status of the potential ODS containing equipment should be confirmed through a mechanical contractor or consultant.

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.

6.0 CLOSURE

This report was prepared for the exclusive use of PWGSC and DFO/CCG. 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.

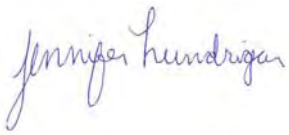
AMEC makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect 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,

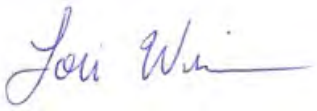
AMEC Environment & Infrastructure
A Division of AMEC Americas Limited

Prepared by:



Jennifer Lundrigan, B.Sc.
Environmental Scientist

Reviewed by:



Lori Wiseman, P.Eng
Project Manager

7.0 REFERENCES

Agency for Toxic Substances and Disease Registry. 1999. ToxFAQs™ for Formaldehyde. http://www.atsdr.cdc.gov/tfacts111.html

Canadian Construction Association. 2004. Mould Guidelines for the Canadian Construction Industry.

Canadian Council of Ministers of the Environment. 1999 and various updates. Canadian Environmental Quality Guidelines. http://cegg-rcge.ccme.ca/?config=ccme&thesite=cegg&words=&image.x=11&image.y=10

Canadian Council of Ministers of the Environment. 1999 and various updates. Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health. http://cegg-rcge.ccme.ca/?config=ccme&thesite=cegg&words=&image.x=11&image.y=10

Canada Mortgage Housing Corporation. Urea-Formaldehyde Foam Insulation (UFFI). http://www.cmhc-schl.gc.ca/en/co/maho/yohoyohe/inaiqu/inaiqu_008.cfm

Environmental Abatement Council of Ontario. 2010. Mould Abatement Guidelines.

Environment Canada. Identification of light Ballast Containing PCBs. Environment Canada's Environmental Protection Series Report (EPS 2/CC/2, August 1991).

Government of Canada. Canadian Environmental Protection Act, 1999 (S.C. 1999, c. 33). http://laws-lois.justice.gc.ca/eng/acts/C-15.31/

Government of Canada. Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149). http://laws-lois.justice.gc.ca/eng/regulations/SOR-2005-149/index.html

Government of Canada. Federal Halocarbon Regulations, 2003 (SOR/2003-289). http://laws.justice.gc.ca/eng/regulations/SOR-2003-289/index.html

Government of Canada. Hazardous Products Act (R.S.C., 1985, c. H-3). http://laws-lois.justice.gc.ca/eng/acts/H-3/

Government of Canada. Interprovincial Movement of Hazardous Waste Regulations (SOR/ 2002-301). http://laws-lois.justice.gc.ca/eng/regulations/SOR-2002-301/index.html

Government of Canada. PCB Regulations (SOR/2008-273). http://laws-lois.justice.gc.ca/eng/regulations/SOR-2008-273/index.html

Government of Canada. PCB Waste Export Regulations, 1996 (SOR/97-109). http://laws-lois.justice.gc.ca/eng/regulations/SOR-97-109/index.html

Government of Canada. Regulations Amending the PCB Regulations (SOR/2010-57). http://canadagazette.gc.ca/rp-pr/p2/2010/2010-03-31/html/sor-dors57-eng.html

Government of Canada. Regulations Amending the Surface Coating Materials Regulations (SOR/2010-224). http://www.gazette.gc.ca/rp-pr/p2/2011/2011-02-16/html/sor-dors14-eng.html

Government of Canada. Surface Coating Materials Regulations (SOR/2005-109). http://laws-lois.justice.gc.ca/eng/regulations/SOR-2005-109/FullText.html

Government of Canada. Transportation of Dangerous Goods Act, 1992 (1992, c. 34). http://www.tc.gc.ca/eng/acts-regulations/acts-1992c34.htm

Government of Canada. Transportation of Dangerous Goods Regulations (SOR/2012-245). http://www.tc.gc.ca/eng/tdg/clear-menu-497.htm

Government of Newfoundland and Labrador. Environmental Protection Act (SNL2002 cE-14.2). http://www.assembly.nl.ca/legislation/sr/statutes/e14-2.htm

Government of Newfoundland and Labrador. Storage of PCB Wastes Regulations (61/03). http://www.assembly.nl.ca/legislation/sr/annualregs/2003/Nr030061.htm

Government of Newfoundland and Labrador. Halocarbon Regulations (41/05). http://www.assembly.nl.ca/legislation/sr/regulations/rc050041.htm

Government of Newfoundland and Labrador. Dangerous Goods Transportation Act (RSNL1990 Chapter D-1). http://assembly.nl.ca/legislation/sr/statutes/d01.htm

Government of Newfoundland and Labrador, Department of Environment, Pollution Prevention Division. Guidance Document, Leachable Toxic Waste, Testing and Disposal (2003, GD-PPD - 26.1).

Government of Newfoundland and Labrador, Department of Environment and Conservation. Guidance Document for the Management of Impacted Sites (2005, Version 1.01).

Government of Newfoundland and Labrador. Occupational Health and Safety Act (RSNL1990 Chapter O-3). http://assembly.nl.ca/legislation/sr/statutes/o03.htm

Government of Newfoundland and Labrador. Occupational Health and Safety Regulations (5/12). http://www.assembly.nl.ca/legislation/sr/regulations/rc120005.htm

Government of Newfoundland and Labrador. Asbestos Abatement Regulations (111/98). http://assembly.nl.ca/Legislation/sr/regulations/rc980111.htm

Health Canada. Guidelines for Canadian Drinking Water Quality. http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/2012-sum_guide-res_recom/index-eng.php

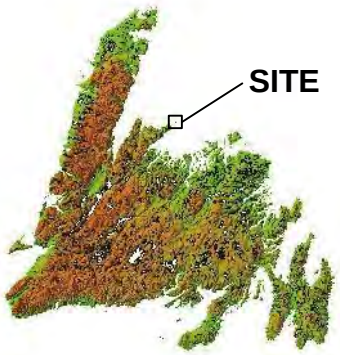
National Institute of Building Sciences. 1995. Lead-Based Paint Operations and Maintenance Work Practices Manual for Homes and Buildings.

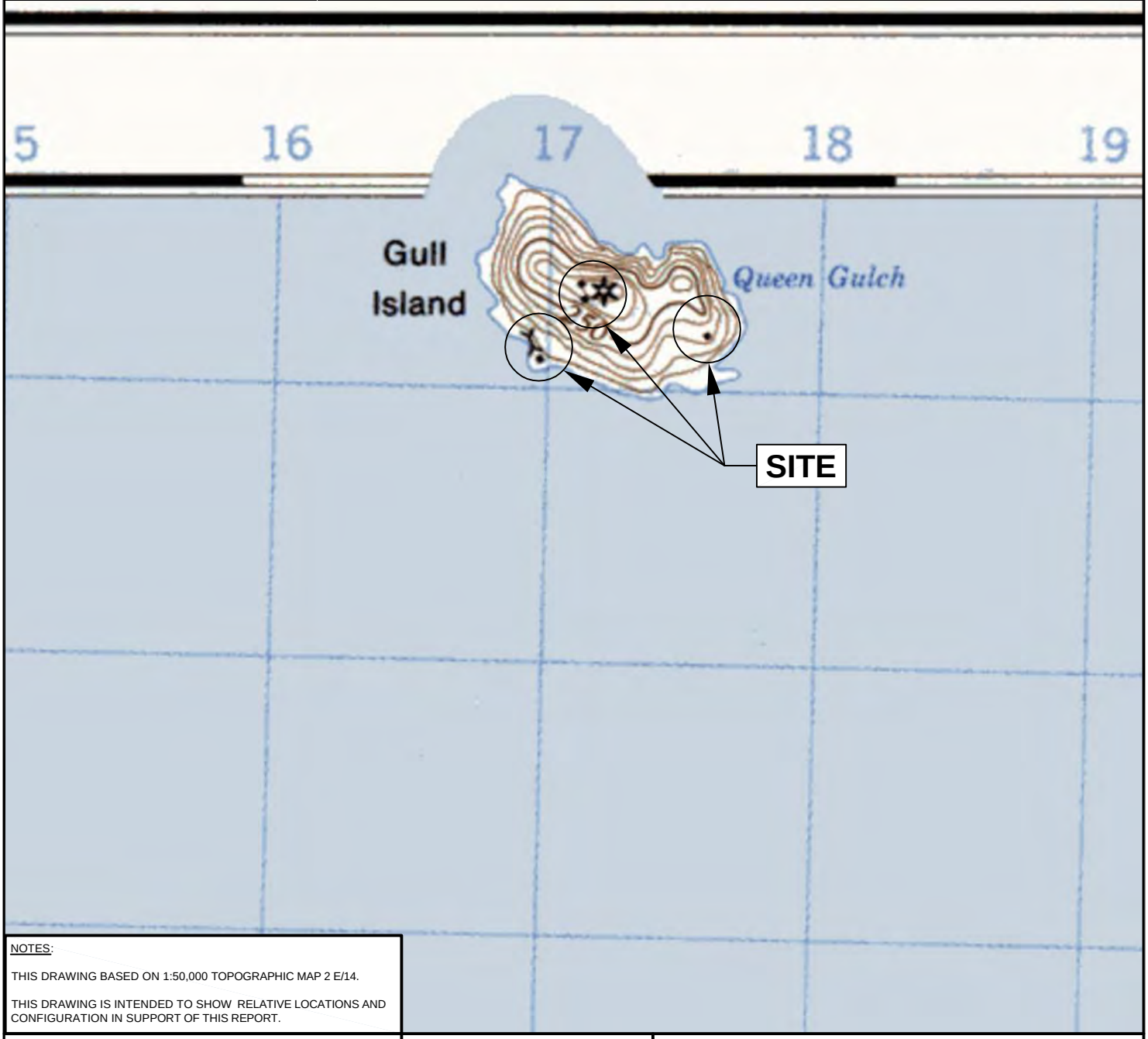
National Research Council Canada. 2010. National Plumbing Code of Canada.

United States Environmental Protection Agency. 2009. Formaldehyde. http://www.epa.gov/iaq/formalde.html

APPENDIX A

Figures





NOTES:

THIS DRAWING BASED ON 1:50,000 TOPOGRAPHIC MAP 2 E/14.

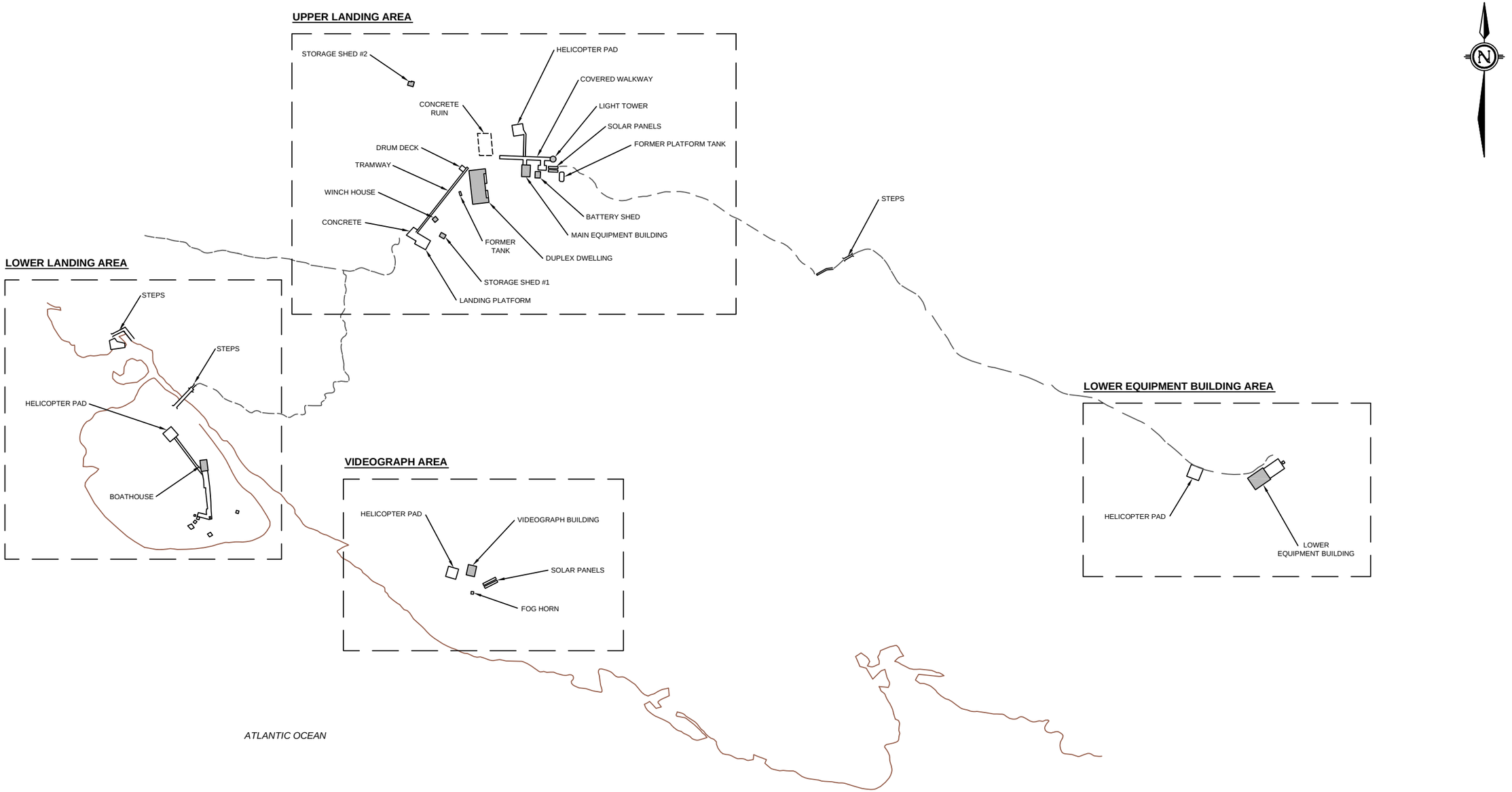
THIS DRAWING IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION IN SUPPORT OF THIS REPORT.

amec

Public Works and Government Services Canada

Travaux publics et Services gouvernementaux Canada

Date: March 2013	Project: HAZARDOUS BUILDING MATERIALS SURVEY GULL ISLAND LIGHTSTATION GULL ISLAND, NL		
Drawn by: H. Ryan	Title: SITE LOCATION PLAN		
Approved by: J. Lundrigan	Scale: NTS	Project No.: TF12076463	Figure No.: 1



NOTE:

1. ALL DIMENSIONS ARE IN METRES.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.
7. THIS FIGURE WAS PRODUCED FROM FIGURES SUPPLIED BY PUBLIC WORKS AND GOVERNMENT SERVICES CANADA.

Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

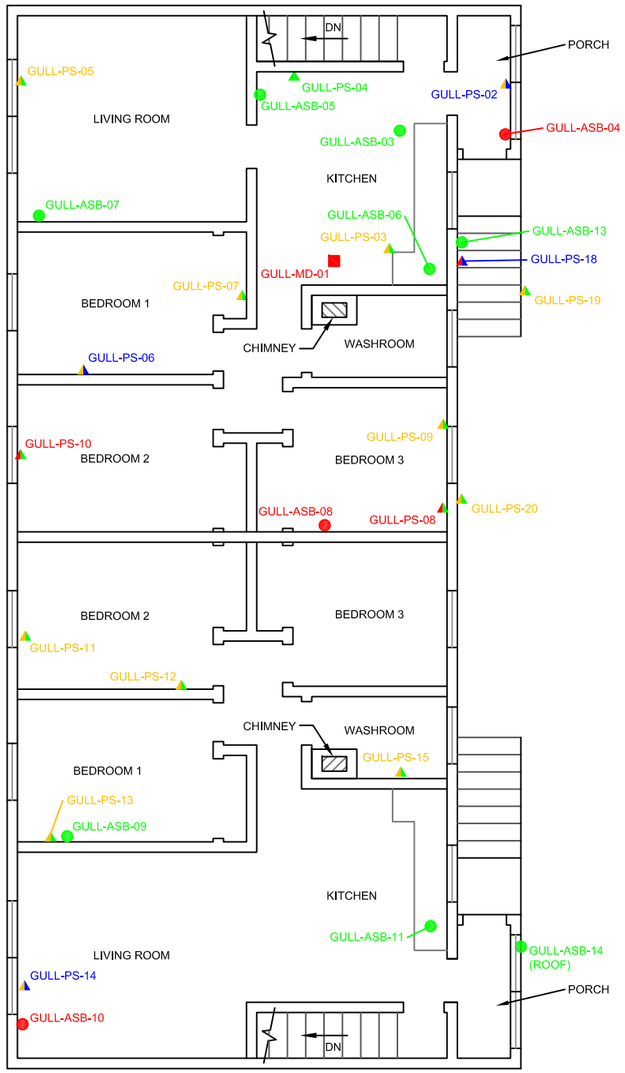
AMEC Environment & Infrastructure
133 Crosbie Road
St. John's, NL
A1B 4A5
709-722-7023

DWN BY: H. Ryan
CHK'D BY: J. Lundrigan
SCALE: As Shown

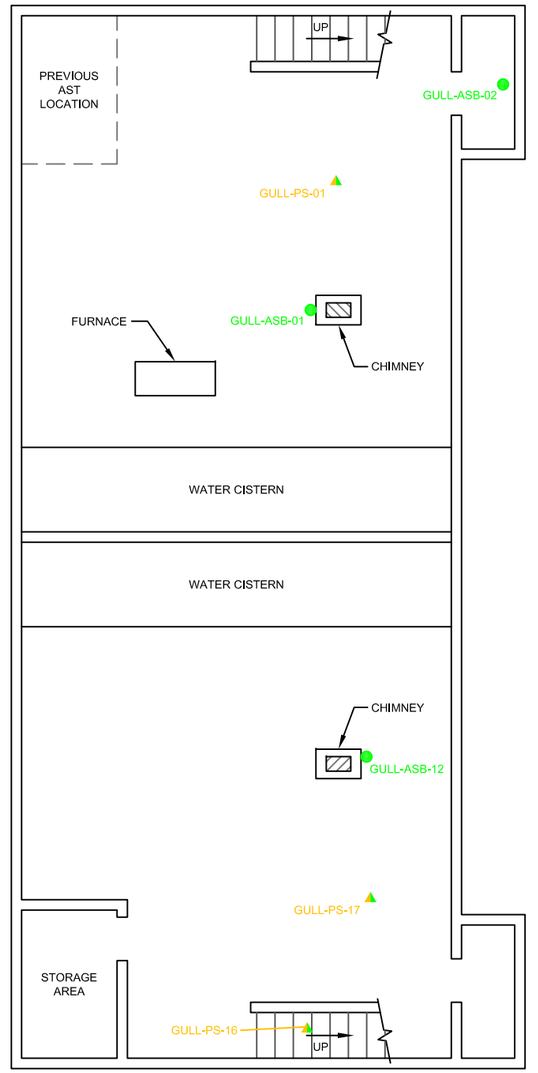
PROJECT: HAZARDOUS BUILDING MATERIALS SURVEY
GULL ISLAND LIGHTSTATION
GULL ISLAND, NL

TITLE: SITE PLAN

DATE: March 2013
PROJECT No.: TF12076463
REV. No.: 0
FIGURE No.: 2



MAIN FLOOR



BASEMENT

LEGEND:

- PAINT SAMPLE LOCATION - RESULTS CONTAIN NO CRITERIA EXCEEDANCES FOR LEAD OR MERCURY
- 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 10 mg/kg AND LESS THAN 24 mg/kg FOR MERCURY
- PAINT SAMPLE LOCATION - RESULTS EXCEED 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY
- PAINT SAMPLE LOCATION - RESULTS EXCEED 5000 mg/kg LEAD AND EXCEED 10 mg/kg AND LESS THAN 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:

1. ALL DIMENSIONS ARE IN METRES.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.
7. THIS FIGURE WAS PRODUCED FROM FIGURES SUPPLIED BY PUBLIC WORKS AND GOVERNMENT SERVICES CANADA.

Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

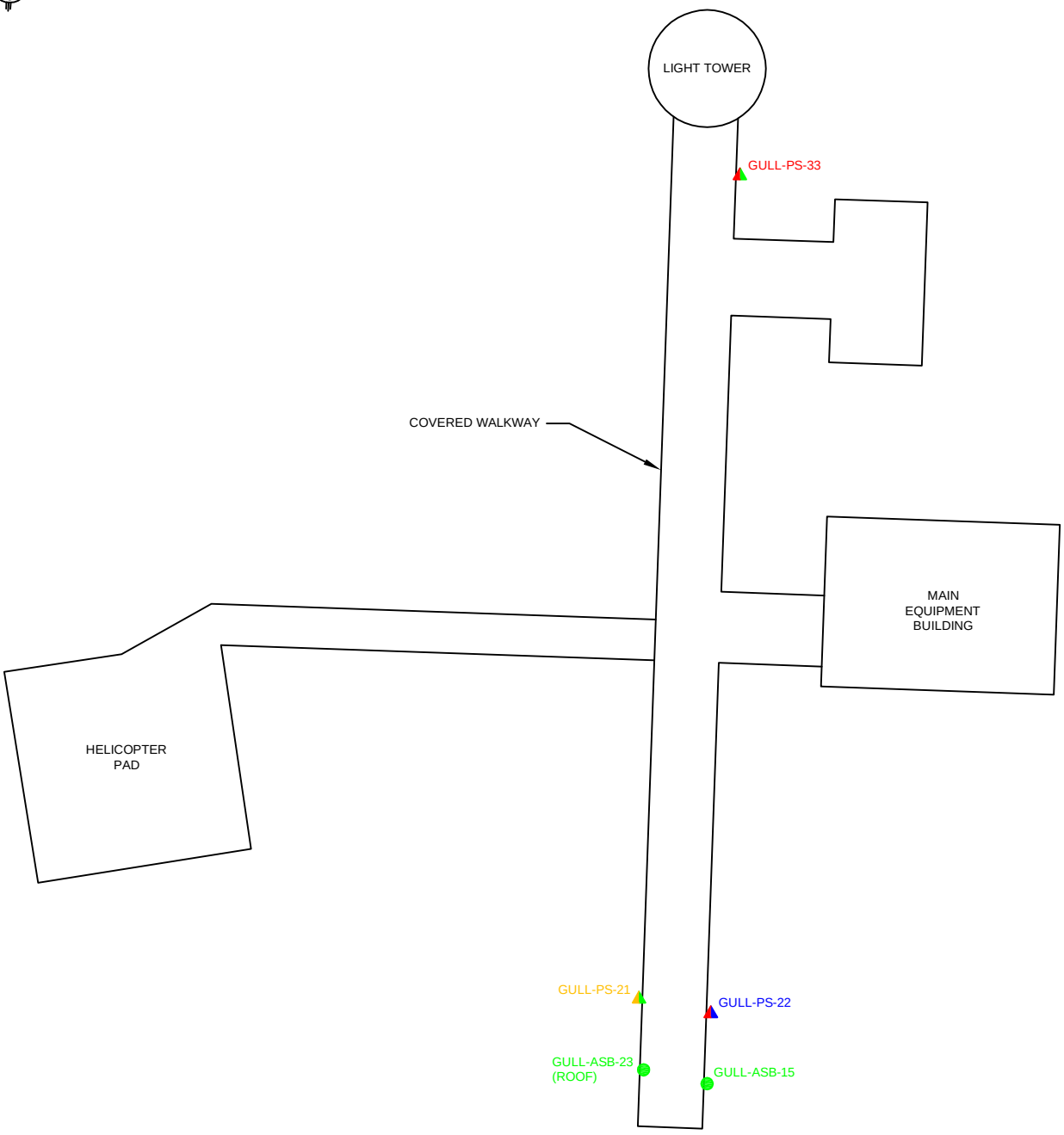
AMEC Environment & Infrastructure
133 Crosbie Road
St. John's, NL
A1B 4A5
709-722-7023

DWN BY: H. Ryan
CHK'D BY: J. Lundrigan
SCALE: NTS

PROJECT: HAZARDOUS BUILDING MATERIALS SURVEY
GULL ISLAND LIGHTSTATION
GULL ISLAND, NL

TITLE: DUPLEX DWELLING SAMPLE LOCATION PLAN

DATE: March 2013
PROJECT No.: TF12076463
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 5000 mg/kg FOR LEAD AND EXCEED 10 mg/kg AND LESS THAN 24 mg/kg FOR MERCURY
- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED OR RESULTS < 1% FOR ASBESTOS

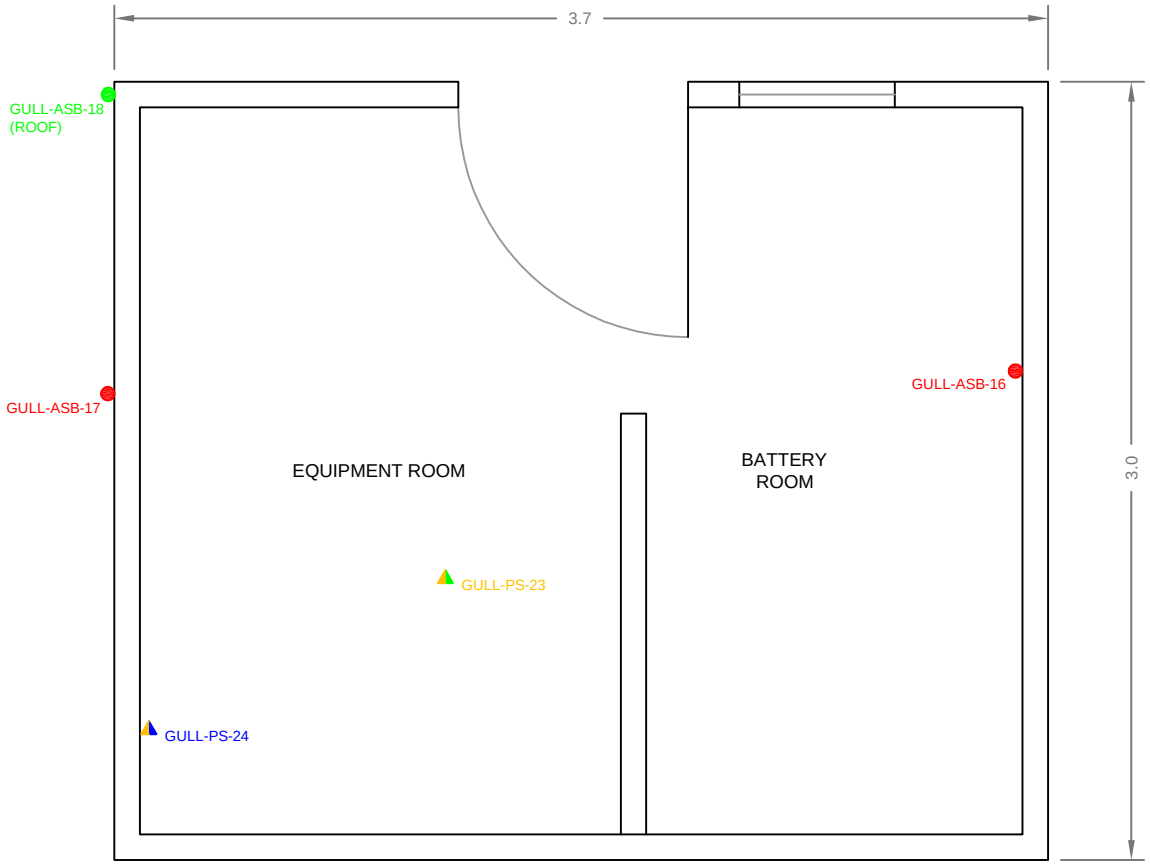
NOTES:
1. ALL DIMENSIONS ARE IN METRES.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.

7. THIS FIGURE WAS PRODUCED FROM FIELD NOTES.

amec

Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

Date: March 2013	Project: HAZARDOUS BUILDING MATERIALS SURVEY GULL ISLAND LIGHTSTATION GULL ISLAND, NL			
Drawn by: H. Ryan	Title: COVERED WALKWAY SAMPLE LOCATION PLAN			
Approved by: J. Lundrigan	Scale: NTS	Project No.: TF12076463	Figure No.: 4	



LEGEND:

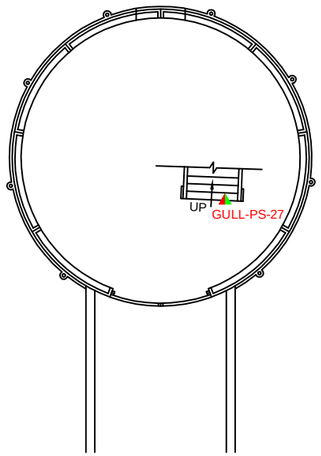
- PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY
- PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND EXCEED 10 mg/kg AND LESS THAN 24 mg/kg FOR MERCURY
- ASBESTOS SAMPLE LOCATION - ASBESTOS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

NOTES:
1. ALL DIMENSIONS ARE IN METRES.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.
7. THIS FIGURE WAS PRODUCED FROM FIELD NOTES.

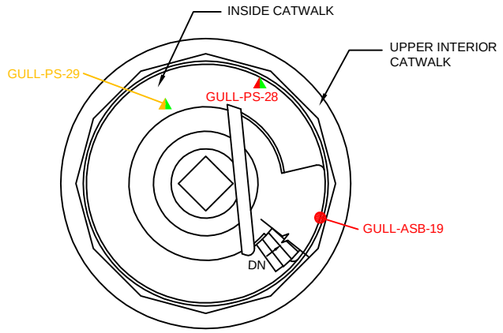
amec

Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

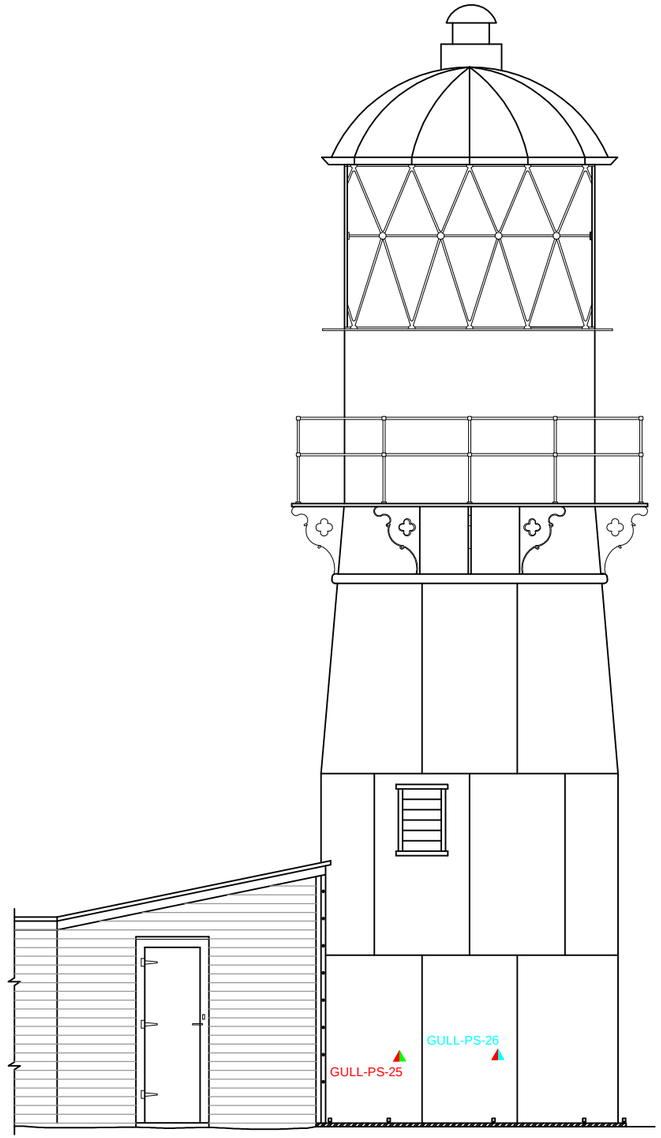
Date: March 2013	Project: HAZARDOUS BUILDING MATERIALS SURVEY GULL ISLAND LIGHTSTATION GULL ISLAND, NL		
Drawn by: H. Ryan	Title: MAIN EQUIPMENT BUILDING SAMPLE LOCATION PLAN		
Approved by: J. Lundrigan	Scale: As Shown	Project No.: TF12076463	Figure No.: 5



GROUND LEVEL
SCALE 1:50



UPPER INTERIOR CATWALK
SCALE 1:50



RIGHT ELEVATION
SCALE 1:50

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 5000 mg/kg LEAD AND EXCEED 24 mg/kg FOR MERCURY
- ASBESTOS SAMPLE LOCATION - RESULTS > 1% FOR ASBESTOS

NOTE:

1. ALL DIMENSIONS ARE IN METRES.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.
7. THIS FIGURE WAS PRODUCED FROM FIGURES SUPPLIED BY PUBLIC WORKS AND GOVERNMENT SERVICES CANADA.

Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

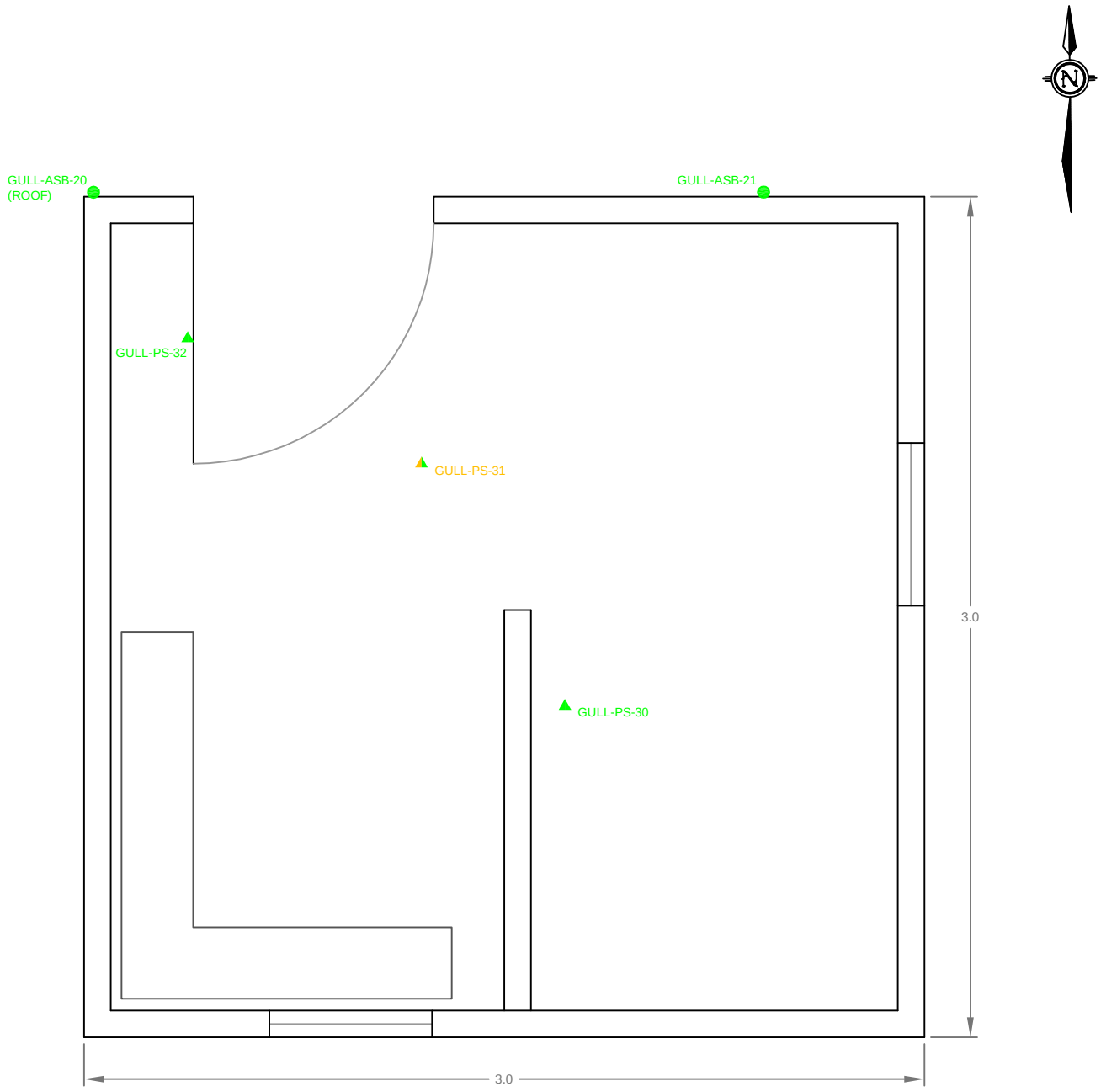
AMEC Environment & Infrastructure
133 Crosbie Road
St. John's, NL
A1B 4A5
709-722-7023

DWN BY: H. Ryan
CHK'D BY: J. Lundrigan
SCALE: As Shown

PROJECT: HAZARDOUS BUILDING MATERIALS SURVEY
GULL ISLAND LIGHTSTATION
GULL ISLAND, NL

TITLE: LIGHT TOWER SAMPLE LOCATION PLAN

DATE: March 2013
PROJECT No.: TF12076463
REV. No.: 0
FIGURE No.: 6



LEGEND:

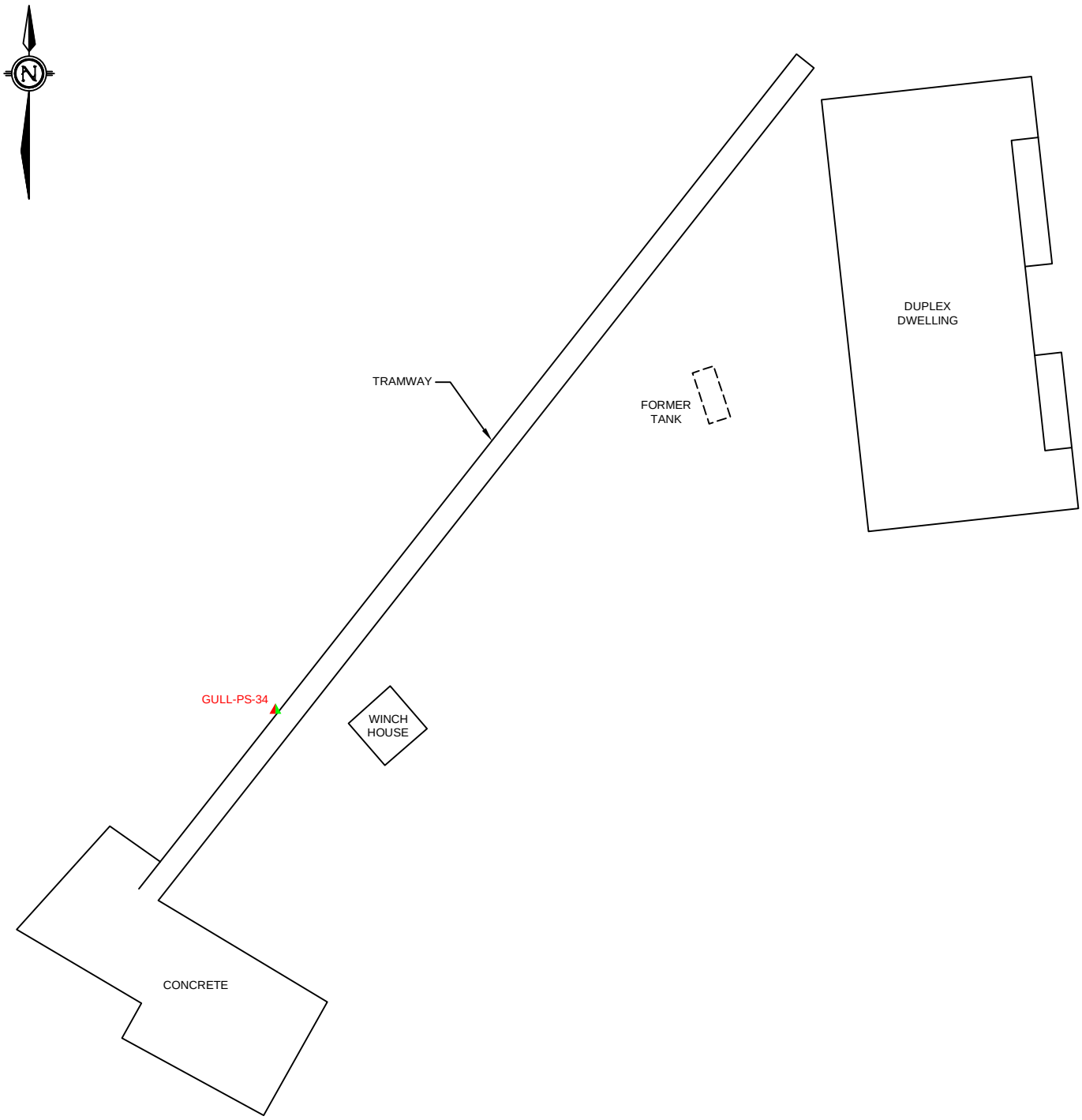
- PAINT SAMPLE LOCATION - RESULTS CONTAIN NO CRITERIA EXCEEDANCES FOR LEAD OR MERCURY
- PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY
- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED OR RESULTS < 1% FOR ASBESTOS

NOTES:
1. ALL DIMENSIONS ARE IN METRES.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.
7. THIS FIGURE WAS PRODUCED FROM FIELD NOTES.

amec

Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

Date: March 2013	Project: HAZARDOUS BUILDING MATERIALS SURVEY GULL ISLAND LIGHTSTATION GULL ISLAND, NL		
Drawn by: H. Ryan	Title: BATTERY SHED SAMPLE LOCATION PLAN		
Approved by: J. Lundrigan	Scale: As Shown	Project No.: TF12076463	Figure No.: 7



LEGEND:

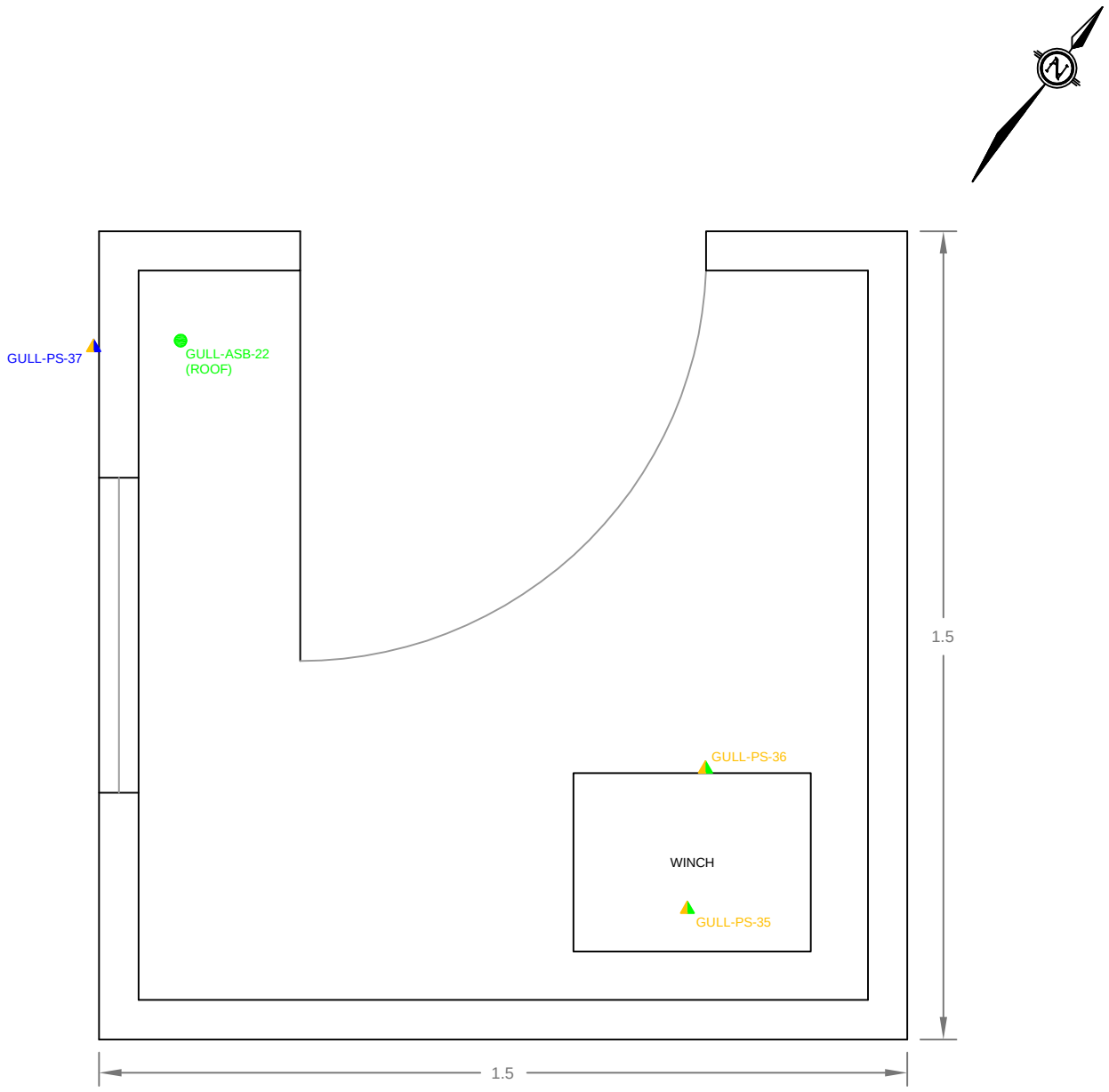
▲ PAINT SAMPLE LOCATION - RESULTS EXCEED 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY

NOTES:
1. ALL DIMENSIONS ARE IN METRES.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.
7. THIS FIGURE WAS PRODUCED FROM FIELD NOTES.

amec

Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

Date: March 2013	Project: HAZARDOUS BUILDING MATERIALS SURVEY GULL ISLAND LIGHTSTATION GULL ISLAND, NL		
Drawn by: H. Ryan	Title: TRAMWAY SAMPLE LOCATION PLAN		
Approved by: J. Lundrigan	Scale: NTS	Project No.: TF12076463	Figure No.: 8



LEGEND:

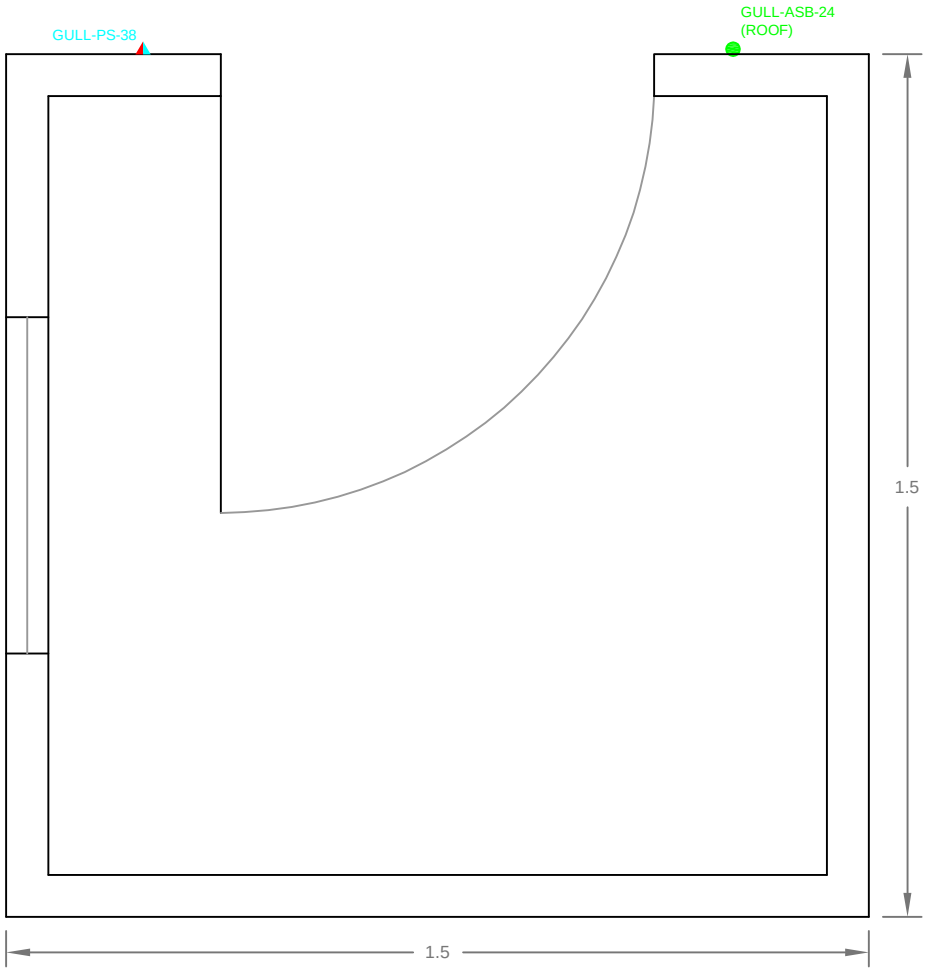
- PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY
- PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg LEAD AND EXCEED 10 mg/kg AND LESS THAN 24 mg/kg FOR MERCURY
- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT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

NOTES:
1. ALL DIMENSIONS ARE IN METRES.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.
7. THIS FIGURE WAS PRODUCED FROM FIELD NOTES.

amec

Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

Date: March 2013	Project: HAZARDOUS BUILDING MATERIALS SURVEY GULL ISLAND LIGHTSTATION GULL ISLAND, NL		
Drawn by: H. Ryan	Title: WINCH HOUSE SAMPLE LOCATION PLAN		
Approved by: J. Lundrigan	Scale: As Shown	Project No.: TF12076463	Figure No.: 9



LEGEND:

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

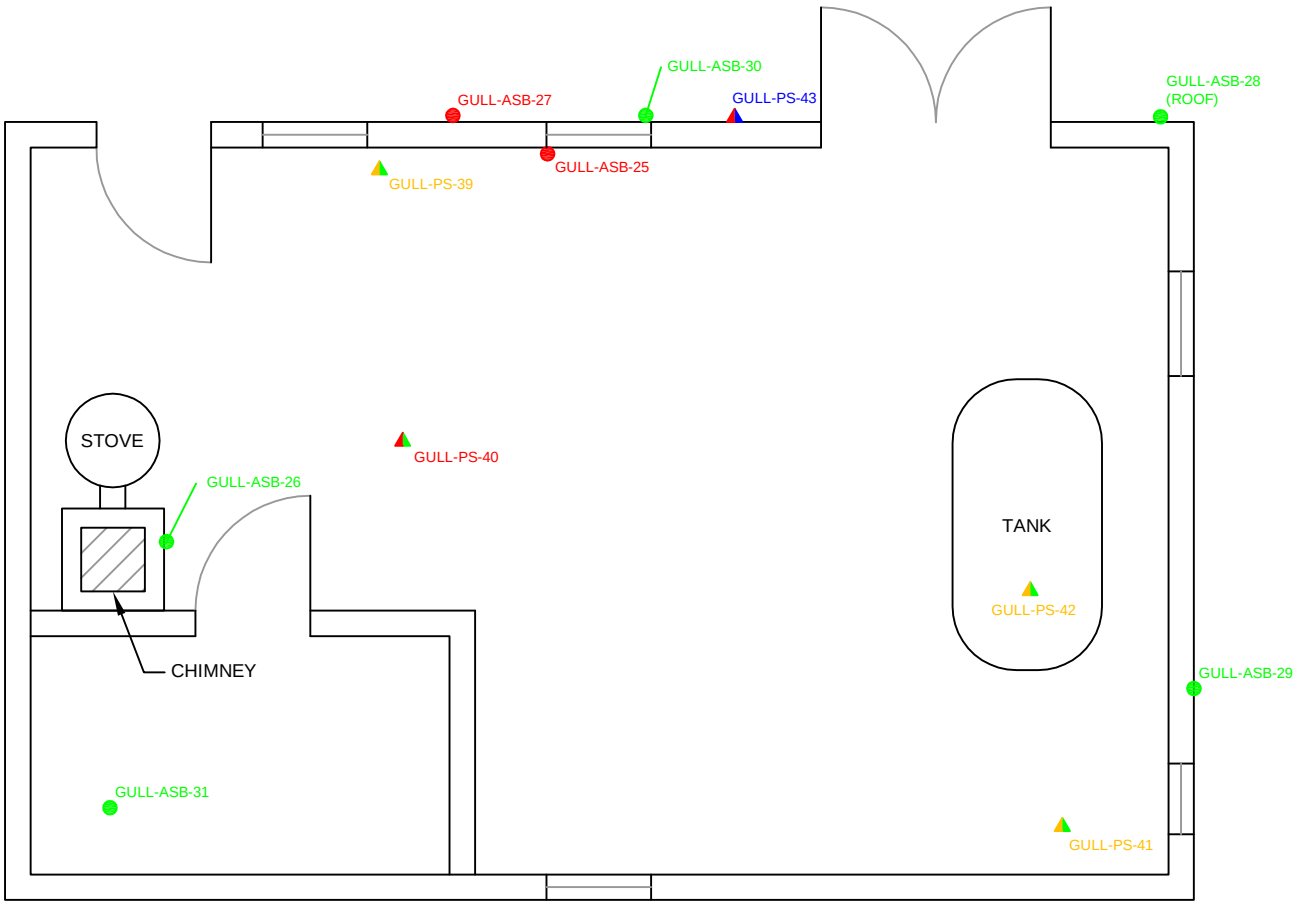
NOTES:

1. ALL DIMENSIONS ARE IN METRES.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.
7. THIS FIGURE WAS PRODUCED FROM FIELD NOTES.

amec

Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

Date: March 2013	Project: HAZARDOUS BUILDING MATERIALS SURVEY GULL ISLAND LIGHTSTATION GULL ISLAND, NL		
Drawn by: H. Ryan	Title: STORAGE SHED #1 SAMPLE LOCATION PLAN		
Approved by: J. Lundrigan	Scale: As Shown	Project No.: TF12076463	Figure No.: 10



LEGEND:

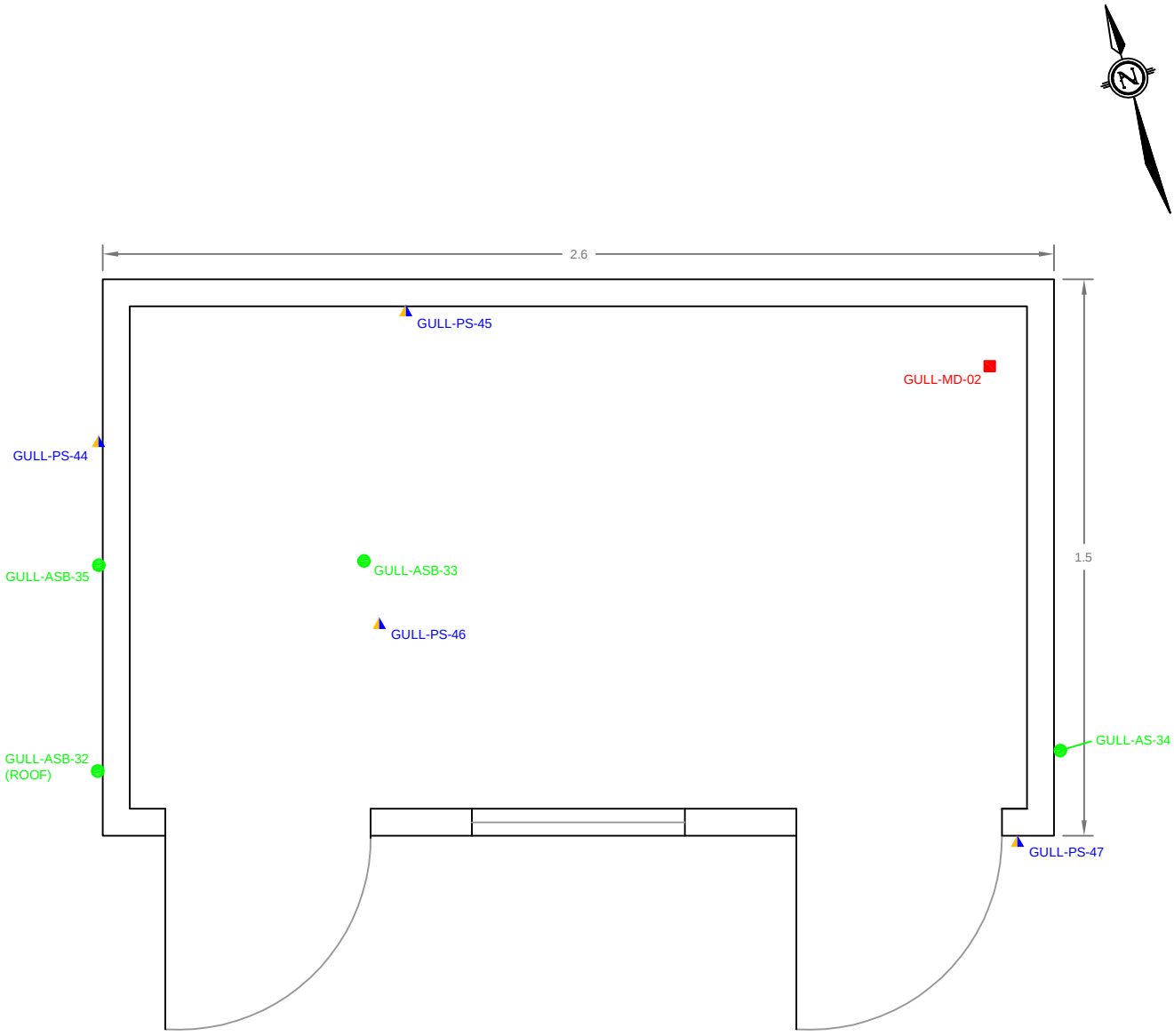
- PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY
- PAINT SAMPLE LOCATION - RESULTS EXCEED 5000 mg/kg FOR LEAD AND NO CRITERIA EXCEEDANCES FOR MERCURY
- PAINT SAMPLE LOCATION - RESULTS EXCEED 5000 mg/kg FOR LEAD AND EXCEED 10 mg/kg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

NOTES:
1. ALL DIMENSIONS ARE IN METRES.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.
7. THIS FIGURE WAS PRODUCED FROM FIELD NOTES.

amec

Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

Date: March 2013	Project: HAZARDOUS BUILDING MATERIALS SURVEY GULL ISLAND LIGHTSTATION GULL ISLAND, NL		
Drawn by: H. Ryan	Title: LOWER EQUIPMENT BUILDING SAMPLE LOCATION PLAN		
Approved by: J. Lundrigan	Scale: NTS	Project No.: TF12076463	Figure No.: 11



LEGEND:

- PAINT SAMPLE LOCATION - RESULTS EXCEED 90 mg/kg AND LESS THAN 5000 mg/kg FOR LEAD AND EXCEED 10 mg/kg AND LESS THAN 24 mg/kg FOR MERCURY
- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED OR RESULTS < 1% FOR ASBESTOS
- MOULD SAMPLE LOCATION - MOULD GROWTH IDENTIFIED

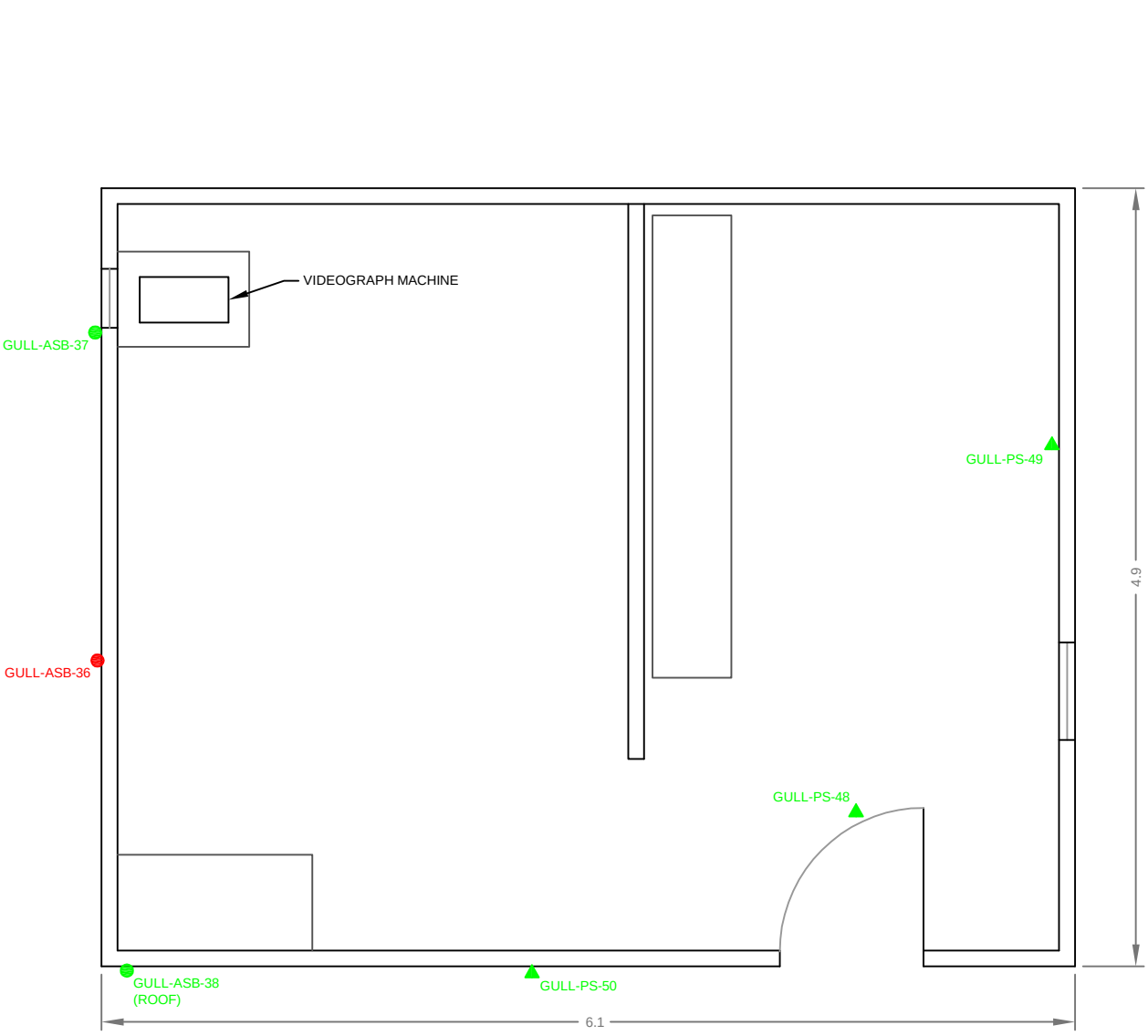
NOTES:

1. ALL DIMENSIONS ARE IN METRES.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.
7. THIS FIGURE WAS PRODUCED FROM FIELD NOTES.

amec

Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

Date: March 2013	Project: HAZARDOUS BUILDING MATERIALS SURVEY GULL ISLAND LIGHTSTATION GULL ISLAND, NL		
Drawn by: H. Ryan	Title: STORAGE SHED #2 SAMPLE LOCATION PLAN		
Approved by: J. Lundrigan	Scale: As Shown	Project No.: TF12076463	Figure No.: 12



LEGEND:

- ▲ PAINT SAMPLE LOCATION - RESULTS CONTAIN NO CRITERIA EXCEEDANCES FOR LEAD OR MERCURY
- ● ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED OR RESULTS < 1% FOR ASBESTOS
- ● ASBESTOS SAMPLE LOCATION - RESULTS > 1% FOR ASBESTOS

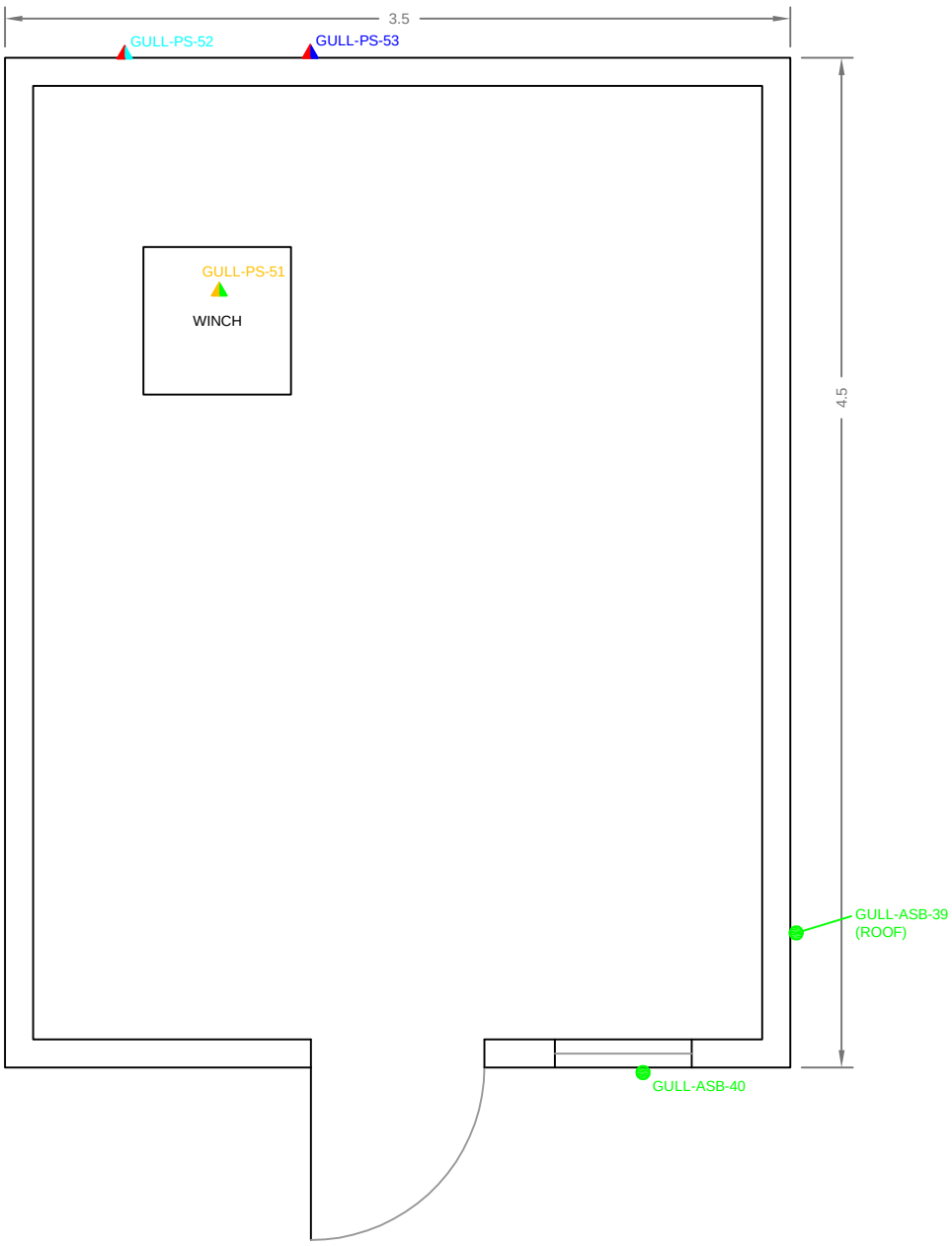
NOTES:

1. ALL DIMENSIONS ARE IN METRES.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.
7. THIS FIGURE WAS PRODUCED FROM FIELD NOTES.

amec

Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

Date: March 2013	Project: HAZARDOUS BUILDING MATERIALS SURVEY GULL ISLAND LIGHTSTATION GULL ISLAND, NL		
Drawn by: H. Ryan	Title: VIDEOGRAPH BUILDING SAMPLE LOCATION PLAN		
Approved by: J. Lundrigan	Scale: As Shown	Project No.: TF12076463	Figure No.: 13



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 24 mg/kg FOR MERCURY
- PAINT SAMPLE LOCATION - RESULTS EXCEED 5000 mg/kg LEAD AND EXCEED EXCEED 10 mg/kg AND LESS THAN 24 mg/kg FOR MERCURY
- ASBESTOS SAMPLE LOCATION - ASBESTOS NOT DETECTED OR RESULTS < 1% FOR ASBESTOS

NOTES:
1. ALL DIMENSIONS ARE IN METRES.
2. DO NOT SCALE FROM FIGURE.
3. THIS FIGURE IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. THIS FIGURE SHOULD NOT BE USED FOR PURPOSES OTHER THAN THOSE OUTLINED ABOVE.
6. THIS FIGURE CONTAINS INTELLECTUAL PROPERTY OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA AND MAY NOT BE REPRODUCED OR COPIED WITHOUT THEIR WRITTEN CONSENT.
7. THIS FIGURE WAS PRODUCED FROM FIELD NOTES.

amec

Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

Date: March 2013	Project: HAZARDOUS BUILDING MATERIALS SURVEY GULL ISLAND LIGHTSTATION GULL ISLAND, NL		
Drawn by: H. Ryan	Title: BOATHOUSE SAMPLE LOCATION PLAN		
Approved by: J. Lundrigan	Scale: As Shown	Project No.: TF12076463	Figure No.: 14

APPENDIX B

Photographic Record

Photo 1: View of the Upper Landing Area, Gull Island Lightstation, NL.

Photo 2: View of the Lower Landing Area, Gull Island Lightstation, NL.

Photo 3: View of the Videograph Area, Gull Island Lightstation, NL.

Photo 4: View of the Lower Equipment Building Area, Gull Island Lightstation, NL.

Photo 5: View of brick mortar sample GULL-AS-1.

Photo 6: View of wiring insulation sample GULL-AS-2.

Photo 7: View of particle board sample GULL-AS-3.

Photo 8: View of drywall joint compound sample GULL-AS-4.

Photo 9: View of tile particle board sample GULL-AS-5.

Photo 10: View of blue countertop sample GULL-AS-6.

Photo 11: View of fibreglass insulation sample GULL-AS-7.

Photo 12: View of drywall joint compound sample GULL-AS-8.

Photo 13: View of fibreglass insulation sample GULL-AS-9.

Photo 14: View of drywall joint compound sample GULL-AS-10.

Photo 15: View of green countertop sample GULL-AS-11.


Photo 16: View of brick mortar sample GULL-AS-12.

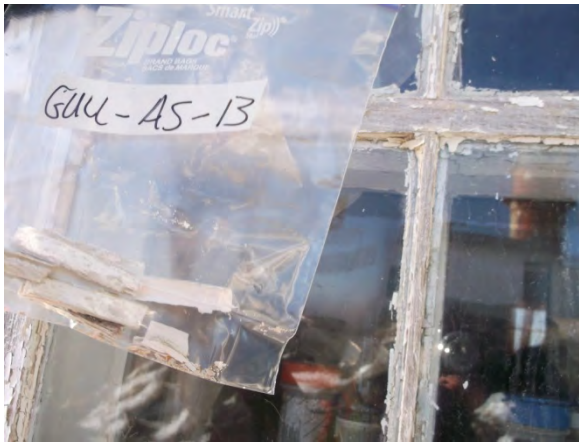


Photo 17: View of window caulking sample GULL-AS-13.

Photo 18: View of asphalt shingle sample GULL-AS-14.

Photo 19: View of felt tar paper sample GULL-AS-15.

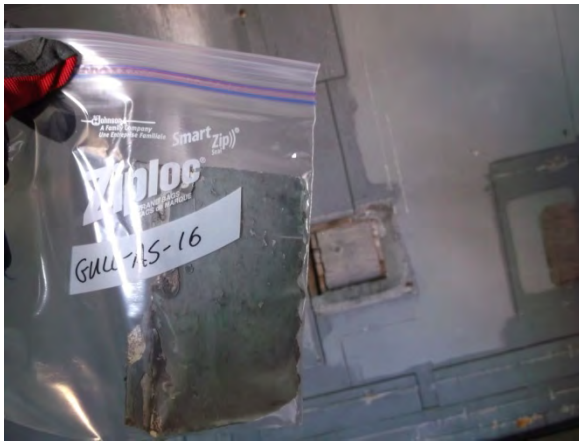


Photo 20: View of cement board (transite) sample GULL-AS-16.

Photo 21: View of cement board siding (transite) sample GULL-AS-17.

Photo 22: View of asphalt shingle sample GULL-AS-18.

Photo 23: View of window caulking sample GULL-AS-19.

Photo 24: View of asphalt shingle with felt tar paper sample GULL-AS-20.

Photo 25: View of electrical conduit caulking sample GULL-AS-21.

Photo 26: View of asphalt shingle sample GULL-AS-22.

Photo 27: View of asphalt asphalt Shingle sample GULL-AS-23.

Photo 28: View of asphalt shingle sample GULL-AS-24

.

Photo 29: View of drywall joint compound sample GULL-AS-25.

.

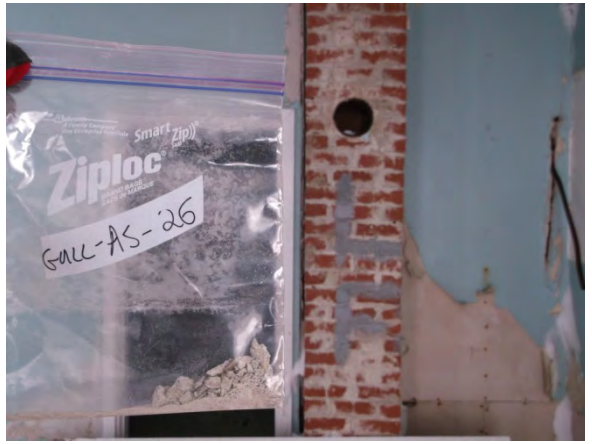


Photo 30: View of brick mortar sample GULL-AS-26.

Photo 31: View of felt tar paper sample GULL-AS-27.

Photo 32: View of asphalt shingle sample GULL-AS-28.

Photo 33: View of fibreglass insulation sample GULL-AS-29.

Photo 34: View of window caulking sample GULL-AS-30.

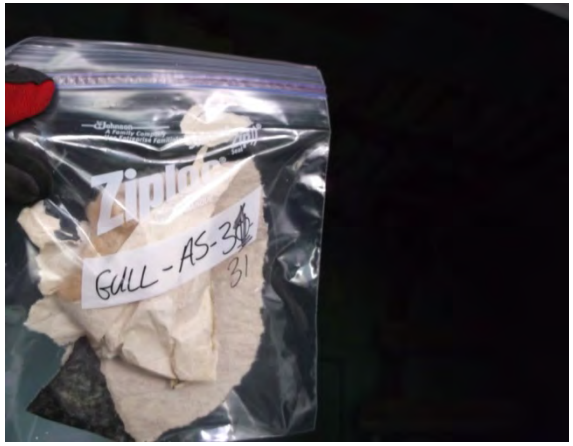


Photo 35: View of fibreglass insulation sample GULL-AS-31.

Photo 36: View of asphalt shingle sample GULL-AS-32.

Photo 37: View of particle board sample GULL-AS-33.

Photo 38: View of felt tar paper sample GULL-AS-34.

Photo 39: View of window caulking sample GULL-AS-35.

Photo 40: View of electrical conduit caulking sample GULL-AS-36.

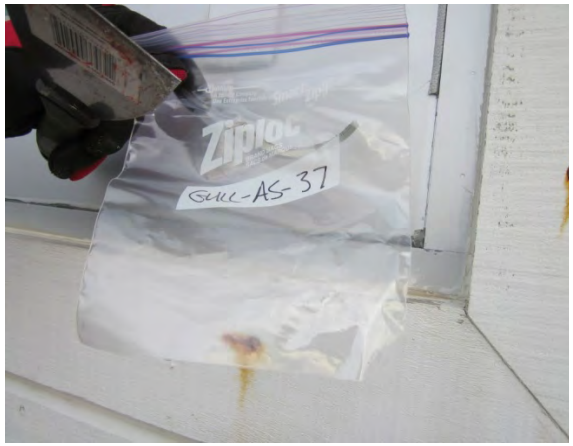


Photo 41: View of window caulking sample GULL-AS-37.

Photo 42: View of asphalt shingle sample GULL-AS-38.

Photo 43: View of asphalt shingle sample GULL-AS-39.

Photo 44: View of felt tar paper sample GULL-AS-40.

Photo 45: View of paint sample GULL-PS-1.

Photo 46: View of paint sample GULL-PS-2.

Photo 47: View of paint sample GULL-PS-3.

Photo 48: View of paint sample GULL-PS-4.

Photo 49: View of paint sample GULL-PS-5.

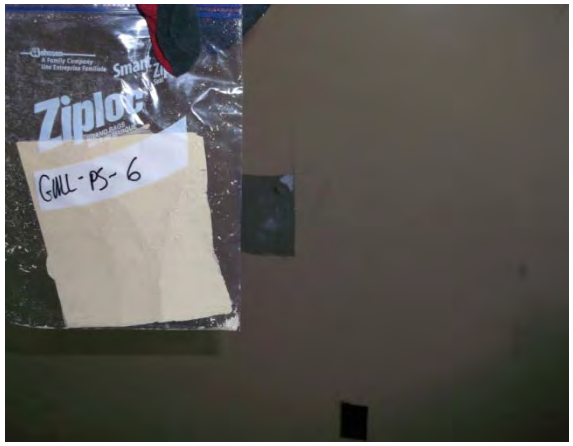


Photo 50: View of paint sample GULL-PS-6.

Photo 51: View of paint sample GULL-PS-7.

Photo 52: View of paint sample GULL-PS-8.

Photo 53: View of paint sample GULL-PS-9.

Photo 54: View of paint sample GULL-PS-10.

Photo 55: View of paint sample GULL-PS-11.

Photo 56: View of paint sample GULL-PS-12.

Photo 57: View of paint sample GULL-PS-13.

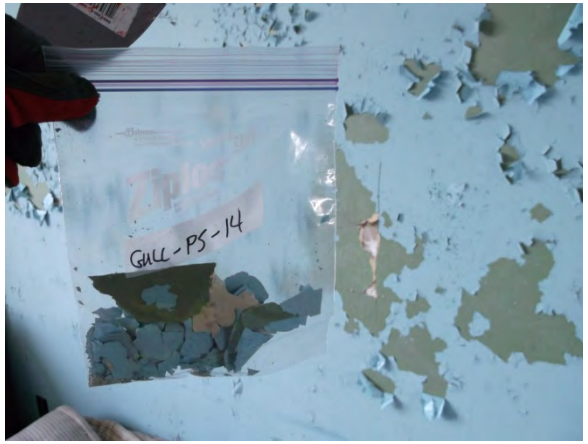


Photo 58: View of paint sample GULL-PS-14.

Photo 59: View of paint sample GULL-PS-15.

Photo 60: View of paint sample GULL-PS-16.

Photo 61: View of paint sample GULL-PS-17.

Photo 62: View of paint sample GULL-PS-18.

Photo 63: View of paint sample GULL-PS-19.

Photo 64: View of paint sample GULL-PS-20.

Photo 65: View of paint sample GULL-PS-21.

Photo 66: View of paint sample GULL-PS-22.

Photo 67: View of paint sample GULL-PS-23.

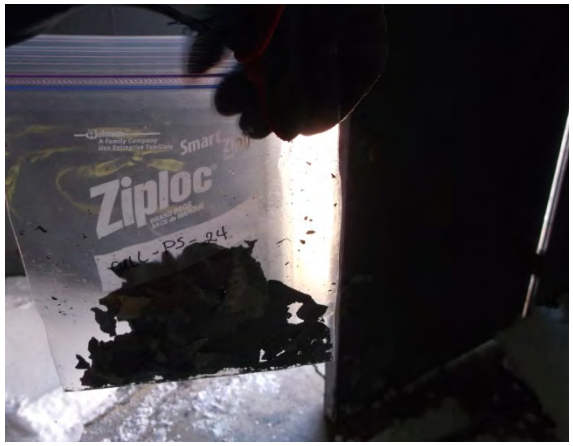


Photo 68: View of paint sample GULL-PS-24.

Photo 69: View of paint sample GULL-PS-25.

Photo 70: View of paint sample GULL-PS-26.

Photo 71: View of paint sample GULL-PS-27.

Photo 72: View of paint sample GULL-PS-28.

Photo 73: View of paint sample GULL-PS-29.

Photo 74: View of paint sample GULL-PS-30.

Photo 75: View of paint sample GULL-PS-31.

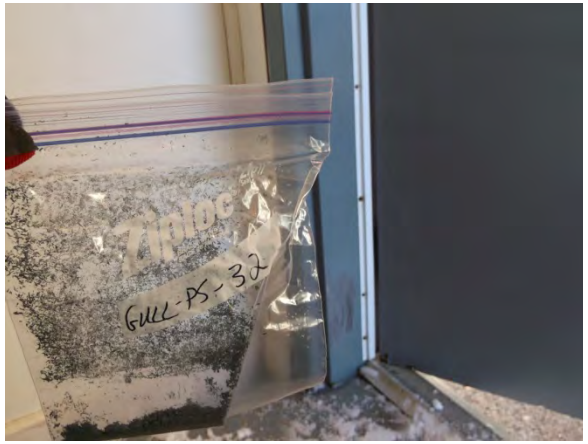


Photo 76: View of paint sample GULL-PS-32.

Photo 77: View of paint sample GULL-PS-33.

Photo 78: View of paint sample GULL-PS-34.

Photo 79: View of paint sample GULL-PS-35.


Photo 80: View of paint sample GULL-PS-36.

Photo 81: View of paint sample GULL-PS-37.

Photo 82: View of paint sample GULL-PS-38.

Photo 83: View of paint sample GULL-PS-39.

Photo 84: View of paint sample GULL-PS-40.

Photo 85: View of paint sample GULL-PS-41.

Photo 86: View of paint sample GULL-PS-42.

Photo 87: View of paint sample GULL-PS-43.

Photo 88: View of paint sample GULL-PS-44.

Photo 89: View of paint sample GULL-PS-45.

Photo 90: View of paint sample GULL-PS-46.

Photo 91: View of paint sample GULL-PS-47.


Photo 92: View of paint sample GULL-PS-48.

Photo 93: View of paint sample GULL-PS-49.

Photo 94: View of paint sample GULL-PS-50.

Photo 95: View of paint sample GULL-PS-51.

Photo 96: View of paint sample GULL-PS-52.

Photo 97: View of paint sample location GULL-PS-53.

Photo 98: View of mould sample GULL-MD-01.

Photo 99: View of mould sample GULL-MD-02.

Photo 100: View of Honeywell thermostat.

Photo 101: View of thermostat.

Photo 102: View of light ballast (CGE Gold Label).

Photo 103: View of light ballast (Advance).


Photo 104: View of freezer and refrigerator In duplex dwelling.

Photo 105: View of fire extinguisher in duplex dwelling.


Photo 106: View of solar batteries.

APPENDIX C

Sample and Analytical Summary Tables

Table C-1: Asbestos Sample Descriptions and Analytical Results

Sample ID	Material (Layer) Analyzed	Detailed Material Description	Room	Analytical Result
GULL-AS-1	Mortar	Grey brick mortar.	Duplex Dwelling Basement (North)	ND
GULL-AS-2	Insulation	Wiring insulation.	Duplex Dwelling Basement (North)	ND
GULL-AS-3	Particle Board	Grey particle board flooring.	Duplex Dwelling Kitchen and Hall (North)	ND
GULL-AS-4	Drywall Joint Compound	Drywall joint compound.	Duplex Dwelling Porch (North)	4% Chrysotile
GULL-AS-5	Particle Board	Tile particle board with beige adhesive.	Duplex Dwelling Kitchen and Hall (North)	ND
GULL-AS-6	Countertop	Blue countertop.	Duplex Dwelling Kitchen and Hall (North)	ND
GULL-AS-7	Insulation	Pink fibreglass insulation with tar and beige paper backing.	Duplex Dwelling Living Room (North)	ND
GULL-AS-8	Drywall Joint Compound	Drywall joint compound.	Duplex Dwelling Bedroom 3 (North)	3% Chrysotile
GULL-AS-9	Insulation	Pink fibreglass insulation with tar and beige paper backing.	Duplex Dwelling Bedroom 1 (South)	ND
GULL-AS-10	Drywall Joint Compound	Drywall joint compound.	Duplex Dwelling Living Room (South)	4% Chrysotile
GULL-AS-11	Countertop	Green countertop.	Duplex Dwelling Kitchen and Hall (South)	ND
GULL-AS-12	Mortar	Grey brick mortar.	Duplex Dwelling Basement (South)	ND
GULL-AS-13	Caulking	White window caulking.	Duplex Dwelling Exterior	ND
GULL-AS-14	Asphalt Shingle	Red/Black Shingle.	Duplex Dwelling Exterior	ND
GULL-AS-15	Felt Tar Paper	Black exterior felt tar paper.	Covered Walkway Exterior	ND
GULL-AS-16	Cement Board	Grey cement board (i.e. transite).	Main Equipment Building Battery Room	15% Chrysotile
GULL-AS-17	Cement Board Siding	Grey cement board (i.e. transite) siding with black tar paper.	Main Equipment Building Exterior	10% Chrysotile

Notes:
ND: non-detect
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
GULL-AS-18	Asphalt Shingle	Red/black shingle.	Main Equipment Building Exterior	ND
GULL-AS-19	Caulking	Beige window caulking.	Light Tower Top Floor	3.9% Chrysotile
GULL-AS-20	Asphalt Shingle	Red/Black shingle with tar paper.	Battery Shed Exterior	ND
GULL-AS-21	Caulking	White caulking around electrical conduit.	Battery Shed Exterior	ND
GULL-AS-22	Asphalt Shingle	Red/black shingle.	Winch House Exterior	ND
GULL-AS-23	Asphalt Shingle	Red/black shingle.	Covered Walkway Exterior	ND
GULL-AS-24	Asphalt Shingle	Green/black shingle.	Storage Shed #1 Exterior	ND
GULL-AS-25	Drywall Joint Compound	Drywall joint compound.	Lower Equipment Building Interior	5% Chrysotile
GULL-AS-26	Mortar	Grey brick mortar.	Lower Equipment Building Interior	<1% Chrysotile
GULL-AS-27	Felt Tar Paper	Black felt tar paper.	Lower Equipment Building Exterior	4.3% Chrysotile
GULL-AS-28	Asphalt Shingle	Black/red shingle.	Lower Equipment Building Exterior	ND
GULL-AS-29	Insulation	Pink fibreglass insulation with black paper backing.	Lower Equipment Building Exterior	ND
GULL-AS-30	Caulking	Beige window caulking.	Lower Equipment Building Exterior	ND
GULL-AS-31	Insulation	Pink fibreglass with black paper backing.	Lower Equipment Building Interior	<0.25% Chrysotile
GULL-AS-32	Asphalt Shingle	Black shingle.	Storage Shed #2 Exterior	ND

Notes:
ND: non-detect
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
GULL-AS-33	Particle Board	Grey painted particle board with mesh backing.	Storage Shed #2 Interior	0.58% Chrysotile
GULL-AS-34	Felt Tar Paper	Black felt tar paper.	Storage Shed #2 Exterior	ND
GULL-AS-35	Caulking	Black over grey window caulking.	Storage Shed #2 Exterior	ND
GULL-AS-36	Caulking	White caulking around electricity conduit.	Videograph Building Exterior	13.3% Chrysotile
GULL-AS-37	Caulking	Grey window caulking.	Videograph Building Exterior	ND
GULL-AS-38	Asphalt Shingle	Red/black shingle.	Videograph Building Exterior	ND
GULL-AS-39	Asphalt Shingle	Red/black shingle.	Boathouse Exterior	0.35% Chrysotile
GULL-AS-40	Felt Tar Paper	Black felt tar paper.	Boathouse Exterior	ND
GULL-AS-DUP-1	Drywall Joint Compound	Drywall joint compund.	Duplex Dwelling Living Room (South)	3% Chrysotile
GULL-AS-DUP-2	Cement Board	Grey cement board (i.e. transite).	Main Equipment Building Battery Room	15% Chrysotile
GULL-AS-DUP-3	Asphalt Shingle	Green/black shingle.	Storage Shed #1 Exterior	19% Chrysotile
GULL-AS-DUP-4	Asphalt Shingle	Red/black shingle.	Boathouse Exterior	1.1% Chrysotile

Notes:

ND: non-detect

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)

GULL-AS-DUP-1 is a duplicate of GULL-AS-10

GULL-AS-DUP-2 is a duplicate of GULL-AS-16

GULL-AS-DUP-3 is a duplicate of GULL-AS-24

GULL-AS-DUP-4 is a duplicate of GULL-AS-39

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

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	RDL (mg/kg)	Total Lead (mg/kg)
GULL-PS-1	Mutiple layers of grey	Concrete	Duplex Dwelling Basement (North)	5.0	**2,800**
GULL-PS-2	Blue on green	Drywall	Duplex Dwelling Porch (North)	5.0	**2,400**
GULL-PS-3	White	Drywall	Duplex Dwelling Kitchen (North)	5.0	**1,300**
GULL-PS-4	Glossy white	Drywall	Duplex Dwelling Kitchen (North)	10.0	15
GULL-PS-5	White	Drywall	Duplex Dwelling Living Room (North)	5.0	**550**
GULL-PS-6	Yellow on rose	Drywall	Duplex Dwelling Bedroom 1 (North)	5.0	**1,100**
GULL-PS-7	White on beige on rose	Drywall	Duplex Dwelling Bedroom 1 (North)	5.0	**2,300**
GULL-PS-8	Canary yellow	Drywall	Duplex Dwelling Bedroom 3 (North)	5.0	**5,300**
GULL-PS-9	Grey on white	Drywall	Duplex Dwelling Bedroom 3 (North)	5.0	**2,600**
GULL-PS-10	Beige on blue	Drywall	Duplex Dwelling Bedroom 2 (North)	5.0	**13,000**
GULL-PS-11	Blue on beige/white	Drywall	Duplex Dwelling Bedroom 2 (North)	5.0	**280**
GULL-PS-12	White	Drywall	Duplex Dwelling Bedroom 2 (North)	5.0	**410**
GULL-PS-13	Pink on yellow	Drywall	Duplex Dwelling Bedroom 1 (South)	5.0	**1,600**
GULL-PS-14	Light blue on dark green	Drywall	Duplex Dwelling Living Room (South)	5.0	**3,400**
GULL-PS-15	White	Drywall	Duplex Dwelling Washroom (South)	5.0	**740**
GULL-PS-16	Beige on blue on green	Drywall	Duplex Dwelling Basement (South)	5.0	**3,100**
GULL-PS-17	Grey on grey	Concrete	Duplex Dwelling Basement (South)	5.0	**2,000**
GULL-PS-18	White on white	Wood	Duplex Dwelling Exterior	5.0	**32,000**

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.)	RDL (mg/kg)	Total Lead (mg/kg)
GULL-PS-19	Red on grey	Wood	Duplex Dwelling Exterior	5.0	**3,400**
GULL-PS-20	Mutiple layers of grey	Concrete	Duplex Dwelling Exterior	5.0	**2,300**
GULL-PS-21	Grey on grey on red	Wood	Duplex Dwelling Kitchen (North)	5.0	**1,900**
GULL-PS-22	White on white	Wood	Covered Walkway	5.0	**19,000**
GULL-PS-23	Mutiple layers of grey	Wood	Main Equipment Building Interior	5.0	**3,300**
GULL-PS-24	Mutiple layers of grey on grey	Wood	Main Equipment Building Interior	5.0	**3,900**
GULL-PS-25	Red	Metal	Light Tower Exterior	5.0	**19,000**
GULL-PS-26	Red on red	Metal	Light Tower Exterior	5.0	**25,000**
GULL-PS-27	White on white	Metal	Light Tower Interior	5.0	**27,000**
GULL-PS-28	White on brass	Metal	Light Tower Top Floor	5.0	**15,000**
GULL-PS-29	Mutiple layers of grey on red	Metal	Light Tower Top Floor	5.0	**1,800**
GULL-PS-30	White	Wood	Battery Shed Interior	5.0	9.6
GULL-PS-31	Grey	Wood	Battery Shed Interior	5.0	**790**
GULL-PS-32	White	Wood	Battery Shed Interior	5.0	13
GULL-PS-33	Green on white	Wood	Covered Walkway	5.0	**32,000**
GULL-PS-34	Red on red	Wood	Tramway	5.0	**12,000**
GULL-PS-35	Red on red	Metal	Winch House Interior	5.0	**380**
GULL-PS-36	Grey	Metal	Winch House Interior	5.0	**360**

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.)	RDL (mg/kg)	Total Lead (mg/kg)
GULL-PS-37	White	Wood	Winch House Exterior	5.0	**850**
GULL-PS-38	Orange/Red	Wood	Storage Shed #1 Exterior	5.0	**14,000**
GULL-PS-39	Blue on white	Drywall	Lower Equipment Building Interior	5.0	**1,800**
GULL-PS-40	Grey on red	Concrete	Lower Equipment Building Interior	5.0	**13,000**
GULL-PS-41	White	Drywall	Lower Equipment Building Interior	5.0	**410**
GULL-PS-42	Metallic silver on red	Metal	Lower Equipment Building Interior	5.0	**2,200**
GULL-PS-43	White	Wood	Lower Equipment Building Exterior	5.0	**6,200**
GULL-PS-44	White	Wood	Storage Shed #2 Exterior	5.0	**910**
GULL-PS-45	Blue on yellow	Drywall	Storage Shed #2 Interior	5.0	**630**
GULL-PS-46	Grey on green	Wood	Storage Shed #2 Interior	5.0	**4,100**
GULL-PS-47	Red on white	Wood	Storage Shed #2 Exterior	5.0	**3,200**
GULL-PS-48	Grey on red	Wood	Videograph Building Interior	5.0	26
GULL-PS-49	White	Wood	Videograph Building Interior	5.0	6.0
GULL-PS-50	White	Wood	Videograph Building Exterior	5.0	6.4
GULL-PS-51	Orange	Metal	Boathouse Interior	5.0	**370**
GULL-PS-52	White	Wood	Boathouse Exterior	5.0	**9,000**
GULL-PS-53	Orange on white	Wood	Boathouse Exterior	5.0	**14,000**

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.)	RDL (mg/kg)	Total Lead (mg/kg)
GULL-PS-DUP1	Mutiple layers of grey	Concrete	Duplex Dwelling Basement (North)	5.0	**1,400**
GULL-PS-DUP2	Beige on blue	Drywall	Duplex Dwelling Bedroom 2 (North)	5.0	**12,000**
GULL-PS-DUP3	Red on grey	Wood	Duplex Dwelling Exterior	5.0	**3,400**
GULL-PS-DUP4	White	Drywall	Lower Equipment Building Interior	5.0	**600**
GULL-PS-DUP5	White	Wood	Storage Shed #2 Exterior	5.0	**1,600**

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
GULL-PS-DUP1 is a duplicate of GULL-PS-1
GULL-PS-DUP2 is a duplicate of GULL-PS-10
GULL-PS-DUP3 is a duplicate of GULL-PS-19
GULL-PS-DUP4 is a duplicate of GULL-PS-41
GULL-PS-DUP5 is a duplicate of GULL-PS-44

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

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	RDL (mg/kg)	Total Mercury (mg/kg)
GULL-PS-1	Mutiple layers of grey	Concrete	Duplex Dwelling Basement (North)	1.0	<1.0
GULL-PS-2	Blue on green	Drywall	Duplex Dwelling Porch (North)	1.0	***10***
GULL-PS-3	White	Drywall	Duplex Dwelling Kitchen (North)	1.0	<1.0
GULL-PS-4	Glossy white	Drywall	Duplex Dwelling Kitchen (North)	2.0	<2.0
GULL-PS-5	White	Drywall	Duplex Dwelling Living Room (North)	1.0	3.4
GULL-PS-6	Yellow on rose	Drywall	Duplex Dwelling Bedroom 1 (North)	1.0	***11***
GULL-PS-7	White on beige on rose	Drywall	Duplex Dwelling Bedroom 1 (North)	1.0	2.3
GULL-PS-8	Canary yellow	Drywall	Duplex Dwelling Bedroom 3 (North)	1.0	8.6
GULL-PS-9	Grey on white	Drywall	Duplex Dwelling Bedroom 3 (North)	1.0	1.7
GULL-PS-10	Beige on blue	Drywall	Duplex Dwelling Bedroom 2 (North)	1.0	9.6
GULL-PS-11	Blue on beige/white	Drywall	Duplex Dwelling Bedroom 2 (North)	1.0	8.0
GULL-PS-12	White	Drywall	Duplex Dwelling Bedroom 2 (North)	1.0	6.1
GULL-PS-13	Pink on yellow	Drywall	Duplex Dwelling Bedroom 1 (South)	1.0	6.8
GULL-PS-14	Light blue on dark green	Drywall	Duplex Dwelling Living Room (South)	1.0	***14***
GULL-PS-15	White	Drywall	Duplex Dwelling Washroom (South)	1.0	3.1
GULL-PS-16	Beige on blue on green	Drywall	Duplex Dwelling Basement (South)	1.0	3.0
GULL-PS-17	Grey on grey	concrete	Duplex Dwelling Basement (South)	1.0	7.3
GULL-PS-18	White on white	Wood	Duplex Dwelling Exterior	1.0	***18***

Notes:
RDL: Reportable detection limit
<X: Non Detect
HPA: Hazardous Products Act
Bolded, italicized and underlined results indicate that mercury concentration is above the Federal HPA criterion of 10 mg/kg
Bolded, and shaded results indicate that mercury concentration is above the Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for mercury in soil at a commercial site (24 mg/kg)

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

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	RDL (mg/kg)	Total Mercury (mg/kg)
GULL-PS-19	Red on grey	Wood	Duplex Dwelling Exterior	1.0	1.7
GULL-PS-20	Mutiple layers of grey	Concrete	Duplex Dwelling Exterior	1.0	8.0
GULL-PS-21	Grey on grey on red	Wood	Covered Walkway	1.0	2.1
GULL-PS-22	White on white	Wood	Covered Walkway	1.0	***23***
GULL-PS-23	Mutiple layers of grey	Wood	Main Equipment Building Interior	1.0	1.8
GULL-PS-24	Mutiple layers of grey on grey	Wood	Main Equipment Building Interior	1.0	***13***
GULL-PS-25	Red	Metal	Light Tower Exterior	1.0	<1.0
GULL-PS-26	Red on red	Metal	Light Tower Exterior	1.0	***33***
GULL-PS-27	White on white	Metal	Light Tower Interior	1.0	3.6
GULL-PS-28	White on brass	Metal	Light Tower Top Floor	1.0	<1.0
GULL-PS-29	Mutiple layers of grey on red	Metal	Light Tower Top Floor	1.0	<1.0
GULL-PS-30	White	Wood	Battery Shed Interior	1.0	<1.0
GULL-PS-31	Grey	Wood	Battery Shed Interior	1.0	<1.0
GULL-PS-32	White	Wood	Battery Shed Interior	1.0	<1.0
GULL-PS-33	Green on white	Wood	Covered Walkway	1.0	9.9
GULL-PS-34	Red on red	Wood	Tramway	1.0	<1.0
GULL-PS-35	Red on red	Metal	Winch House Interior	1.0	<1.0
GULL-PS-36	Grey	Metal	Winch House Interior	1.0	<1.0

Notes:
RDL: Reportable detection limit
<X: Non Detect
HPA: Hazardous Products Act
Bolded, italicized and underlined results indicate that mercury concentration is above the Federal HPA criterion of 10 mg/kg
Bolded, and shaded results indicate that mercury concentration is above the Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for mercury in soil at a commercial site (24 mg/kg)

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

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	RDL (mg/kg)	Total Mercury (mg/kg)
GULL-PS-37	White	Wood	Winch House Exterior	1.0	***14***
GULL-PS-38	Orange/Red	Wood	Storage Shed #1 Exterior	1.0	***29***
GULL-PS-39	Blue on white	Drywall	Lower Equipment Building Interior	1.0	7.1
GULL-PS-40	Grey on red	Concrete	Lower Equipment Building Interior	1.0	1.2
GULL-PS-41	White	Drywall	Lower Equipment Building Interior	1.0	1.0
GULL-PS-42	Metallic silver on red	Metal	Lower Equipment Building Interior	1.0	<1.0
GULL-PS-43	White	Wood	Lower Equipment Building Exterior	1.0	***19***
GULL-PS-44	White	Wood	Storage Shed #2 Exterior	1.0	***18***
GULL-PS-45	Blue on yellow	Drywall	Storage Shed #2 Interior	1.0	***12***
GULL-PS-46	Grey on green	Wood	Storage Shed #2 Interior	1.0	***13***
GULL-PS-47	Red on white	Wood	Storage Shed #2 Exterior	1.0	***12***
GULL-PS-48	Grey on red	Wood	Videograph Building Interior	1.0	<1.0
GULL-PS-49	White	Wood	Videograph Building Interior	1.0	<1.0
GULL-PS-50	White	Wood	Videograph Building Exterior	1.0	<1.0
GULL-PS-51	Orange	Metal	Boathouse Interior	1.0	<1.0
GULL-PS-52	White	Wood	Boathouse Exterior	1.0	***32***
GULL-PS-53	Orange on white	Wood	Boathouse Exterior	1.0	***23***

Notes:
RDL: Reportable detection limit
<X: Non Detect
HPA: Hazardous Products Act
Bolded, italicized and underlined results indicate that mercury concentration is above the Federal HPA criterion of 10 mg/kg
Bolded, and shaded results indicate that mercury concentration is above the Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for mercury in soil at a commercial site (24 mg/kg)

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

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	RDL (mg/kg)	Total Mercury (mg/kg)
GULL-PS-DUP-1	Mutiple layers of grey	Concrete	Duplex Dwelling Basement (North)	1.0	1.0
GULL-PS-DUP-2	Beige on blue	Drywall	Duplex Dwelling Bedroom 2 (North)	1.0	8.2
GULL-PS-DUP-3	Red on grey	Wood	Duplex Dwelling Exterior	1.0	2.2
GULL-PS-DUP-4	White	Drywall	Lower Equipment Building Interior	1.0	1.2
GULL-PS-DUP-5	White	Wood	Storage Shed #2 Exterior	1.0	***23***

Notes:
RDL: Reportable detection limit
<X: Non Detect
HPA: Hazardous Products Act
Bolded, italicized and underlined results indicate that mercury concentration is above the Federal HPA criterion of 10 mg/kg
Bolded, and shaded results indicate that mercury concentration is above the Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for mercury in soil at a commercial site (24 mg/kg)
GULL-PS-DUP1 is a duplicate of GULL-PS-1
GULL-PS-DUP2 is a duplicate of GULL-PS-10
GULL-PS-DUP3 is a duplicate of GULL-PS-19
GULL-PS-DUP4 is a duplicate of GULL-PS-41
GULL-PS-DUP5 is a duplicate of GULL-PS-44

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

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	MDL (mg/kg)	Total PCB (mg/kg)
GULL-PS-1	Mutiple layers of grey	Concrete	Duplex Dwelling Basement (North)	5.0	<5.0
GULL-PS-19	Red on grey	Wood	Duplex Dwelling Exterior	5.0	<5.0
GULL-PS-20	Mutiple layers of grey	Concrete	Duplex Dwelling Exterior	5.0	<5.0
GULL-PS-37	White	Wood	Winch House Exterior	5.0	<5.0
GULL-PS-51	Orange	Metal	Boathouse Interior	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.)	MDL (mg/L)	Lead Leachate (mg/L)
GULL-PS-8	Canary yellow	Drywall	Duplex Dwelling Bedroom 3 (North)	0.005	0.62
GULL-PS-10	Beige on blue	Drywall	Duplex Dwelling Bedroom 2 (North)	0.005	3.8
GULL-PS-18	White on white	Wood	Duplex Dwelling Exterior	0.005	19
GULL-PS-22	White on white	Wood	Covered Walkway	0.005	16
GULL-PS-25	Red	Metal	Light Tower Exterior	0.005	71
GULL-PS-26	Red on red	Metal	Light Tower Exterior	0.050	130
GULL-PS-27	White on white	Metal	Light Tower Interior	0.005	17
GULL-PS-28	White on brass	Metal	Light Tower Top Floor	0.050	150
GULL-PS-33	Green on white	Wood	Covered Walkway	0.050	150
GULL-PS-34	Red on red	Wood	Tramway	0.005	4
GULL-PS-38	Orange/Red	Wood	Storage Shed #1 Exterior	0.005	10
GULL-PS-40	Grey on red	Concrete	Lower Equipment Building Interior	0.005	2.1
GULL-PS-43	White	Wood	Lower Equipment Building Exterior	0.005	38
GULL-PS-52	White	Wood	Boathouse Exterior	0.005	11
GULL-PS-53	Orange on white	Wood	Boathouse Exterior	0.005	21

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)

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

Sample ID	Colour Description	Substrate	Sample Location (Room No.)	MDL (mg/L)	Mercury Leachate (mg/L)
GULL-PS-26	Red on red	Metal	Light Tower Exterior	0.0001	0.00014
GULL-PS-52	White	Wood	Boathouse Exterior	0.0001	0.00063

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)

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

Sample ID	Sample Description	Sample Location (Room No.)	Mould Identified, in rank order	Mould Growth
GULL-MD-01	White Painted Drywall Ceiling	Duplex Dwelling Kitchen (North)	*Stachybotrys, Cladosprium, Ulocladium, Aspergillus*	Abundant
GULL-MD-02	Drywall Ceiling	Storage Shed #2	*Cladosporium, Acremonium, Asperillus / Pencillium* (a few spores)	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.

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 551206176
Customer ID: 55MEEN26
Customer PO:
Project ID:

Attn: Lori Wiseman
AMEC Environment & Infrastructure
133 Crosbie Road
St. John's, NL A1B 4A5

Phone: (709) 722-7023
Fax: (709) 722-7353
Collected:
Received: 12/19/2012
Analyzed: 12/27/2012

Proj: GULL ISLAND HAZMAT - Tf12076463

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

Client Sample ID: GULL-AS-1 ***Lab Sample ID:*** **551206176-0001**
Sample Description: GREY BRICK MORTAR

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/27/2012	Gray/Red	0%	100%	None Detected	

Client Sample ID: GULL-AS-2 ***Lab Sample ID:*** **551206176-0002**
Sample Description: WIRING INSULATION

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	White /Black	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-3 ***Lab Sample ID:*** **551206176-0003**
Sample Description: GREY PATTERN PARTICLE BOARD WITH BROWN MESHING AND/BEIGE ADHESIVE

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	rown /Green /Beig	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-4 ***Lab Sample ID:*** **551206176-0004**
Sample Description: DRYWALL COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/27/2012	Tan	0%	96%	**4% Chrysotile**	

Client Sample ID: GULL-AS-5 ***Lab Sample ID:*** **551206176-0005**
Sample Description: PARTICLE BOARD WITH BEIGE ADHESIVE

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	3rown /Blue /Greer	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-6 ***Lab Sample ID:*** **551206176-0006**
Sample Description: BLUE COUNTERTOP

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	3rown /Blue /Greer	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-7 ***Lab Sample ID:*** **551206176-0007**
Sample Description: PINK FIBREGLASS INSULATION WITH TAR + BEIGE PAPER/BACKING

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Brown /Tan /Black	0.0%	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 551206176
Customer ID: 55MEEN26
Customer PO:
Project ID:

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

Client Sample ID: GULL-AS-8 ***Lab Sample ID:*** **551206176-0008**
Sample Description: DRYWALL COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/27/2012		0%	97%	**3% Chrysotile**	

Client Sample ID: GULL-AS-9 ***Lab Sample ID:*** **551206176-0009**
Sample Description: PINK FIBREGLASS INSULATION WITH TAR + BEIGE PAPER/BACKING

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Brown /Tan /Black	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-10 ***Lab Sample ID:*** **551206176-0010**
Sample Description: DRYWALL COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/27/2012	Gray	0%	96%	**4% Chrysotile**	

Client Sample ID: GULL-AS-11 ***Lab Sample ID:*** **551206176-0011**
Sample Description: GREEN COUNTERTOP

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Black /Green	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-12 ***Lab Sample ID:*** **551206176-0012**
Sample Description: GREY BRICK MORTAR

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Gray	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-13 ***Lab Sample ID:*** **551206176-0013**
Sample Description: WHITE WINDOW CAULKING

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	White	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-14 ***Lab Sample ID:*** **551206176-0014**
Sample Description: RED/BLACK SHINGLE

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Gray /Red /Black	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-23 ***Lab Sample ID:*** **551206176-0015**
Sample Description: RED/BLACK SHINGLE

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Gray /Red /Black	0.0%	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 551206176
Customer ID: 55MEEN26
Customer PO:
Project ID:

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

Client Sample ID: GULL-AS-15 ***Lab Sample ID:*** **551206176-0016**
Sample Description: BLACK EXTERIOR FELT PAPER

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Black	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-16 ***Lab Sample ID:*** **551206176-0017**
Sample Description: GREY CEMENT BOARD

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/27/2012	Gray/White	0%	85%	**15% Chrysotile**	

Client Sample ID: GULL-AS-17 ***Lab Sample ID:*** **551206176-0018**
Sample Description: GREY CONCRETE SIDING WITH BLACK TAR PAPER

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/27/2012	Gray/White/Various	0%	90%	**10% Chrysotile**	

Client Sample ID: GULL-AS-18 ***Lab Sample ID:*** **551206176-0019**
Sample Description: RED/BLACK SHINGLE

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Red /Black /Silver	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-19 ***Lab Sample ID:*** **551206176-0020**
Sample Description: BEIGE WINDOW CAULKING

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Beige	0.0%	96.1%	**3.9% Chrysotile**	

Client Sample ID: GULL-AS-20 ***Lab Sample ID:*** **551206176-0021**
Sample Description: RED/BLACK SHINGLE WITH TAR PAPER

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	White /Red /Black	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-21 ***Lab Sample ID:*** **551206176-0022**
Sample Description: WHITE ELECTRICAL CAULKING

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	White	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-22 ***Lab Sample ID:*** **551206176-0023**
Sample Description: RED/BLACK SHINGLE

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Red /Black	0.0%	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 551206176
Customer ID: 55MEEN26
Customer PO:
Project ID:

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

Client Sample ID: GULL-AS-24 ***Lab Sample ID:*** **551206176-0024**
Sample Description: GREEN/BLACK SHINGLE

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Red /Black /Green	0.0%	100%	None Detected	SHINGLE & TAR NEGATIVE FOR ASBESTOS

Client Sample ID: GULL-AS-25 ***Lab Sample ID:*** **551206176-0025**
Sample Description: DRYWALL COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/27/2012	Tan	0%	95%	**5% Chrysotile**	

Client Sample ID: GULL-AS-26 ***Lab Sample ID:*** **551206176-0026**
Sample Description: GREY BRICK MORTAR

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/27/2012	Gray	0%	100%	**<1% Chrysotile**	

Client Sample ID: GULL-AS-27 ***Lab Sample ID:*** **551206176-0027**
Sample Description: BLACK FELT PAPER

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Black	0.0%	95.7%	**4.3% Chrysotile**	

Client Sample ID: GULL-AS-28 ***Lab Sample ID:*** **551206176-0028**
Sample Description: BLACK/RED SHINGLE

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Gray /Red /Black	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-29 ***Lab Sample ID:*** **551206176-0029**
Sample Description: PINK FIBREGLASS INSULATION WITH BLACK BACKING

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Black /Beige	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-30 ***Lab Sample ID:*** **551206176-0030**
Sample Description: BEIGE WINDOW CAULKING

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Gray /White	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-31 ***Lab Sample ID:*** **551206176-0031**
Sample Description: PINK FIBREGLASS INSULATION WITH TAR + BEIGE PAPER/BACKING

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	White /Black /Beige	0.0%	100%	**<0.25% Chrysotile**	

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 551206176
Customer ID: 55MEEN26
Customer PO:
Project ID:

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

Client Sample ID: GULL-AS-32 ***Lab Sample ID:*** **551206176-0032**
Sample Description: BLACK SHINGLE

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Black	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-33 ***Lab Sample ID:*** **551206176-0033**
Sample Description: GREY PARTICLE BOARD WITH BROWN MESHING AND GREY/ADHESIVE

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Brown /Gray	0.0%	99.4%	**0.58% Chrysotile**	

Client Sample ID: GULL-AS-34 ***Lab Sample ID:*** **551206176-0034**
Sample Description: BLACK FELT PAPER

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	White /Black	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-35 ***Lab Sample ID:*** **551206176-0035**
Sample Description: BLACK OVER GREY CAULKING (WINDOW)

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	White /Black	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-36 ***Lab Sample ID:*** **551206176-0036**
Sample Description: WHITE WINDOW CAULKING

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	White	0.0%	86.7%	**13.3% Chrysotile**	

Client Sample ID: GULL-AS-37 ***Lab Sample ID:*** **551206176-0037**
Sample Description: GREY WINDOW CAULKING

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Gray	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-38 ***Lab Sample ID:*** **551206176-0038**
Sample Description: RED/BLACK SHINGLE

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Red /Black	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-39 ***Lab Sample ID:*** **551206176-0039**
Sample Description: RED/BLACK SHINGLE

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Gray /Red /Black	0.0%	99.6%	**0.35% Chrysotile**	SHINGLE NEGATIVE FOR ASBESTOS, TAR IS POSITIVE FOR ASBESTOS

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 551206176
Customer ID: 55MEEN26
Customer PO:
Project ID:

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

Client Sample ID: GULL-AS-40 ***Lab Sample ID:*** **551206176-0040**
Sample Description: BLACK FELT PAPER

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	White /Black	0.0%	100%	None Detected	

Client Sample ID: GULL-AS-DUP-1 ***Lab Sample ID:*** **551206176-0041**
Sample Description: DRYWALL COMPOUND

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/27/2012	Gray	0%	97%	**3% Chrysotile**	

Client Sample ID: GULL-AS-DUP-2 ***Lab Sample ID:*** **551206176-0042**
Sample Description: GREY CEMENT BOARD

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	12/27/2012	Gray/White	0%	85%	**15% Chrysotile**	

Client Sample ID: GULL-AS-DUP-3 ***Lab Sample ID:*** **551206176-0043**
Sample Description: GREEN/BLACK SHINGLE

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Red /Black /Green	0.0%	81.0%	**19.0% Chrysotile**	SHINGLE NEGATIVE FOR ASBESTOS, TAR IS POSITIVE FOR ASBESTOS

Client Sample ID: GULL-AS-DUP-4 ***Lab Sample ID:*** **551206176-0044**
Sample Description: RED/BLACK SHINGLE

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM Grav. Reduction	12/21/2012	Gray /Red /Black	0.0%	98.9%	**1.1% Chrysotile**	SHINGLE NEGATIVE FOR ASBESTOS, TAR IS POSITIVE FOR ASBESTOS

Analyst(s)

Kevin Pang	PLM Grav. Reduction	(4)
Matthew Davis	PLM	(10)
	PLM Grav. Reduction	(30)

Kevin Pang
or other Approved Signatory

Any questions please contact Kevin Pang.

Report amended: 02/21/201316:05:38 Replaces initial report from: 12/27/201212:21:05 Reason Code: Client-Change to Sample ID

Your Project #: TF12076463
Site Location: GULLS ISLAND HAZMAT
Your C.O.C. #: ET255412

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

Report Date: 2013/01/03

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2J5721
Received: 2012/12/12, 09:26

Sample Matrix: Paint
Samples Received: 58

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Mercury - Total in Leachate (CVAA,LL)	3	2013/01/02	2013/01/02	ATL SOP 00026	Based on EPA245.1
Metals Leach. Tot. MS - N-per	2	2012/12/21	2012/12/22	ATL SOP 00059	Based on EPA6020A
Metals Leach. Tot. MS - N-per	1	2012/12/21	2012/12/31	ATL SOP 00059	Based on EPA6020A
Metals Leach. Tot. MS - N-per	10	2012/12/22	2012/12/23	ATL SOP 00059	Based on EPA6020A
Metals Leach. Tot. MS - N-per	2	2012/12/22	2012/12/31	ATL SOP 00059	Based on EPA6020A
Metals Paint Acid Extr. ICPMS (1)	23	2012/12/14	2012/12/15	ATL SOP 00024	Based on EPA6020A
Metals Paint Acid Extr. ICPMS (1)	7	2012/12/17	2012/12/17	ATL SOP 00024	Based on EPA6020A
Metals Paint Acid Extr. ICPMS (1)	27	2012/12/18	2012/12/18	ATL SOP 00024	Based on EPA6020A
Metals Paint Acid Extr. ICPMS (1)	1	2012/12/18	2012/12/19	ATL SOP 00024	Based on EPA6020A
PCBs in Paint by GC/ECD	5	2012/12/14	2012/12/20		in house
TCLP Inorganic extraction - pH	3	N/A	2012/12/14	ATL SOP-00035	Based on EPA1311
TCLP Inorganic extraction - pH	12	N/A	2012/12/22	ATL SOP-00035	Based on EPA1311
TCLP Inorganic extraction - Weight	3	N/A	2012/12/21	ATL SOP-00035	Based on EPA1311
TCLP Inorganic extraction - Weight	12	N/A	2012/12/22	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.

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

Maxxam Job #: B2J5721
Report Date: 2013/01/03

AMEC Environment & Infrastructure
Client Project #: TF12076463
Site Location: GULLS ISLAND HAZMAT
Sampler Initials: CT

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 Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B2J5721
Report Date: 2013/01/03

AMEC Environment & Infrastructure
Client Project #: TF12076463
Site Location: GULLS ISLAND HAZMAT
Sampler Initials: CT

RESULTS OF ANALYSES OF PAINT

Maxxam ID		PY3475	PY3477	PY3485	PY3489	PY3492		PY3493		
Sampling Date		2012/12/02	2012/12/02	2012/12/02	2012/12/02	2012/12/02		2012/12/02		
	Units	**GULL-PS-8**	**GULL-PS-10**	**GULL-PS-18**	**GULL-PS-22**	**GULL-PS-25**	**QC Batch**	**GULL-PS-26**	**RDL**	**QC Batch**
Inorganics										
Sample Weight (as received)	g	2.5	2.5	2.5	2.5	2.5	3078219	5.0	N/A	3076931
Initial pH	N/A	8.8	9.0	6.2	6.3	6.2	3078224	6.0		3076942
Final pH	N/A	6.0	5.7	5.0	5.1	5.0	3078224	5.0		3076942

Maxxam ID		PY3494	PY3495	PY3500	PY3501		PY3505		
Sampling Date		2012/12/02	2012/12/02	2012/12/02	2012/12/02		2012/12/02		
	Units	**GULL-PS-27**	**GULL-PS-28**	**GULL-PS-33**	**GULL-PS-34**	**QC Batch**	**GULL-PS-38**	**RDL**	**QC Batch**
Inorganics									
Sample Weight (as received)	g	2.5	2.2	2.5	2.5	3078219	5.0	N/A	3076931
Initial pH	N/A	5.8	NA	6.5	5.6	3078224	NA		3076942
Final pH	N/A	5.0	5.2	5.2	5.0	3078224	5.0		3076942

Maxxam ID		PY3507	PY3510		PY3519		PY3520		
Sampling Date		2012/12/02	2012/12/02		2012/12/05		2012/12/05		
	Units	**GULL-PS-40**	**GULL-PS-43**	**QC Batch**	**GULL-PS-52**	**QC Batch**	**GULL-PS-53**	**RDL**	**QC Batch**
Inorganics									
Sample Weight (as received)	g	2.5	2.5	3078219	5.0	3076931	2.5	N/A	3078219
Initial pH	N/A	8.4	6.3	3078224	6.0	3076942	5.9		3078224
Final pH	N/A	5.2	5.1	3078224	5.0	3076942	5.0		3078224

MERCURY BY COLD VAPOUR AA (PAINT)

Maxxam ID		PY3493	PY3505	PY3519		
Sampling Date		2012/12/02	2012/12/02	2012/12/05		
	Units	**GULL-PS-26**	**GULL-PS-38**	**GULL-PS-52**	**RDL**	**QC Batch**
Metals						
Leachable Mercury (Hg)	ug/L	0.14	0.99	0.63	0.10	3083404

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B2J5721
Report Date: 2013/01/03

AMEC Environment & Infrastructure
Client Project #: TF12076463
Site Location: GULLS ISLAND HAZMAT
Sampler Initials: CT

ELEMENTS BY ICP/MS (PAINT)

Maxxam ID		PY3475	PY3477	PY3485	PY3489	PY3492			PY3493		
Sampling Date		2012/12/02	2012/12/02	2012/12/02	2012/12/02	2012/12/02			2012/12/02		
	Units	**GULL-PS-8**	**GULL-PS-10**	**GULL-PS-18**	**GULL-PS-22**	**GULL-PS-25**	**RDL**	**QC Batch**	**GULL-PS-26**	**RDL**	**QC Batch**
Metals											
Leachable Lead (Pb)	ug/L	620	3800	19000	16000	71000	5.0	3079169	130000	50	3078348

Maxxam ID		PY3494		PY3495	PY3500		PY3501		PY3505		
Sampling Date		2012/12/02		2012/12/02	2012/12/02		2012/12/02		2012/12/02		
	Units	**GULL-PS-27**	**RDL**	**GULL-PS-28**	**GULL-PS-33**	**RDL**	**GULL-PS-34**	**QC Batch**	**GULL-PS-38**	**RDL**	**QC Batch**
Metals											
Leachable Lead (Pb)	ug/L	17000	5.0	150000	150000	50	4000	3079169	10000	5.0	3078348

Maxxam ID		PY3507	PY3510		PY3519		PY3520		
Sampling Date		2012/12/02	2012/12/02		2012/12/05		2012/12/05		
	Units	**GULL-PS-40**	**GULL-PS-43**	**QC Batch**	**GULL-PS-52**	**QC Batch**	**GULL-PS-53**	**RDL**	**QC Batch**
Metals									
Leachable Lead (Pb)	ug/L	2100	38000	3079169	11000	3078348	21000	5.0	3079169

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		PY3468	PY3469	PY3470	PY3470	PY3470		PY3471		PY3472	PY3473		
Sampling Date		2012/12/02	2012/12/02	2012/12/02	2012/12/02	2012/12/02		2012/12/02		2012/12/02	2012/12/02		
	Units	**GULL-PS-1**	**GULL-PS-2**	**GULL-PS-3**	**GULL-PS-3 Lab-Dup**	**GULL-PS-3 Lab-Dup 2**	**RDL**	**GULL-PS-4**	**RDL**	**GULL-PS-5**	**GULL-PS-6**	**RDL**	**QC Batch**
Metals													
Acid Extractable Lead (Pb)	mg/kg	2800	2400	1300	1300	1400	5.0	15	10	550	1100	5.0	3073045
Acid Extractable Mercury (Hg)	mg/kg	<1.0	10	<1.0	1.1	1.1	1.0	<2.0(1)	2.0	3.4	11	1.0	3073045

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Elevated reporting limit due to a low sample weight used in the digestion.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B2J5721
Report Date: 2013/01/03

AMEC Environment & Infrastructure
Client Project #: TF12076463
Site Location: GULLS ISLAND HAZMAT
Sampler Initials: CT

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		PY3474	PY3475	PY3476	PY3477	PY3478	PY3479		PY3480	PY3481		
Sampling Date		2012/12/02	2012/12/02	2012/12/02	2012/12/02	2012/12/02	2012/12/02		2012/12/02	2012/12/02		
	Units	**GULL-PS-7**	**GULL-PS-8**	**GULL-PS-9**	**GULL-PS-10**	**GULL-PS-11**	**GULL-PS-12**	**QC Batch**	**GULL-PS-13**	**GULL-PS-14**	**RDL**	**QC Batch**
Metals												
Acid Extractable Lead (Pb)	mg/kg	2300	5300	2600	13000	280	410	3073045	1600	3400	5.0	3071901
Acid Extractable Mercury (Hg)	mg/kg	2.3	8.6	1.7	9.6	8.0	6.1	3073045	6.8	14	1.0	3071901

Maxxam ID		PY3481	PY3481	PY3482	PY3483	PY3484	PY3485	PY3486		
Sampling Date		2012/12/02	2012/12/02	2012/12/02	2012/12/02	2012/12/02	2012/12/02	2012/12/02		
	Units	**GULL-PS-14 Lab-Dup**	**GULL-PS-14 Lab-Dup 2**	**GULL-PS-15**	**GULL-PS-16**	**GULL-PS-17**	**GULL-PS-18**	**GULL-PS-19**	**RDL**	**QC Batch**
Metals										
Acid Extractable Lead (Pb)	mg/kg	2200(1)	3200	740	3100	2000	32000	3400	5.0	3071901
Acid Extractable Mercury (Hg)	mg/kg	13	12	3.1	3.0	7.3	18	1.7	1.0	3071901

Maxxam ID		PY3487	PY3488	PY3489	PY3490	PY3491		PY3492	PY3493		
Sampling Date		2012/12/02	2012/12/02	2012/12/02	2012/12/02	2012/12/02		2012/12/02	2012/12/02		
	Units	**GULL-PS-20**	**GULL-PS-21**	**GULL-PS-22**	**GULL-PS-23**	**GULL-PS-24**	**QC Batch**	**GULL-PS-25**	**GULL-PS-26**	**RDL**	**QC Batch**
Metals											
Acid Extractable Lead (Pb)	mg/kg	2300	1900	19000	3300	3900	3073045	19000	25000	5.0	3073051
Acid Extractable Mercury (Hg)	mg/kg	8.0	2.1	23	1.8	13	3073045	<1.0	33	1.0	3073051

Maxxam ID		PY3494		PY3495	PY3496	PY3497	PY3498	PY3499		
Sampling Date		2012/12/02		2012/12/02	2012/12/02	2012/12/02	2012/12/02	2012/12/02		
	Units	**GULL-PS-27**	**QC Batch**	**GULL-PS-28**	**GULL-PS-29**	**GULL-PS-30**	**GULL-PS-31**	**GULL-PS-32**	**RDL**	**QC Batch**
Metals										
Acid Extractable Lead (Pb)	mg/kg	27000	3073051	15000	1800	9.6	790	13	5.0	3070242
Acid Extractable Mercury (Hg)	mg/kg	3.6	3073051	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	3070242

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Poor RPD due to sample inhomogeneity.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B2J5721
Report Date: 2013/01/03

AMEC Environment & Infrastructure
Client Project #: TF12076463
Site Location: GULLS ISLAND HAZMAT
Sampler Initials: CT

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		PY3500		PY3501	PY3501	PY3501		PY3502	PY3503		
Sampling Date		2012/12/02		2012/12/02	2012/12/02	2012/12/02		2012/12/02	2012/12/02		
	Units	**GULL-PS-33**	**QC Batch**	**GULL-PS-34**	**GULL-PS-34 Lab-Dup**	**GULL-PS-34 Lab-Dup 2**	**QC Batch**	**GULL-PS-35**	**GULL-PS-36**	**RDL**	**QC Batch**
Metals											
Acid Extractable Lead (Pb)	mg/kg	32000	3070258	12000	27000(1)	16000	3070242	380	360	5.0	3070258
Acid Extractable Mercury (Hg)	mg/kg	9.9	3070258	<1.0	<1.0	<1.0	3070242	<1.0	<1.0	1.0	3070258

Maxxam ID		PY3504	PY3505	PY3506	PY3507	PY3508	PY3509	PY3510	PY3511		
Sampling Date		2012/12/02	2012/12/02	2012/12/02	2012/12/02	2012/12/02	2012/12/02	2012/12/02	2012/12/05		
	Units	**GULL-PS-37**	**GULL-PS-38**	**GULL-PS-39**	**GULL-PS-40**	**GULL-PS-41**	**GULL-PS-42**	**GULL-PS-43**	**GULL-PS-44**	**RDL**	**QC Batch**
Metals											
Acid Extractable Lead (Pb)	mg/kg	850	14000	1800	13000	410	2200	6200	910	5.0	3070258
Acid Extractable Mercury (Hg)	mg/kg	14	29	7.1	1.2	1.0	<1.0	19	18	1.0	3070258

Maxxam ID		PY3512	PY3513	PY3514	PY3515	PY3516		PY3517		
Sampling Date		2012/12/05	2012/12/05	2012/12/05	2012/12/05	2012/12/05		2012/12/05		
	Units	**GULL-PS-45**	**GULL-PS-46**	**GULL-PS-47**	**GULL-PS-48**	**GULL-PS-49**	**QC Batch**	**GULL-PS-50**	**RDL**	**QC Batch**
Metals										
Acid Extractable Lead (Pb)	mg/kg	630	4100	3200	26	6.0	3070258	6.4	5.0	3073051
Acid Extractable Mercury (Hg)	mg/kg	12	13	12	<1.0	<1.0	3070258	<1.0	1.0	3073051

Maxxam ID		PY3518	PY3518	PY3518		PY3519	PY3520	PY3521	PY3522		
Sampling Date		2012/12/05	2012/12/05	2012/12/05		2012/12/05	2012/12/05	2012/12/02	2012/12/02		
	Units	**GULL-PS-51**	**GULL-PS-51 Lab-Dup**	**GULL-PS-51 Lab-Dup 2**	**QC Batch**	**GULL-PS-52**	**GULL-PS-53**	**GULL-PS-DUP1**	**GULL-PS-DUP2**	**RDL**	**QC Batch**
Metals											
Acid Extractable Lead (Pb)	mg/kg	370	560(1)	190(1)	3070258	9000	14000	1400	12000	5.0	3073051
Acid Extractable Mercury (Hg)	mg/kg	<1.0	<1.0	<1.0	3070258	32	23	1.0	8.2	1.0	3073051

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Poor RPD due to sample inhomogeneity.

Maxxam Job #: B2J5721
Report Date: 2013/01/03

AMEC Environment & Infrastructure
Client Project #: TF12076463
Site Location: GULLS ISLAND HAZMAT
Sampler Initials: CT

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		PY3523	PY3523	PY3523	PY3524	PY3525		
Sampling Date		2012/12/02	2012/12/02	2012/12/02	2012/12/02	2012/12/05		
	Units	**GULL-PS-DUP3**	**GULL-PS-DUP3 Lab-Dup**	**GULL-PS-DUP3 Lab-Dup 2**	**GULL-PS-DUP4**	**GULL-PS-DUP5**	**RDL**	**QC Batch**
Metals								
Acid Extractable Lead (Pb)	mg/kg	3400	3500	2600	600	1600	5.0	3073051
Acid Extractable Mercury (Hg)	mg/kg	2.2	1.2	1.5	1.2	23	1.0	3073051

POLYCHLORINATED BIPHENYLS BY GC-ECD (PAINT)

Maxxam ID		PY3468	PY3486	PY3487	PY3504	PY3518		
Sampling Date		2012/12/02	2012/12/02	2012/12/02	2012/12/02	2012/12/05		
	Units	**GULL-PS-1**	**GULL-PS-19**	**GULL-PS-20**	**GULL-PS-37**	**GULL-PS-51**	**RDL**	**QC Batch**
PCBs								
Total PCB	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	3070434
Surrogate Recovery (%)								
Decachlorobiphenyl	%	18(1)	12(1)	20(1)	14(1)	53		3070434

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B2J5721
Report Date: 2013/01/03

AMEC Environment & Infrastructure
Client Project #: TF12076463
Site Location: GULLS ISLAND HAZMAT
Sampler Initials: CT

Package 1	15.7°C

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

GENERAL COMMENTS

Sample PY3475-01: 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 PY3477-01: 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 PY3485-01: 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 PY3489-01: 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 PY3492-01: 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 PY3493-01: 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 PY3494-01: 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 PY3495-01: 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 PY3500-01: 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 PY3501-01: 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 PY3505-01: 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 PY3507-01: 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 PY3510-01: Method Deviation Comment: Reduced sample weight used for leachate procedure due to insufficient sample. All extraction ratios maintained. Minimal impact on sample

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

data quality.

Sample PY3519-01: 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 PY3520-01: 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 Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B2J5721
Report Date: 2013/01/03

AMEC Environment & Infrastructure
Client Project #: TF12076463
Site Location: GULLS ISLAND HAZMAT
Sampler Initials: CT

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3070242	Acid Extractable Lead (Pb)	2012/12/15	NC	75 - 125	94	75 - 125	<5.0	mg/kg	74.8(1, 2)	35		
3070242	Acid Extractable Mercury (Hg)	2012/12/15	95	75 - 125	98	75 - 125	<1.0	mg/kg	NC	35		
3070258	Acid Extractable Lead (Pb)	2012/12/15	NC	75 - 125	96	75 - 125	<5.0	mg/kg	41.6(1, 2)	35		
3070258	Acid Extractable Mercury (Hg)	2012/12/15	103	75 - 125	101	75 - 125	<1.0	mg/kg	NC	35		
3070434	Decachlorobiphenyl	2012/12/20	25(1, 3)	30 - 130	32	30 - 130	79	%				
3070434	Total PCB	2012/12/20	3.4(1, 4)	60 - 130	98	60 - 130	<5.0	mg/kg	NC	50		
3071901	Acid Extractable Lead (Pb)	2012/12/17	NC	75 - 125	99	75 - 125	<5.0	mg/kg	40.4(1, 2)	35		
3071901	Acid Extractable Mercury (Hg)	2012/12/17	NC	75 - 125	104	75 - 125	<1.0	mg/kg	13.4	35		
3073045	Acid Extractable Lead (Pb)	2012/12/18	NC	75 - 125	104	75 - 125	<5.0	mg/kg	3.3	35		
3073045	Acid Extractable Mercury (Hg)	2012/12/18	96	75 - 125	107	75 - 125	<1.0	mg/kg	NC	35		
3073051	Acid Extractable Lead (Pb)	2012/12/18	NC	75 - 125	104	75 - 125	<5.0	mg/kg	3.3	35		
3073051	Acid Extractable Mercury (Hg)	2012/12/18	89	75 - 125	106	75 - 125	<1.0	mg/kg	NC	35		
3076931	Sample Weight (as received)	2012/12/21					NA, RDL=N/A	g	0	N/A		
3078219	Sample Weight (as received)	2012/12/22					NA, RDL=N/A	g				
3078348	Leachable Lead (Pb)	2012/12/22			110	80 - 120	<5.0	ug/L	NC	35		
3079169	Leachable Lead (Pb)	2012/12/31			108	80 - 120	<5.0	ug/L				
3083404	Leachable Mercury (Hg)	2013/01/02			104	80 - 120	<0.10	ug/L			104	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.
(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.

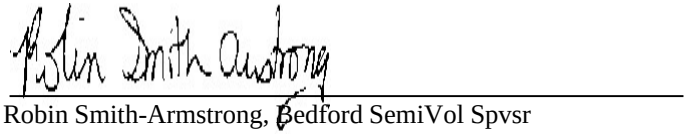
Validation Signature Page

Maxxam Job #: B2J5721

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Kevin Macdonald, Inorganics Supervisor

Mike Macgillivray, Scientific Specialist (Inorganics)



Robin Smith-Armstrong, Bedford SemiVol Spvsr

==========

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.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

emcscientific
INCORPORATED

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: 39704
Job/Project Name: Gull Island Hazmat
Job/Project No: TF12076463 **No. of Samples:** 2
Sample Type: Bulk **Date Received:** Dec 12/12
Analysis Method(s): Direct Microscopic Examination
Date Analyzed: Dec 17/12 **Date Reported:** Dec 17/12
Analyst: Fajun Chen, Ph.D., *Principal Mycologist*

Client's Sample ID	Lab Sample No.	Date Sampled	Description/Location	Mould Identified, in Rank Order	Mould Growth
GULL-MD-1	188895	Dec 2/12	White painted Gyproc ceiling	*Stachybotrys* *Cladosporium* *Ulocladium* *Aspergillus*	Abundant
GULL-MD-2	188896	Dec 2/12	Gyproc ceiling	*Cladosporium* *Acremonium* *Aspergillus/Penicillium* (a few spores)	Abundant

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

APPENDIX E

Room-By-Room Inspection Sheets

ing	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Shelln	Basement (Right ~~Left~~)			2.5mH

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Multiple layers ob grey on concrete			GULL-PS-1 GULL-PS-DUP-1
Walls	↓ 11			
Ceiling	unfinished			
Paint	~~N/A~~			
Insulation	N/A			
Piping				
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	Pipes Copper w/ solder			
Mould / Water Staining	NA.			
Other (CO,VOCs,ODSs)	Fridge/freezer and 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:

Bottom ob chimney ASH - GULL-ASH-1

Wining ob - GULL-AS-2

Brick Mortar - GULL-AS-1

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Dwelling	Kitchen + hall (right)			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Grey particle board			GULL-AS-3
Walls	Glossy white painted gyproc			GULL-PS-4 (wall) ~~GULL-AS-4~~ GULL-AS-5
Ceiling	White painted gyproc. tile style particl board on bottom (beige mastic)			GULL-PS-3 (ceiling) GULL-MD-1
Paint				
Insulation	Copper under sink.			
Piping				
Lighting ~~(fluorescent,~~ ~~incandescent,~~ **HG, vapour)**	2 & 1		Serial #s (10% to be checked): Advance RM-2535-TP NO PCB	
Thermostats (eg. Honeywell, etc.)	~~NO~~ yes honeywell		Total: ~~HG containing:~~ Non-HG:	
Lead Containing Materials	possible solder.			
Mould / Water Staining	yes.			
Other (CO,VOCs,ODSs)	Fridge (2) / 2 smoke alarms in hall			
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: GULL - AS-6 - Blue countertop.

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Dwelling	Porch (Right)			2.5mH

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Grey particle board.			
Walls	Blue on green on gyproc			GULL-PS-2 GULL-AS-4 (drywall)
Ceiling	White painted gyproc.			
Paint				
Insulation	Pink FG w/ tard backing			
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)	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)
Dwelling	Living Room (Right)			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls	white painted gyproc			
Ceiling	white painted gyproc.			GLLL-PS-5
Paint				
Insulation	Pink W/ tarbacking & beige paper.			GLLL-AS-7
Piping	NA.			
Lighting (fluorescent, ~~incandescent~~, HG, vapour)	1		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	yes Honeywell.		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); 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)
Quellon	Room 1 Right			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls	yellow on rose of gyproc white trim (white on beige on rose)			GULL-PS-6 GULL-PS-7
Ceiling	white on gyproc			
Paint				
Insulation				
Piping	N/A.			
Lighting (fluorescent, incandescent, HG, vapour)	(		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	N/A.		Total: HG containing: Non-HG:	
Lead Containing Materials	N/A.			
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)
Dwelling	Bathroom (Right)			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls	Same as living room.			
Ceiling	White painted gyproc			
Paint				
Insulation				
Piping	NA.			
Lighting (fluorescent, incandescent, HG, vapour)	2		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	NA.		Total: HG containing: Non-HG:	
Lead Containing Materials	NO.			
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)
	ROOM 3 (Right)			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls	canary yellow on gyproc. trim grey on white. GULL-PS-9			GULL-PS-8 GULL-AS-8 (gypsum)
Ceiling	white painted GYPROC			
Paint				
Insulation				
Piping	NIL			
Lighting (fluorescent, incandescent, HG, vapour)			Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	NIL		Total: HG containing: Non-HG:	
Lead Containing Materials	NIL			
Mould / Water Staining	yes 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:

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Duclos	ROOM 2 (RIGHT)			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls	Painted on drywall or gyproc			GULL-PS-10 GULL-PS-DUP-2
Ceiling	White on gyproc very moldy.			
Paint				
Insulation				
Piping	NO			
Lighting (fluorescent, incandescent, HG, vapour)			Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	NO		Total: HG containing: Non-HG:	
Lead Containing Materials	NO			
Mould / Water Staining	yes			
Other (CO,VOCs,ODSs)	Fire Ext. ABC.			
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)
Dwelling	Room 2 (Left)			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls	Robin egg blue on gyproc.			GULL-PS-11
Ceiling	White on gyproc.			GULL-PS-12
Paint				
Insulation				
Piping	N/A.			
Lighting (fluorescent, incandescent, HG, vapour)			Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	N/A.		Total: HG containing: Non-HG:	
Lead Containing Materials				
Mould / Water Staining	yes			
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:

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
	Room 3 (Left)			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls	same as room 1 on right Beige glossy on gyproc			
Ceiling				
Paint				
Insulation				
Piping				
Lighting (fluorescent, ~~incandescent, HG, vapour~~)	\		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	NO.		Total: HG containing: Non-HG:	
Lead Containing Materials				
Mould / Water Staining	[illegible]			
Other (CO,VOCs,ODSs)	ND.			
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)
Dwelling	Room 1 (left)			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls	pink on yellow on gyproc			GLLL-PS-13
Ceiling	white on gyproc.			
Paint				
Insulation	Pink w/ Blackter + beige paper.			GLLL-AS-9
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	Up			
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)
Delta	Living Room Left			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls	Light blue on dark green on gypsum			GULL-PS-14
Ceiling	White on gypsum			GULL-AS-DUP-1 GULL-AS-10 (drywall)
Paint				
Insulation				
Piping	N			
Lighting (fluorescent, ~~incandescent~~, HG, vapour)	1		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	N/A		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)
	Kitchen (+ hall Left)			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls	green Particle board (bottom) (tile style) white painted Gyproc			
Ceiling				
Paint				
Insulation				
Piping				
Lighting (fluorescent, ~~incandescent~~, HG, vapour)	2		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	NO.		Total: HG containing: Non-HG:	
Lead Containing Materials	copper under sink g yl.			
Mould / Water Staining				
Other (CO,VOCs,ODSs)	ND.			
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:

GULL-AS-11- 7 ~~00~~ countertop (green)

All same as Right.

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
	Patch (Left)			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls				
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); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

same as SP(main)

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
	Bathroom left.			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor				
Walls	White painted gyproc. green part. board.			BLL-PS-15
Ceiling				
Paint				
Insulation				
Piping				
Lighting (fluorescent, ~~incandescent~~, HG, vapour)	1		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	N/A		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)
	Basement (Left)			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Grey on grey on concrete.			GULL-PS-17
Walls	grey (same as floor) on concrete/gyproc			
Ceiling	unfinished			
Paint				
Insulation	NA			
Piping	Copper/tin			
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	Pipe.			
Mould / Water Staining	NO.			
Other (CO,VOCs,ODSs)	2 fire extinguishers (BC)			
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: Beige on all on green. - hallway going upstairs PS-16
GULL-AS-12 - Brick mortar
GULL-AS-12 .

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
	Main area Building Equiptment ~~B2~~ ~~[illegible]~~			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Multiple layers 86 grey.			GULL-PS-23
Walls	Multiple layers 06 Grey on grey transite board			GULL-PS-24 GULL-AS-16 GULL-AS-DUP-2
Ceiling	painted grey (mult. layers) 06 transite.			
Paint				
Insulation	Pink FG w Brown Paper tar back.			
Piping	NA.			
Lighting (fluorescent, incandescent, HG, vapour)	4 Ballasts.		Serial #s (10% to be checked): CGE general elec goldcade. # 17A240E	
Thermostats (eg. Honeywell, etc.)	NA		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:

exterior siding grey shank concrete w/tar Paper back GULL-AS-17.

red black shingles GULL-AS-18

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Lighthouse	Cell 1			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Steps: grey on red on green on ~~red~~ wood. ~~Bottom~~			steps
Walls	wood on metal. painted. grey on red			
Ceiling				
Paint				
Insulation	NA.			
Piping	NA.			
Lighting (fluorescent, incandescent, HG, vapour)			Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	NA.		Total: HG containing: Non-HG:	
Lead Containing Materials				
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:

Exterior: GULL-PS-26 - red on red on meter
GULL-PS-27 - white on ~~white~~ on metal

Upper catwalk: white on Brass metal GULL-PS-28.
multiple grey on red on catwalk. GULL-PS-29
~~white~~ caulking on windows GULL-AS-19

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
←	Battery Shed. Inside Equipment (Battery)			

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Grey painted plywood			GULL-PS-31
Walls	White painted plywood			GULL-PS-30 Door dark grey GULL-PS-32
Ceiling	white painted plywood			
Paint				
Insulation	N/A.			
Piping	NO			
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	NA.			
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); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

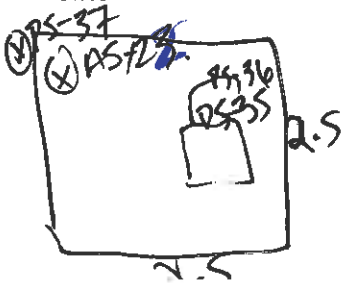
exteri. tar paper & two layers of shingles
GULL-AS-20
caulking around pipe at soffit
GULL-AS-21

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Winch House				2.5 x 2.5 x 2.5

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Unpainted wood / Concrete.			
Walls	Unfinished.			
Ceiling	11			
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	NA			
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); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:



GULL- AS-23 shingle red/black
GULL- PS-35 - red on winch
GULL- PS-36 - grey on winch
GULL- PS-37 - white on wood siding

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Storage Shed	~~Sto~~			

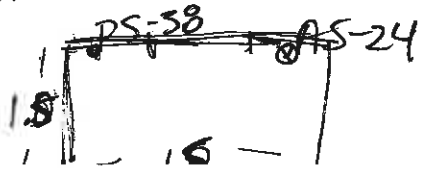
	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	unfinished wood			
Walls	unfinished wood			
Ceiling	unfinished wood.			
Paint				
Insulation	NA			
Piping	NA			
Lighting (fluorescent, incandescent, HG, vapour)	NA		Serial #s (10% to be checked):	
Thermostats (eg. Honeywell, etc.)	NA		Total: HG containing: Non-HG:	
Lead Containing Materials	NA.			
Mould / Water Staining	NA			
Other (CO,VOCs,ODSs)	NA.			
Photos	Steele piping + 5 Gal drum Water.			

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: GULL-AS-24 - Black striped tan. *GULL-AS-DUP-3
GULL-PS-38 Orange/red on trim.

ext siding white painted wood



MD-3
PS-51
AS-39

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Boathouse				

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	unpainted concrete			
Walls	unfinished			
Ceiling	unfinished			
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	NA			
Mould / Water Staining				
Other (CO,VOCs,ODSs)	orange on winch - GULL-PS-51			
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:

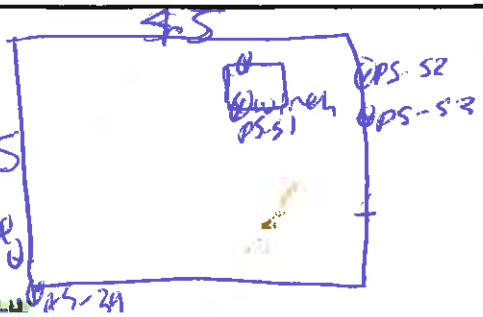
exterior

GULL-PS-52 - white on wood siding.

GULL-PS-53 - orange on white on wood trim.

GULL-AS-40 - Black felt

GULL-AS-39 Black/red shingles



Stor. PS-44
AS-32

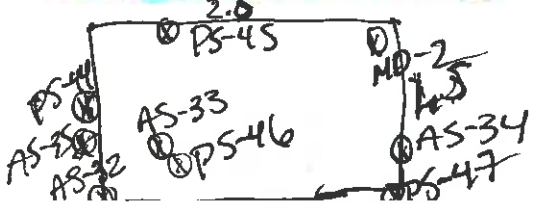
Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Storage Shed 2/ Dry House				1.5 m H

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Grey painted particle board with masking. Grey on green on wood floor. 1/4 OB board.			GULL-AS-33 GULL-PS-46
Walls	Blue on yellow on gypsum some exposed wall gypsum no plaster			~~GULL~~ GULL-PS-45 GULL-MD-2
Ceiling	was gypsum. all fallen onto floor from wind/water damage.			
Paint				
Insulation	NA used cardboard			
Piping				
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); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

Ext GULL-AS-32-Black shingle
GULL-PS-44-white on wood siding ~~GULL-PS-DUPS~~
GULL-PS-47-red on white trim
GULL AS-34-~~brown~~ felt paper
GULL AS-35 Black tarry caulking



MD-3 PS-

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Videograph	~~[illegible]~~ Not on main site area			

PS-40
PS-37
AS-36

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Grey on wood (plywood)	G		GULL-PS-48
Walls	White on plywood	G		GULL-PS-49
Ceiling	White on plywood	G		
Paint				
Insulation				
Piping				
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	NA			
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); Transmission Electron microscopy; CO (Carbon Monoxide); VOCs (Volatile Organic Compounds); ODSs (Ozone Depleting Substances); ND (non-detect)

Notes/Comments:

GULL-AS-36 → white caulking around electricity cords
GULL-AS-37 → grey caulking on outside of videograph window
GULL-AS-38 → red/black shingl
GULL-AS-50 → white on wood siding

Lower Equipment Area

Building	Room No. / Description	Floor No.	Room Description	Dimensions (L x W x H)
Lower Equipment Building				

	Description	Condition (good, fair, poor)	Quantity (SF, LF, total)	Visual/Actual Sample Collected
Floor	Grey on red on Concrete.			GULL-PS-40
Walls	Blue on white on gyproc on plywood.			GULL-PS-39 GULL-AS-25 (drywall)
Ceiling	White on gyproc.			GULL-PS-41 GULL-PS-DUP4
Paint				
Insulation	Pink FG w/ black backing			GULL-AS-31
Piping	N/A.			
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	@ some. not a lot			
Other (CO,VOCs,ODSs)	AST. ~~Grey~~ Metallic silver over red GULL-PS-42			
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:

GULL-PS-38 white wood siding

GULL-ASH-3 Chimney Ash.

GULL-AS-26 → Brick Mortar.
GULL-AS-27 → Black FeH pape: (ext)
GULL-AS-28 → Black/red shingle (ext)
GULL-AS-29 → insul. ext. (pink w/ Bleck backing)
GULL-AS-30 → ~~Grey~~ Beige window caulking

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.

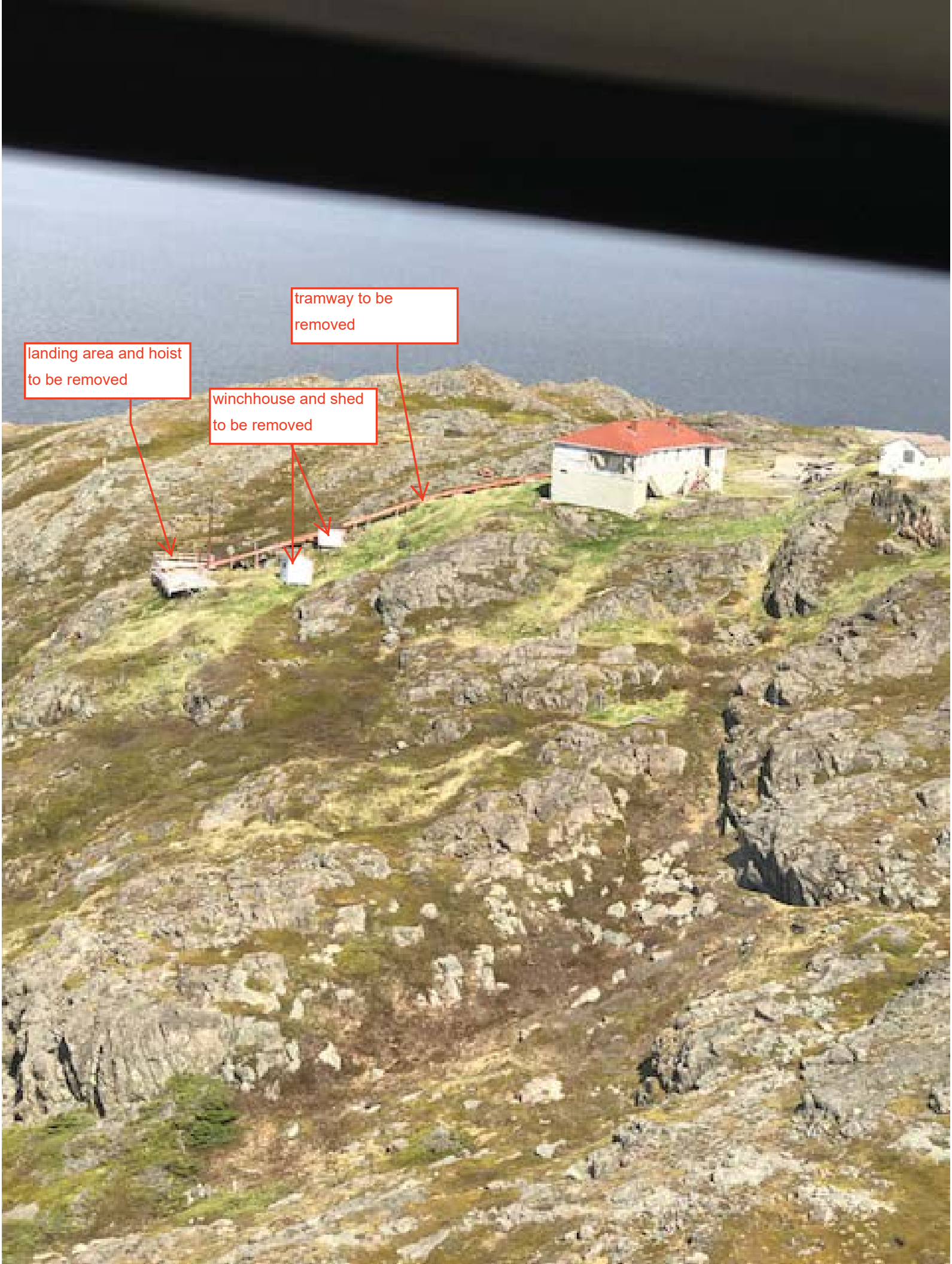
8. The utilization of AMEC's services during the implementation of any remedial measures will allow AMEC to observe compliance with the conclusions and recommendations contained in the report. AMEC's involvement will also allow for changes to be made as necessary to suit field conditions as they are 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.

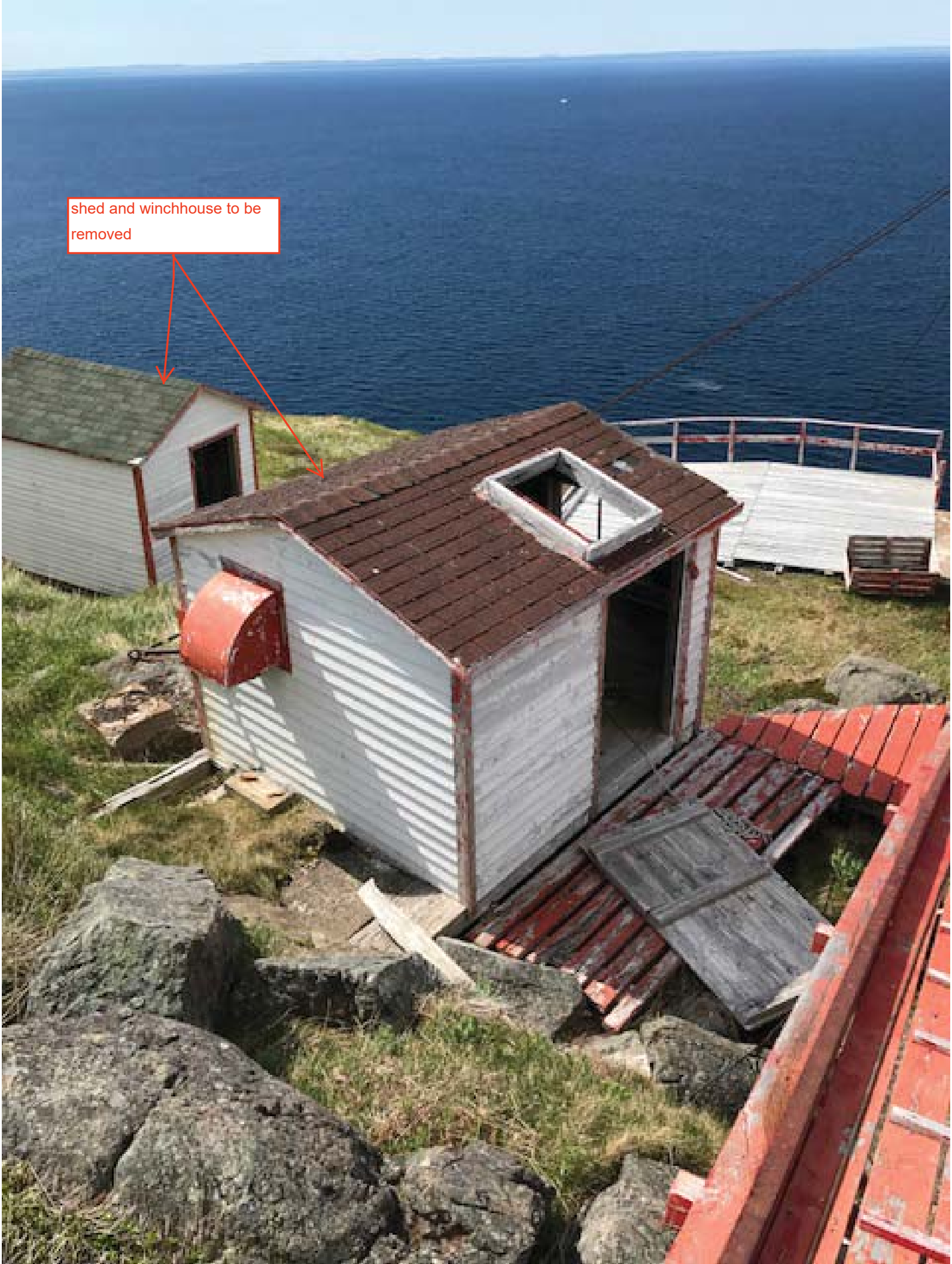
Appendix B: Picture File


main equipment building to be removed
double dwelling to be removed
landing platform and shed/winchhouse to be removed


tramway to be removed
landing area and hoist to be removed
winchhouse and shed to be removed


double dwelling


tramway to be removed


shed and winchhouse to be removed

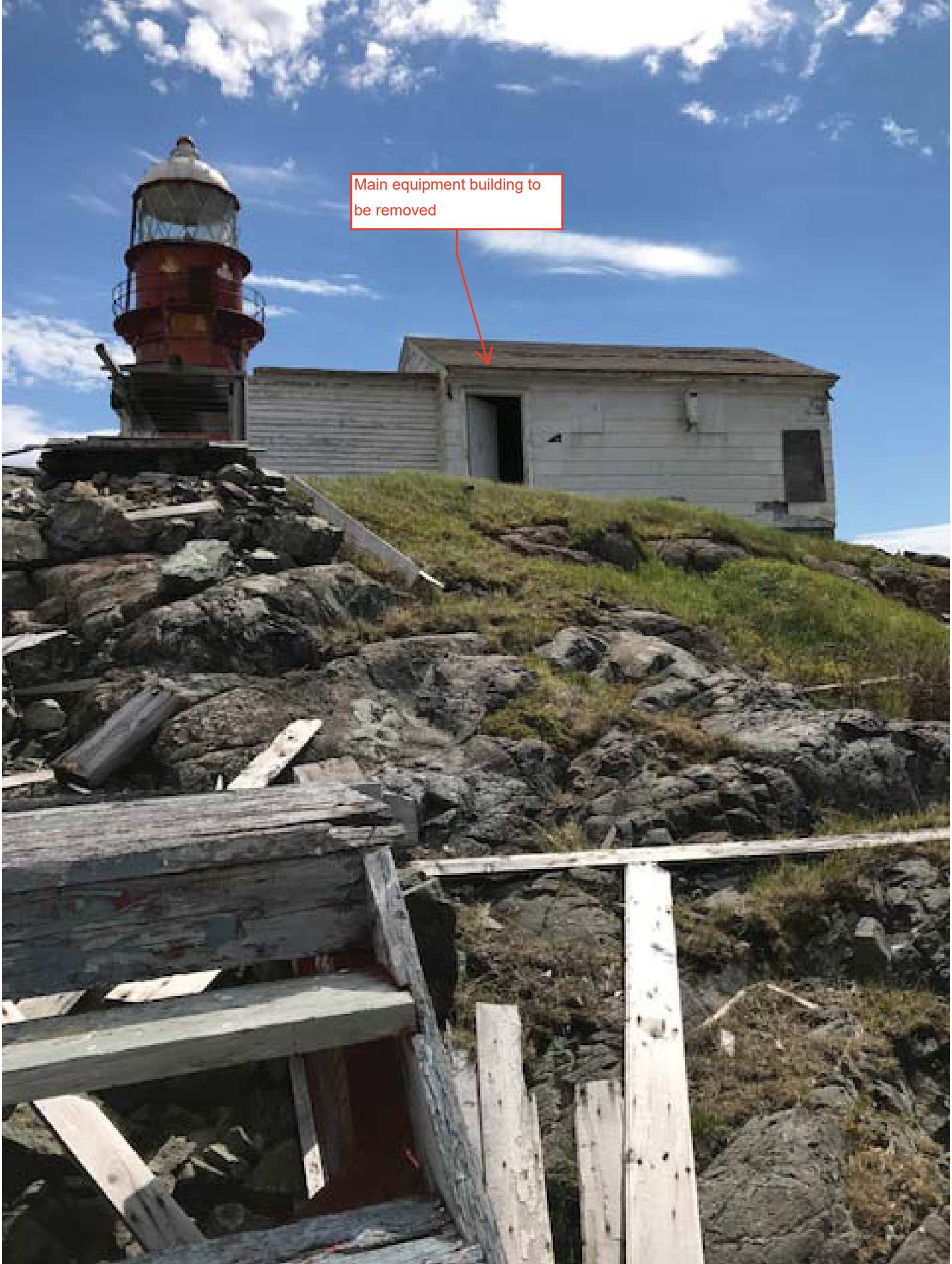

interior of winch house

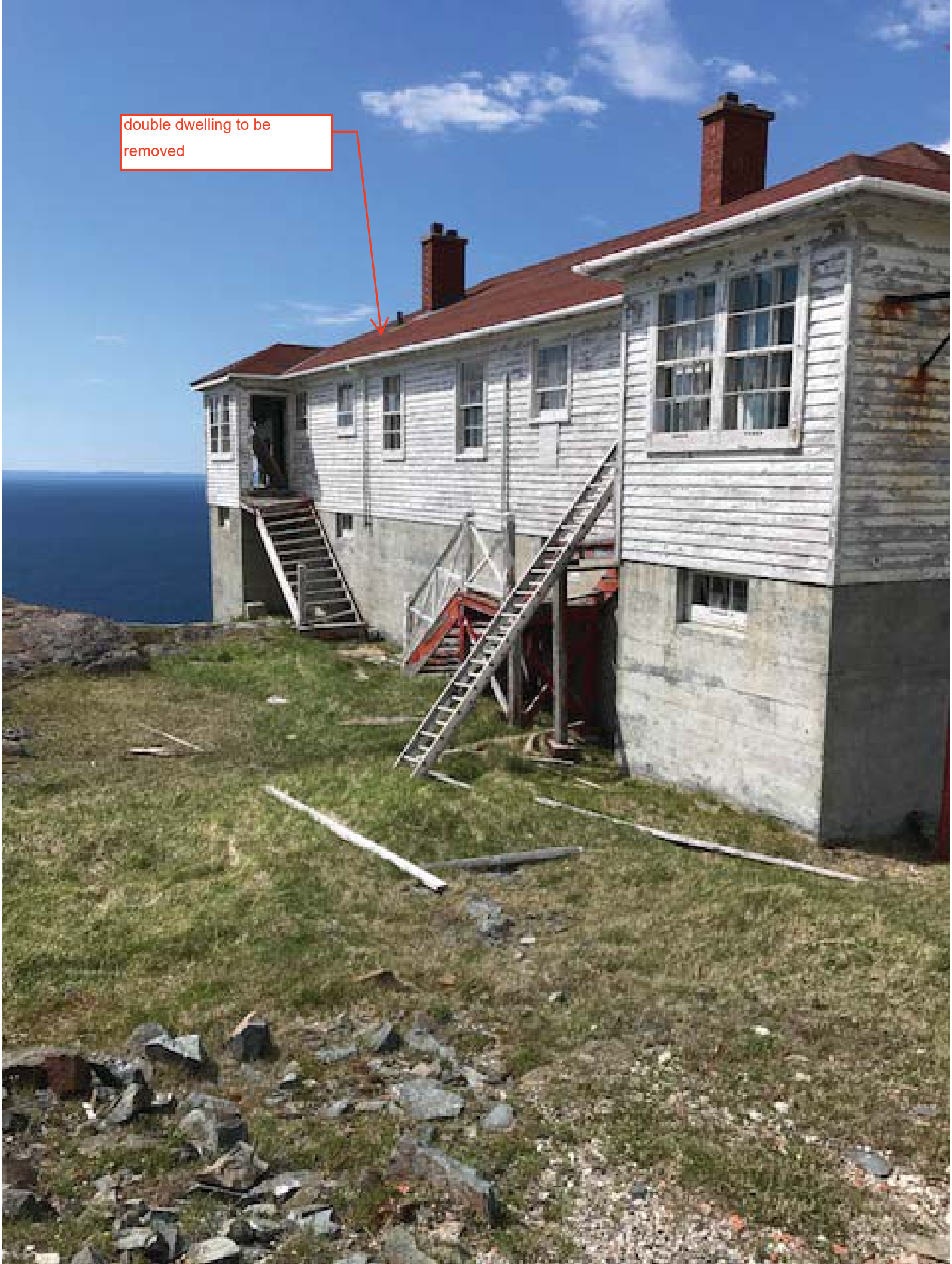

landing area, hoist and tramway

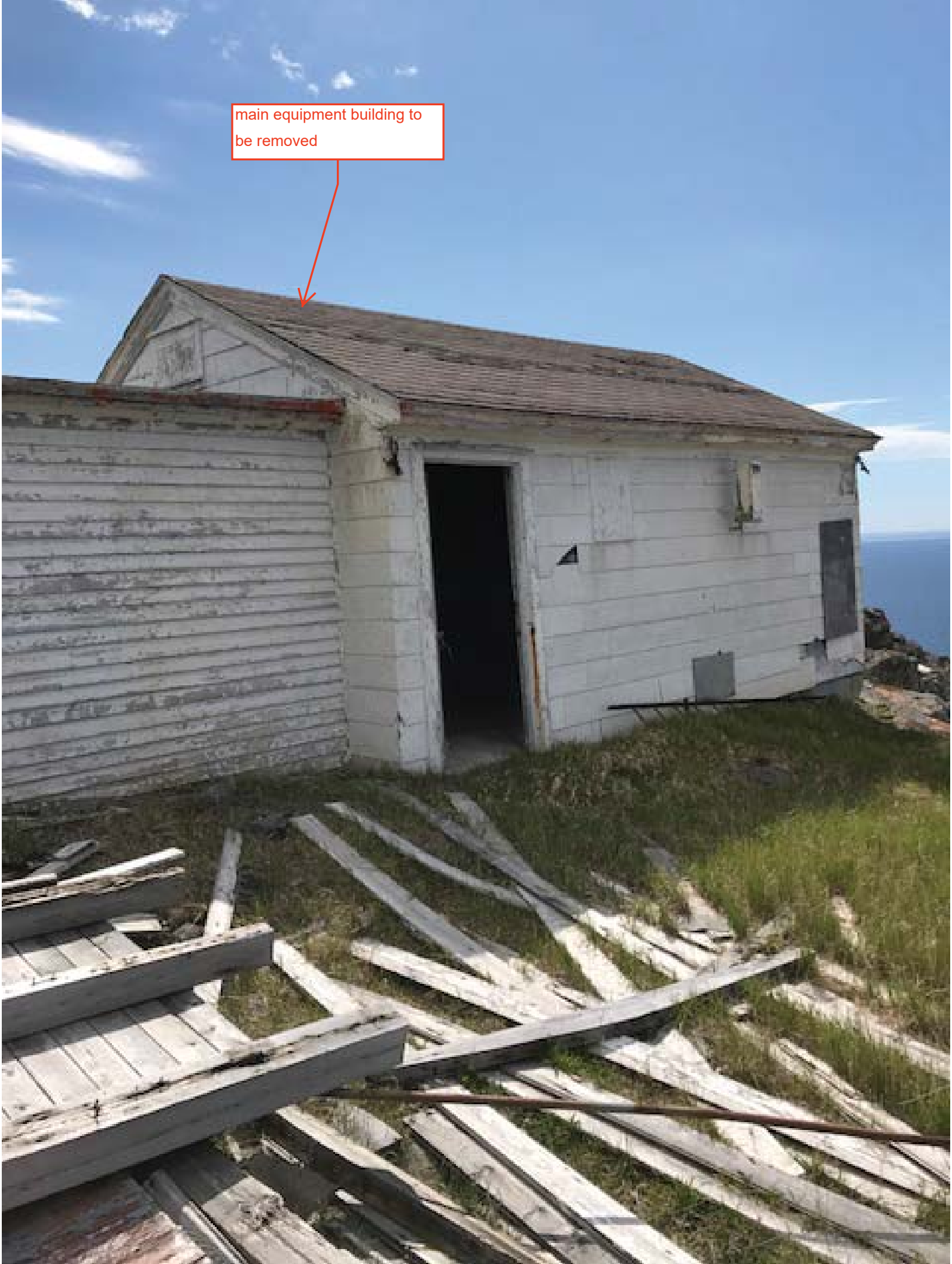

landing area, hoist and tramway


All debris within ruins to be removed


All debris in ruins to be removed


Main equipment building to be removed


double dwelling to be
removed


main equipment building to be removed


enclosed walkway to be removed


debris within concrete
foundation to be removed


debris within concrete
foundation to be removed


interior of double dwelling


interior of double dwelling


interior of double dwelling


interior of double dwelling


interior of double dwelling


interior of double dwelling


interior of double dwelling


interior of double dwelling


interior of double dwelling


interior of double dwelling


interior of double dwelling


interior of double dwelling


interior of double dwelling


interior of double dwelling


interior of double dwelling

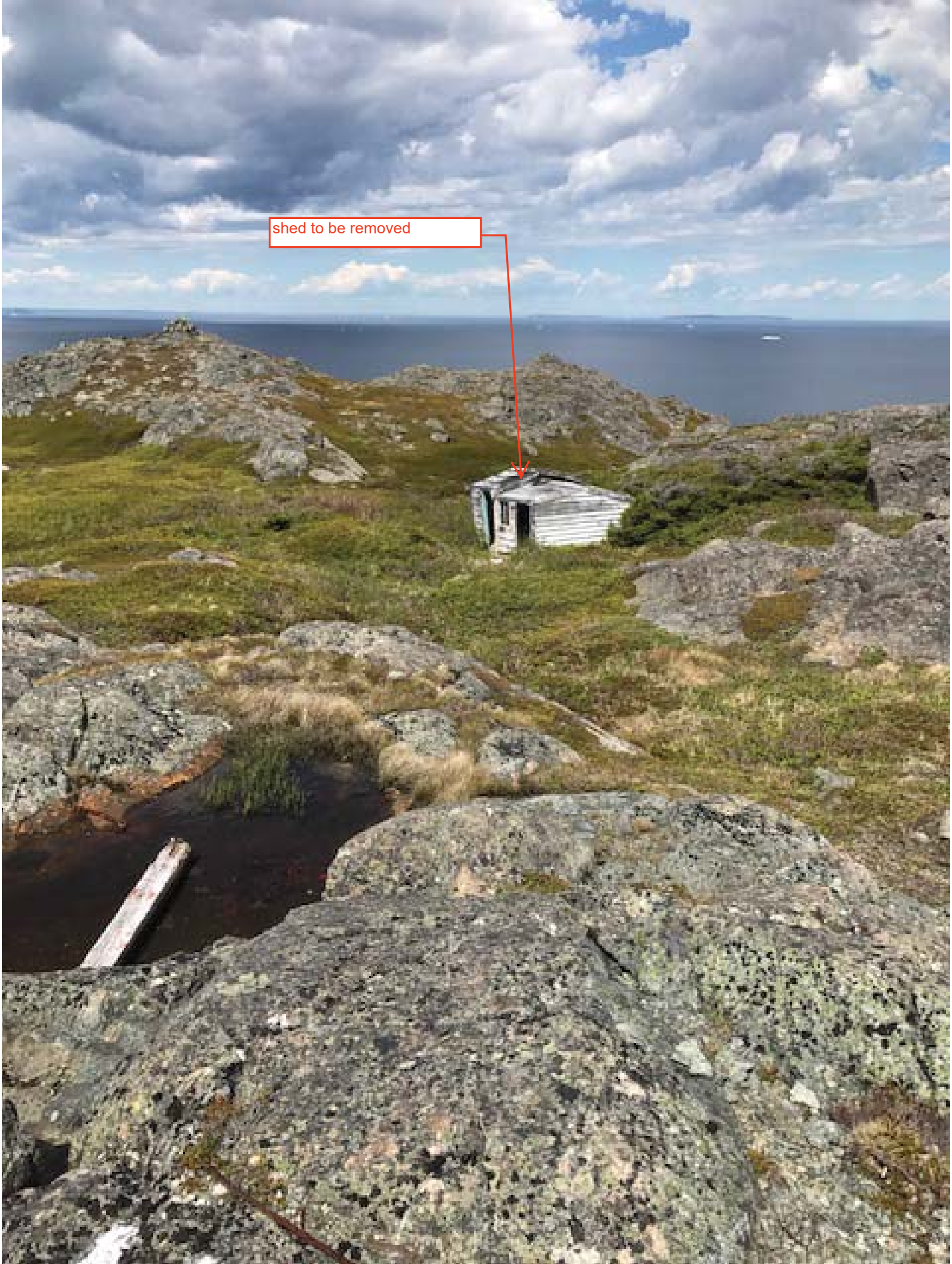

interior of double dwelling


interior of double dwelling


interior of double dwelling

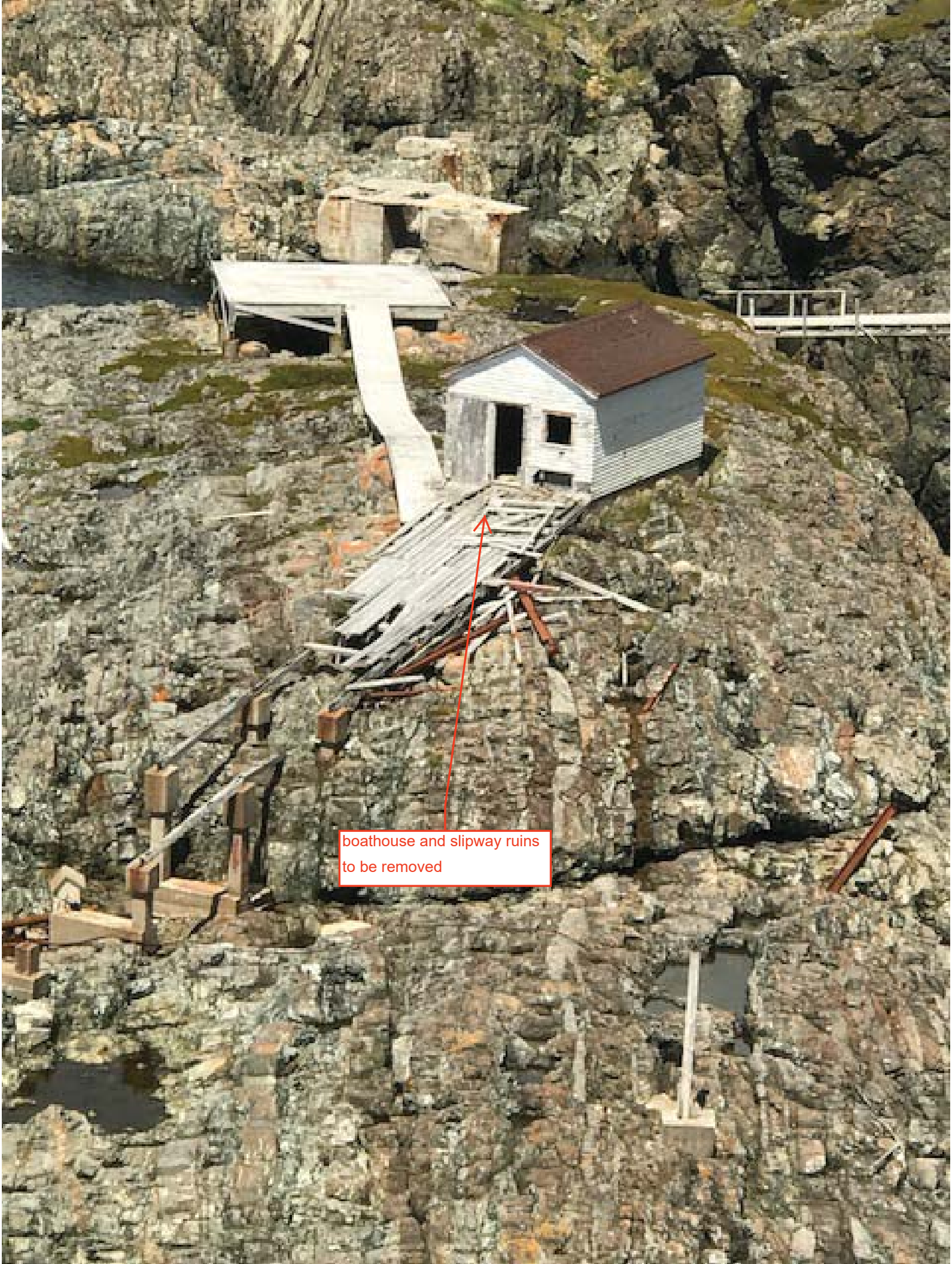

interior of double dwelling

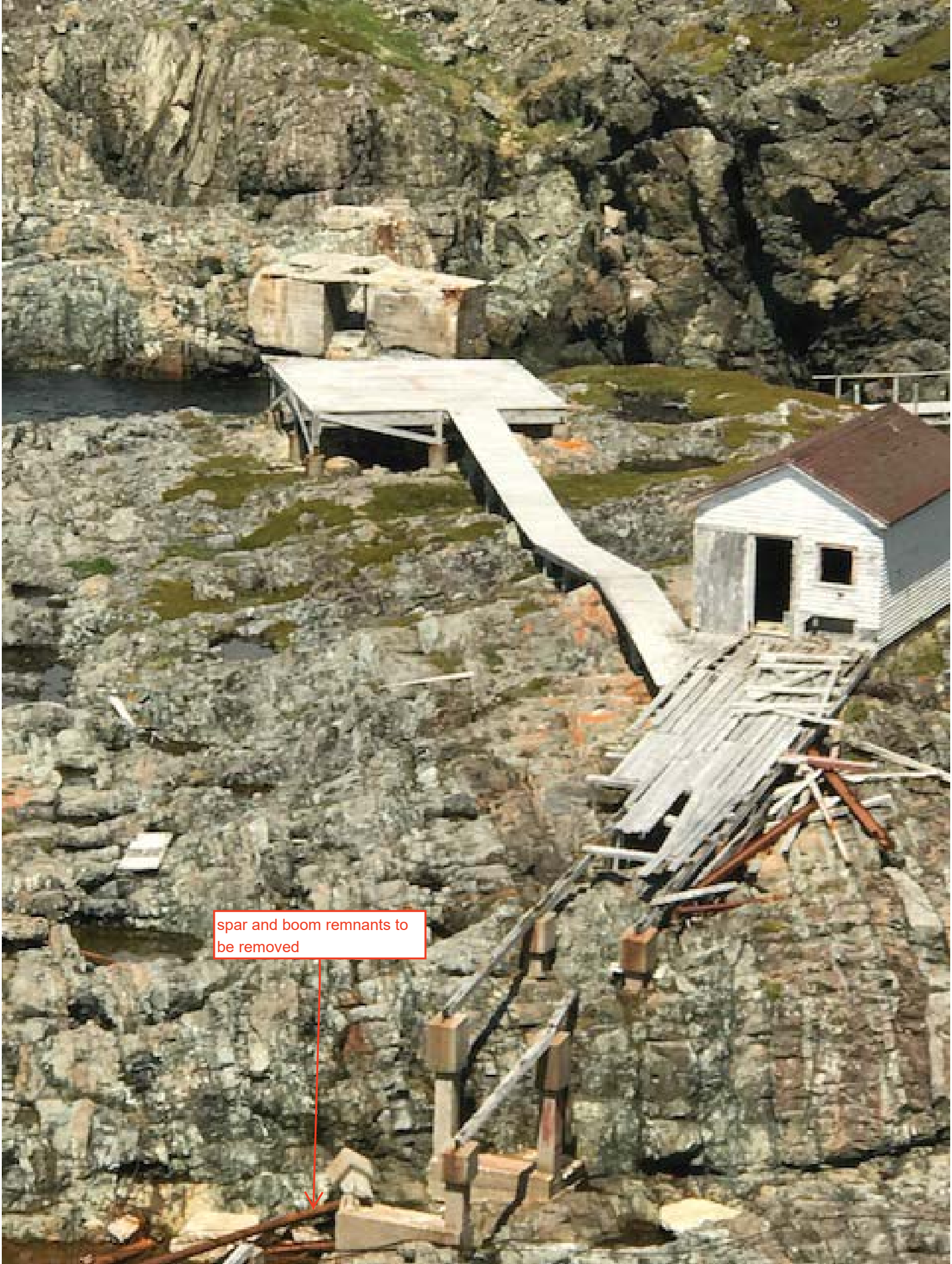

interior of double dwelling


shed to be removed


shed to be removed


lower equipment building and
tank to be removed


boathouse and slipway ruins
to be removed


spar and boom remnants to be removed


spar and boom remnants to be removed