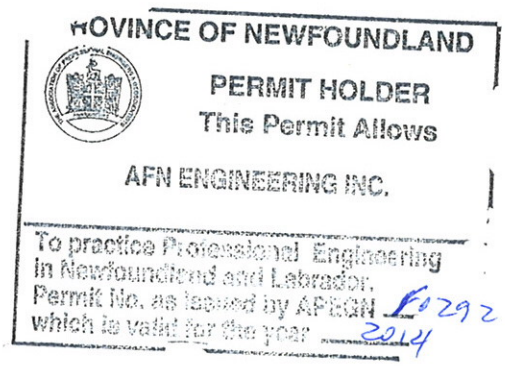
SPECIFICATION

REMOVAL OF VARIOUS SURPLUS INFRASTRUCTURE AT PENGUIN ISLAND (HARBOUR ISLAND) LIGHTSTATION SITE

HARBOUR ISLAND ("PENGUIN ISLAND"), NL

PROJECT NUMBER: F6879-141039



PREPARED FOR

Fisheries and Oceans Canada

DATE

October 5, 2014
Revision 2

DRAWING NO	TITLE
11P0701A00801C1	Site Plan
11P0701A00801C2	Floor Plans - Dwelling
11P0701A00801C3	North and West Elevations - Dwelling
11P0701A00801C4	East and South Elevations - Dwelling
11P0701A00801C5	Shed/Slipway and Winch House Plans and Elevations
11P0701A00801C6	Equipment Building

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 Harbour Island (“Penguin Island”) Lightstation site, NL, in strict accordance with specifications and accompanying drawings and subject to all terms and conditions of the Contract. The Site is located between the communities of Francois and Burgeo and lies approximately 15km off the coastline (accessible by boat or helicopter only). Coordinates for the site are: Latitude (47 22 53.5); Longitude (-56 59 17).

.2 DFO will schedule a site visit during the tender period. The site visit will occur over a one day period with helicopter flights leaving from the Burgeo area to the Site (flight will return to Burgeo – Contractor responsible for all costs associated with getting from home base to Burgeo). Departmental Representative will pay for helicopter services associated with the one day site visit held during the tender period. Contractors wishing to visit site shall contact the Departmental Representative to obtain flight times/schedule. Note the following:

- If weather doesn’t permit flying on the scheduled site visit day, it will occur on the following day.
- A maximum of 2 persons per Contractor will be permitted.
- Time allocated on site will be a maximum of 2 hours.
- 2 days advance notice is to be given to the Departmental Representative with respect to the company and individuals attending the visit.
- The Site visit will occur within 8 calendars days after posting of the

project.

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 Dwelling. Note that the concrete foundation, including above grade concrete foundation walls associated with the Dwelling can remain. Contractor to be prepared to core 50mm diameter core holes in the floors to prevent future water ponding in the foundation that is to remain. For Bidding, assume that 10 core holes (50mm diameter) are to be advanced through 200mm thick reinforced concrete. The Departmental Representative will provide direction related to the core holes (including specific locations), while in the field. Note that the basement of the Dwelling is flooded with approximately 900mm of water and this will have to be pumped out by the Contractor prior to demolition activities (so that the debris and materials in the basement can be removed).

.2 Demolition, removal and disposal of the Equipment Building. Note that the concrete floor slab and any below grade concrete foundation walls associated with this building can remain.

.3 Demolition, removal and disposal of the winch house and shed/slipway in the area northwest of the helicopter landing site. Note that the slipway and support timbers for the shed at the slipway site contains creosote timber that is to be

transported and disposed of as hazardous waste).

.4 For all concrete foundations to remain, remove flaking/peeling paint using manual scraping techniques and dispose of paint chips as hazardous lead waste. This includes exterior foundation walls, interior floor slabs and basement slabs.

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 Harbour Island ("Penguin Island"), NL. The Site is a remote site, only accessible by boat or helicopter.

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 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 REQUIREMENTS

.1 Comply with the Occupational Health and Safety Act for the Province of Newfoundland and Labrador, and the

Occupational Health and Safety Regulations made pursuant to the Act.

.2 Comply with Canada Labour Code Part II, (entitled Occupational Health and Safety) and the Canada Occupational Health and Safety Regulations (COSH) as well as any other regulations made pursuant to the Act.

.1 The Canada Labour Code can be viewed at: www.http://laws.justice.gc.ca/en/L-2/

.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 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 Dwelling. Coordinate exact location with the Departmental Representative. No burning will be permitted in the area of the equipment building or the winchouse/shed/slipway site.

.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.

1.1 SECTION INCLUDES

.1 Project Record Documents as follows:
- .1 Inventory of materials that were burned on site.
- .2 Inventory of exterior building materials removed for off-site disposal.

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 Equipment building and associated materials present inside the building. Note that the concrete foundation and/or slab on grade, associated with the equipment building can remain (the loose/flaking paint on the concrete surface is to be manually scraped, drummed and removed from Site as hazardous lead waste).

.2 Demolition, removal and disposal of the Dwelling. Note that the concrete foundation, including above grade concrete foundation walls associated with the Dwelling can remain (the loose/flaking paint on the concrete surface is to be manually scraped, drummed and removed from Site as hazardous lead waste). All materials present on the interior of the Dwelling are to be removed/disposed – refer to pictures in appended environmental report showing typical materials inside the Dwelling. Note that interior partition walls contain lead paint (loose/flaking paint is to be removed and disposed of as hazardous waste prior to demolition activities).

.3 Demolition, removal and disposal of the winch house/shed and shed/slipway (including interior materials). Note that any concrete foundations associated with these structures can

remain (any flaking/peeling paint on the concrete foundations is to be manually scraped and disposed of as hazardous lead waste to an approved facility). Note that creosote timber is present in the foundation of the shed and in the slipway itself.

Refer to Section 15 49 10 for specific requirements related to demolition, removal and disposal of hazardous building materials.

1.2 MEASUREMENT FOR PAYMENT

.1 This portion of the work will not be measured for payment but will be included in the Lump Sum Amount of the contract.

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 The following hazardous materials are present in or on the infrastructure requiring removal/disposal:

.1 Dwelling

- Potential asbestos materials exist in the joint compound on gypsum board wall joins, mastic material on roof vents, underlay material under shingles, vinyl flooring, window caulking, hardboard paneling, electrical and mechanical components and insulators (such as wiring and gaskets inside electrical panels, electronic and/or mechanical equipment, interior components of the chimney and furnace). All potential asbestos material, if encountered, is to be treated as asbestos containing.
- Lead paint exceeding landfill disposal guidelines is present in the exterior wood siding. The exterior

siding (which includes the paint and substrate) is to be considered hazardous waste and must be disposed of at a hazardous waste treatment facility.

- Lead paint exceeding landfill disposal guidelines is present on the interior/exterior concrete foundation walls and the interior concrete basement floor slab. Loose/flaking/peeling paint is to be removed from the concrete foundation walls using manual scraping techniques, and disposed off-site as hazardous lead waste.
- Lead paint exceeding landfill disposal guidelines is present on the interior partition walls. Loose/flaking/peeling paint is to be removed from the walls using manual scraping techniques, and disposed off-site as hazardous lead waste. Any paint debris lying on the floors (where the walls have collapsed), is to be shoveled into drums and disposed of as hazardous waste. The partition walls themselves can be considered non-hazardous once the paint is removed.
- Mould is present in the building and in this regard, workers should don proper PPE to prevent/reduce exposure to mould while working within the dwelling.
- Ash inside the brick chimney (if encountered) in the dwelling basement is to be assumed as containing metals exceeding landfill disposal guidelines and is to be disposed of as hazardous waste. Ash generated by burning activities on site is to assumed as containing metals exceeding landfill disposal

guidelines and is to be disposed of as hazardous waste.

- Bird and/or animal droppings/feces is present in several areas throughout the interior of the dwelling. Workers should don proper PPE to prevent/reduce exposure to potential microbiological contaminants.
- Fluorescent light fixtures are present in the Dwelling. The ballasts associated with these light fixture are to be assumed as containing PCBs and is to be removed and disposed of as hazardous waste, in accordance with Provincial guidelines.

.2 Equipment Building

- Mould may be present in the building and in this regard, workers should don proper PPE to prevent/reduce exposure to mould while working within the building.
- Bird and/or animal droppings/feces may be present in several areas throughout the interior of the buildings. Workers should don proper PPE to prevent/reduce exposure to potential microbiological contaminants.

.3 Winch house/shed and shed/slipway

- Mould may be present in the buildings and in this regard, workers should don proper PPE to prevent/reduce exposure to mould while working within the buildings.
- Bird and/or animal droppings/feces may be present in several areas throughout the interior of the

buildings. Workers should don proper PPE to prevent/reduce exposure to potential microbiological contaminants.

- Creosote timbers are present in the support foundation for the shed and in the slipway itself. The creosote timbers are to be considered hazardous for the purposes of transportation and disposal.

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.

1.7 MEASUREMENT FOR PAYMENT .1 This portion of the work will not be measured for payment but will be included in the Lump Sum Amount of the contract.

Appendix A: Hazardous Buildings Material Survey

Hazardous Building Material Assessment

Harbour Island ("Penguin Island") Light Station, NL

Submitted to:

Fisheries and Oceans Canada
P.O. Box 5667
St. John's, NL

Submitted by:

AFN Engineering Inc.
1243 Kenmount Road
St. John's, NL

September 2014

Executive Summary

AFN Engineering Inc. (AFN) was retained by Fisheries and Oceans Canada (DFO), to conduct a Hazardous Building Material assessment of four (4) structures located at DFO's Light Station facility on Harbour Island ("Penguin Island"), NL. The structures are identified as: (i) the equipment building; (ii) the dwelling; (iii) the winch house/shed; and (iv) the shed/slipway.

The Harbour Island ("Penguin Island") facility was abandoned in 2003 when the coast guard destaffed many isolated island stations across the Province. Due to the condition and isolated location of the site (i.e. approximately 15 km off the coast), divestiture of the surplus infrastructure has been unsuccessful. In this regard, DFO have committed to demolishing the surplus infrastructure to remove the current liability associated with leaving it in a dilapidated state. The purpose of the assessment was to identify the presence of hazardous building materials in these four (4) structures, to ensure the materials are properly handled and disposed during structure demolition.

A summary of the findings is included below:

- Asbestos containing materials (ACMs) were not confirmed during the sampling program. All four (4) samples submitted for analysis returned concentrations of asbestos less than 1% by weight. Due to the age of the site however, there is potential for ACMs to exist in the building infrastructure. In the absence of further sampling, ACMs should be assumed to be present in: (i) the underlay roofing compound and mastic material around the vent pipes/chimney stack on the roof of the Dwelling; (ii) any vinyl flooring or floor tiles that may be encountered in the Dwelling; (iii) electrical and mechanical components and insulators such as wiring and gaskets inside electrical panels, electronic and/or mechanical equipment. Materials suspected of containing ACMs will have to be removed by a qualified asbestos abatement contractor, prior to building demolition.

- ACMs were not identified in the gypsum board joint compound sample collected from the Equipment Building. Since the presence of asbestos in joint compound can be variable, demolition Contractors should be made aware of this potential hazard. During future demolition, subsequent analysis of suspect areas where ACMs in joint compound may exist, should be completed using a <0.25 point count after "ashing" the sample (this process is more effective in ensuring materials such as gypsum crystals do not get counted as asbestos fibres).

- Water damage and visible evidence of mould stained surfaces were noted throughout the Dwelling and Equipment Building. Mould should be assumed to be present in all

four (4) structures (on walls, furniture, flooring, ceilings) and workers should don proper PPE during future demolition activities.

- Fluorescent light fixtures were observed in the Equipment Building and Dwelling. An inspection of the ballasts was not carried out during the investigation, and in this regard all fluorescent light ballasts should be treated as "potential PCBs". A total of six (6) potential PCB containing light ballasts should be assumed to be present in the four (4) Site structures. All potential PCB containing light ballasts should be transported and disposed of by a registered hazardous waste transporter in accordance with applicable regulations.

- All equipment containing potential ozone depleting substances (ODSs) should be removed by an approved contractor prior to disposal (in accordance with the most recent NL Halocarbon Regulations and the Federal Halocarbon Regulations). The basement of the Dwelling was not accessible (due to 900mm of water covering the floor), however typical freezer units are expected to be present in the basement. In addition, several fire extinguishers are expected to be present in the four (4) Site structures.

- Silica is expected to be present in concrete structures, brick and mortar at the Site. Precautions should be taken to prevent/reduce exposure to silica dust during any disturbance/demolition of silica-containing products. It is noted that the concrete foundations are anticipated to remain as part of DFO's current plans for demolition at this Site. The Dwelling chimney is planned to be demolished, and remain on site.

- Ash is expected to be present inside the brick chimney in the Dwelling basement. Solid wastes such as ash from chimneys or furnaces may contain heavy metals, PAHs and/or fuel oil components. It is understood that the Dwelling chimney will be demolished and left on Site, however small quantities of ash should be drummed-up and disposed as hazardous waste (unless subsequent leachate testing of the ash defines the material as "non-hazardous").

- Lead based paint is present in the four (4) Site structures (on interior surfaces and exterior building materials). Precautions should be taken during any disturbance of painted surfaces to reduce occupational exposure to lead.

- Leachate testing indicates that the painted surfaces associated with the equipment building and winchhouse are "non-leachable" and can be disposed of as "non-hazardous" waste.

- The exterior siding (paint chips and siding itself), of the Dwelling is leachable and should be treated as hazardous waste for the purposes of transportation and disposal (loose/flaking paint associated with the siding should be removed using manual scraping techniques prior to removal of the siding).

- Interior painted surfaces of the dwelling contain lead leachate concentrations greater than the landfill disposal guideline of 5mg/L and in this regard, any loose/flaking paint should be removed from the wall surface, placed in drums, and disposed of as hazardous waste. The gypsum board walls themselves are likely non-leachable for lead and can be disposed of as "non-hazardous waste" once the flaking/peeling paint has been removed.

- Creosote timbers are present in the slipway and beneath the shed on the northwest end of the Site. In the absence of sampling, the timbers should be transported and disposed of as "hazardous" waste.

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Appendices

1.0 Introduction

AFN Engineering Inc. (AFN) was retained by Fisheries and Oceans Canada (DFO), to conduct a Hazardous Building Material assessment of four (4) structures located at DFO's Light Station facility on Harbour Island ("Penguin Island"), NL. The Site visit by AFN was carried out on September 23, 2014.

The structures are identified as:

(i) the equipment building;
(ii) the dwelling;
(iii) the winch house/shed; and
(iv) the shed/slipway.

The purpose of the assessment was to identify the presence of hazardous building materials in these four (4) structures, to ensure the materials are properly handled and disposed during structure demolition.

A site location and sampling plan is included in **Appendix A**. Photographs are included in **Appendix B**. The Laboratory Certificates are included in **Appendix C**.

The Harbour Island ("Penguin Island") facility was abandoned in 2003 when the coast guard destaffed many isolated island stations across the Province. Due to the condition and isolated location of the site (i.e. approximately 15 km off the coast), divestiture of the surplus infrastructure has been unsuccessful. In this regard, DFO have committed to demolishing the surplus infrastructure to remove the current liability associated with leaving it in a dilapidated state.

2.0 Scope of Work

The scope of work for this project consisted of the following:

- Conduct a walk-through inspection of the Site 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 (PCBs)
  - Sources of ozone depleting substances (ODSs)
  - Other potentially hazardous building materials

- Inspect the Site for evidence of areas that are impacted by suspected visible mould growth.

- Sampling and laboratory testing of suspected ACMS to confirm the presence or absence of asbestos fibres.

- Sampling and laboratory testing of paint to determine concentrations of lead and mercury.

- Review of accessible fluorescent lights for PCB containing light ballasts.

- Review of the Site for the presence of potential sources of ODSs and other hazardous materials.

- Prepare a written report documenting the methodologies and findings of the hazardous building material assessment.

3.0 Hazardous Material Assessment

The Regulatory framework and results of the sampling program are outlined in the following sections. Note that all samples were submitted to Maxxam Analytics Inc. (Maxxam) in St. John's, Newfoundland. Maxxam are a Canadian Association for Laboratory Accreditation (CALA) certified laboratory. Maxxam has an in-house Quality Assurance (QA) program that consists of analyzing matrix spike, spiked blank, and method blank samples. The results of the

matrix spike and blank samples are compared to established Quality Control (QC) limits to assess the quality of the results.

3.1 Asbestos Containing Materials (ACMs)

General

ACMs are regulated by the Asbestos Abatement Regulations, 1998 under the Occupational Health and Safety Act (O.C. 98-730) in Newfoundland and Labrador. These regulations provide safe handling procedures for ACMs to minimize exposure to airborne asbestos fibres. Materials containing greater than 1% asbestos by dry weight is considered asbestos material.

Assessment

Suspect asbestos containing materials were identified on this Site. The suspect areas were identified as floor tiles, vinyl flooring, ceiling tiles, taping material on joins in gypsum board, wall insulation, roofing shingles/underlay and mastic material on vent pipes and the chimney stack.

A total of four (4) samples were collected for analysis. All samples were collected by removing approximately 6 cm^2 of materials (where possible) and placing the sampled materials in a ziploc plastic bag. The following was noted with respect to the sampling program:

1. The roof area of the dwelling was not accessible for sampling.
2. The basement of the dwelling was not accessible for sampling, because the floor was flooded with approximately 900mm of water.
3. The dwelling is in extremely poor condition throughout. In addition, a portion of the exterior walls in the dwelling has collapsed so there are safety concerns related to being in the building (particularly the second floor level). In this regard, sampling floor coverings such as vinyl flooring, tiles, etc.), was not completed.
4. The interior walls were collapsed throughout much of the dwelling, so collecting a representative joint compound sample at gypsum board joins was not possible.

The results of the asbestos analysis are summarized in Table 1.

Table 1: Summary of Asbestos Sampling

Structure	Sample ID	Location	Description and Condition	Results*
Equipment Building	A-1	Gypsum board sample (joint compound)	Floor tile (poor condition)	<1% asbestos
Equipment Building	A-2	Roofing shingle	Vinyl flooring (poor condition)	<1% asbestos
Equipment Building	A-3	Exterior siding	Vinyl flooring (poor condition)	<1% asbestos
Shed at slipway site	A-4	Roofing shingle	Floor tile (poor condition)	<1% asbestos

***Shading and bold indicates asbestos containing material (ACM) 1% by volume or greater.**

As noted in Table 1, none of the materials sampled during the investigation contained concentrations of asbestos greater than 1% by weight. However, as noted previously, access to the dwelling was limited due to safety concerns. Due to the age of the site infrastructure, potential asbestos containing materials still exist in the form of: (i) the underlay roofing compound and mastic material around the vent pipes/chimney stack on the roof of the Dwelling; (ii) any vinyl flooring or floor tiles that may be encountered in the Dwelling; (iii) electrical and mechanical components and insulators (including heat shields), such as wiring and gaskets inside electrical panels, electronic and/or mechanical equipment.

3.2 Polychlorinated Biphenyls (PCBs)

General

PCBs are commonly associated with dielectric fluids within electrical equipment such as transformers, fluorescent light ballasts and capacitors manufactured in Canada prior to approximately 1980. The federal Environment Contaminants Act (1976) prohibited the use of PCBs in heat transfer equipment installed after September 1, 1977 and in transformers and capacitors installed after July 1, 1980.

PCB containing equipment is considered hazardous waste upon removal for the purpose of disposal. PCB wastes were previously regulated by the federal Storage of PCB Material Regulations (SOR/92-507) under the Canadian Environmental Protection Act and the provincial Storage of PCB Waste Regulations, 2003 under the Environmental Protection Act. The Storage of PCB Material Regulations have been repealed by new PCB Regulations (SOR/2008-273).

Assessment

Fluorescent light ballasts were identified in the equipment building and the dwelling. Due to

the age of the site infrastructure, PCB containing light ballasts are potentially present in fluorescent light fixtures.

Two (2) paint samples was submitted for PCB analysis (interior paint samples from the equipment building and dwelling). For the paint samples submitted for analysis, the laboratory returned a non-detect concentration of PCBs in paint (see Table 2).

Table 2: Summary of Paint Sampling - PCBS

Building	Sample ID	Description and Condition	Location	Total PCB Concentration (mg/kg)
Equipment Building	P-1	White/grey paint - poor condition	Interior wall paint	<5 mg/kg
Dwelling	P-5	White paint – poor condition	Interior wall paint	<5 mg/kg

3.3 Lead

General

There are no provincial guidelines available to regulate the concentration of lead in paint. In 1976, the Hazardous Materials Product Act – Liquid Coating established the maximum acceptable limit for amount of lead in interior paint at 0.5% (equivalent to 5000 mg/kg). An industry agreement excluded it from exterior paint in 1990. Subsequent to this, the Surface Coating Materials Regulations were promulgated (in 2005), reducing the allowable lead content of paints to 0.06% (600 mg/kg). This level was later reduced in 2009 to 0.009% (90 mg/kg).

Samples in excess of 5000 mg/kg of lead are subject to leachate extraction analysis. The Transportation of Dangerous Goods (TDG) Regulations, the Export and Import of Hazardous Waste and Hazardous Recyclable Materials (EIHW&HRM) Regulations apply to material with a lead leachate concentration in excess of 5mg/L, and therefore require regulated disposal.

Assessment

Paint samples for lead 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 and approximately 5g of paint was obtained at each sampling location. Samples were collected from the Dwelling at the following locations:

- the interior walls of the equipment building;
- the exterior walls of the winch house/shed;

- the exterior painted siding material and wood trims of the dwelling (paint chip sample as well as bulk sample of the siding itself); and
- the interior wall of the dwelling.

The results of the analysis are included in Table 3.

Table 3: Summary of Paint Sampling – Lead

Building	Sample ID	Description and Condition	Location	Lead Concentration (mg/kg)
Equipment Building	P-1	White/grey paint - poor condition	Interior wall paint	4,700 mg/kg Leachate = 0.57 mg/L
Winchhouse	P-2	White Paint – poor condition	Exterior siding	82 mg/kg Leachate = 0.078 mg/L
Dwelling	P-3	White paint – poor condition	Exterior siding (paint chips)	**110,000 mg/kg** **Leachate = 270 mg/L**
Dwelling	P-4	White paint – poor condition	Exterior siding (siding itself)	**38,000 mg/kg** **Leachate = 60 mg/L**
Dwelling	P-5	White paint – poor condition	Interior wall paint	**8,200 mg/kg** **Leachate = 9.9 mg/L**

* Shading indicates concentrations exceed guidelines

Notes:

1. Surface Coating Materials Regulations (2005) for lead in paint is 600 mg/kg. Samples in excess of 5,000 mg/kg were submitted for leachate analysis. The TDG and EIHW&HRM regulations for lead in leachate is 5 mg/L.
2. Bold and shading indicate levels of lead leachate > 5 mg/L.

As noted in Table 3, the interior walls, exterior siding (paint chips and siding itself) of the Dwelling contained lead leachate concentrations exceeding the landfill disposal guideline of 5mg/L. The paint samples collected from the equipment building and the winchhouse indicated that the painted surfaces associated with these structures can be transported and disposed of as “non-hazardous” waste.

3.4 Mercury

General

There are no provincial guidelines available to regulate the concentration of mercury in paint. The management of mercury is regulated under the Surface Coating Materials Regulations, 2005 under the Hazardous Products Act (0.001% or 10 mg/kg) to determine the maximum acceptable concentration of mercury in paint. For comparison purposes, the 2006 Canadian Council of Ministers of the Environment Canadian Environmental Quality Guidelines (CCME-CEQG) for mercury in soil at commercial sites have been used (24 mg/kg).

Samples in excess of 24 mg/kg (commercial) of mercury are subject to leachate extraction analysis. The Transportation of Dangerous Goods Regulations, the Export and Import of Hazardous Waste and Hazardous Recyclable Materials Regulations apply to material with a mercury leachate concentration in excess of 0.1mg/L, and therefore require regulated disposal.

Assessment

Two (2) paint samples were collected for mercury analysis (interior wall paint samples in the equipment building and the dwelling). The samples were collected by cutting and scraping the area of flaking paint using a clean knife and scraper. The samples were collected down to bare substrate and approximately 5g of paint was obtained. The results of the analysis is included in Table 4.

Table 4: Summary of Paint Sampling –Mercury

Building	Sample ID	Description and Condition	Location	Mercury Concentration (mg/kg)
Equipment Building	P-1	White/grey paint - poor condition	Interior wall paint	12 mg/kg Leachate = 0.005 mg/L
Dwelling	P-5	White paint – poor condition	Interior wall paint	<1 mg/kg Leachate = <0.00013 mg/L

* Shading indicates concentrations exceed guidelines

Notes:

1. Surface Coating Materials Regulations for mercury is 10 mg/kg. Samples in excess of the CCME-CEQG of 24 mg/kg were submitted for leachate analysis and then compared to the TDG and EIHW & HRM regulation of 0.1 mg/L.
2. Bold and shading indicate levels of mercury leachate > 0.1 mg/L.

As noted in Table 4, both paint samples contained mercury leachate levels less than 0.1 mg/L.

3.5 Ozone Depleting Substances (ODSs)

General

Ozone depleting substances are regulated under the provincial Halocarbon Regulations, 2005 under the Environmental Protection Act and the Ozone-depleting Substances Regulations, 1998 under the Canadian Environmental Protection Act, 1999. The federal regulations were amended in 2001, 2002 and 2004. The Federal Halocarbon Regulations 2003 under the Canadian Environmental Protection Act, 1999 applies to refrigeration and air-conditioning systems on federal government properties. Halocarbon containing equipment should be serviced, charged, and/or properly disposed of by a licensed contractor. An equipment service log should be maintained for each piece of equipment. Halocarbon containing equipment with a capacity greater than 19 kW requires an annual leak testing.

Assessment

The basement of the Dwelling was not accessible at the time of the investigation as there was approximately 900mm of water covering the floor. It is anticipated that typical household freezers are present in the basement. In addition, several fire extinguishers are expected to be present in the four (4) Site structures. All equipment containing potential ozone depleting substances (ODSs) should be removed by an approved contractor prior to disposal (in accordance with the most recent NL Halocarbon Regulations and the Federal Halocarbon Regulations).

3.6 Mould

General

There are currently no regulations in Canada related specifically to mould in buildings. There have been no exposure limits established for concentrations of mould in air. However, a safe work environment is mandated in Canada by federal and provincial occupational health and safety acts and related regulations. In addition, Health Canada outlines investigation methods and guidelines for mould in private and public buildings:

- "Residential Indoor Air Quality Guidelines: Moulds", Health Canada, 2007;

- "Fungal Contamination in Public Buildings: Health Effects and Investigation Methods", Health Canada, 2004; and
- "Indoor Air Quality in Office Buildings: A Technical Guide", Health Canada, Report of the Federal-Provincial Advisory Committee on Environmental and Occupational Health, 1995.

There are numerous resources for the investigation and remediation of mould. The following documents provide procedures for remediation of mould in buildings:

- "Mould Guidelines for the Canadian Construction Industry", Canadian Construction Association, 2004;
- "Fighting Mould – The Homeowners Guide", Canada Mortgage and Housing Corporation (CMHC), 2007; and
- "Should You Test the Air in Your Home for Mould?", CMHC, 2006.

Assessment

Water damage and visible evidence of mould stained surfaces were noted throughout the Dwelling and the Equipment Building. Mould should be assumed to be present in all four (4) structures (on walls, furniture, flooring, ceilings) and workers should don proper PPE during future demolition activities.

3.7 Urea Formaldehyde Foam Insulation

General

UFFI was developed in Europe in the 1950s. It was used in Canada, primarily between 1977 and 1980, when it was banned from use under the federal Hazardous Products Act. To produce the urea formaldehyde foam, excess formaldehyde is added to the urea to ensure complete curing during the insulation process. Excess formaldehyde was given off within one to two days of injection during the curing process. If exposed to water or moisture, the UFFI may start to deteriorate, resulting in a release of formaldehyde gas.

Assessment

There was no evidence noted in the current investigation, to suggest that UFFI is present at this Site. In this regard, no potential UFFI samples were collected.

3.8 Other

Other observations recorded on the day of the Site investigation included:

- 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. It is noted that the concrete foundations are anticipated to remain as part of DFO's current plans for demolition at this site. The chimney is planned to be demolished, and remain on site.

- Ash is expected to be present inside the brick chimney in the Dwelling basement. Solid wastes such as ash from chimneys or furnaces may contain heavy metals, PAHs and/or fuel oil components. It is understood that the chimney will be demolished and left on Site, however small quantities of ash should be drummed-up and disposed as hazardous waste (unless subsequent leachate testing of the ash defines the material as "non-hazardous").

- Creosote timbers are present in the slipway and beneath the shed, located on the northwest end of the site.

4.0 Conclusions and Recommendations

A summary of the findings is included below:

- Asbestos containing materials (ACMs) were not confirmed during the sampling program. All four (4) samples submitted for analysis returned concentrations of asbestos less than 1% by weight. Due to the age of the site however, there is potential for ACMs to exist in the building infrastructure. In the absence of further sampling, ACMs should be assumed to be present in: (i) the underlay roofing compound and mastic material around the vent pipes/chimney stack on the roof of the Dwelling; (ii) any vinyl flooring or floor tiles that may be encountered in the Dwelling; (iii) electrical and mechanical components and insulators such as wiring and gaskets inside electrical panels, electronic and/or mechanical equipment. Materials suspected of containing ACMs will have to be removed by a qualified asbestos abatement contractor, prior to building demolition.

- ACMs were not identified in the gypsum board joint compound sample collected from the Equipment Building. Since the presence of asbestos in joint compound can be variable, demolition Contractors should be made aware of this potential hazard. During

future demolition, subsequent analysis of suspect areas where ACMs in joint compound may exist, should be completed using a <0.25 point count after "ashing" the sample (this process is more effective in ensuring materials such as gypsum crystals do not get counted as asbestos fibres).

- Water damage and visible evidence of mould stained surfaces were noted throughout the Dwelling and Equipment Building. Mould should be assumed to be present in all four (4) structures (on walls, furniture, flooring, ceilings) and workers should don proper PPE during future demolition activities.

- Fluorescent light fixtures were observed in the Equipment Building and Dwelling. An inspection of the ballasts was not carried out during the investigation, and in this regard all fluorescent light ballasts should be treated as "potential PCBs". A total of six (6) potential PCB containing light ballasts should be assumed to be present in the four (4) Site structures. All potential PCB containing light ballasts should be transported and disposed of by a registered hazardous waste transporter in accordance with applicable regulations.

- All equipment containing potential ozone depleting substances (ODSs) should be removed by an approved contractor prior to disposal (in accordance with the most recent NL Halocarbon Regulations and the Federal Halocarbon Regulations). The basement of the Dwelling was not accessible (due to 900mm of water covering the floor), however typical freezer units are expected to be present in the basement. In addition, several fire extinguishers are expected to be present in the four (4) Site structures.

- Silica is expected to be present in concrete structures, brick and mortar at the Site. Precautions should be taken to prevent/reduce exposure to silica dust during any disturbance/demolition of silica-containing products. It is noted that the concrete foundations are anticipated to remain as part of DFO's current plans for demolition at this Site. The Dwelling chimney is planned to be demolished, and remain on site.

- Ash is expected to be present inside the brick chimney in the Dwelling basement. Solid wastes such as ash from chimneys or furnaces may contain heavy metals, PAHs and/or fuel oil components. It is understood that the Dwelling chimney will be demolished and left on Site, however small quantities of ash should be drummed-up and disposed as hazardous waste (unless subsequent leachate testing of the ash defines the material as "non-hazardous").

- Lead based paint is present in the four (4) Site structures (on interior surfaces and exterior building materials). Precautions should be taken during any disturbance of painted surfaces to reduce occupational exposure to lead.

- Leachate testing indicates that the painted surfaces associated with the equipment building and winchhouse are “non-leachable” and can be disposed of as “non-hazardous” waste.

- The exterior siding (paint chips and siding itself), of the Dwelling is leachable and should be treated as hazardous waste for the purposes of transportation and disposal (loose/flaking paint associated with the siding should be removed using manual scraping techniques prior to removal of the siding).

- Interior painted surfaces of the dwelling contain lead leachate concentrations greater than the landfill disposal guideline of 5mg/L and in this regard, any loose/flaking paint should be removed from the wall surface, placed in drums, and disposed of as hazardous waste. The gypsum board walls themselves are likely non-leachable for lead and can be disposed of as “non-hazardous waste” once the flaking/peeling paint has been removed.

- Creosote timbers are present in the slipway and beneath the shed on the northwest end of the Site. In the absence of sampling, the timbers should be transported and disposed of as “hazardous” waste.

5.0 Limitations

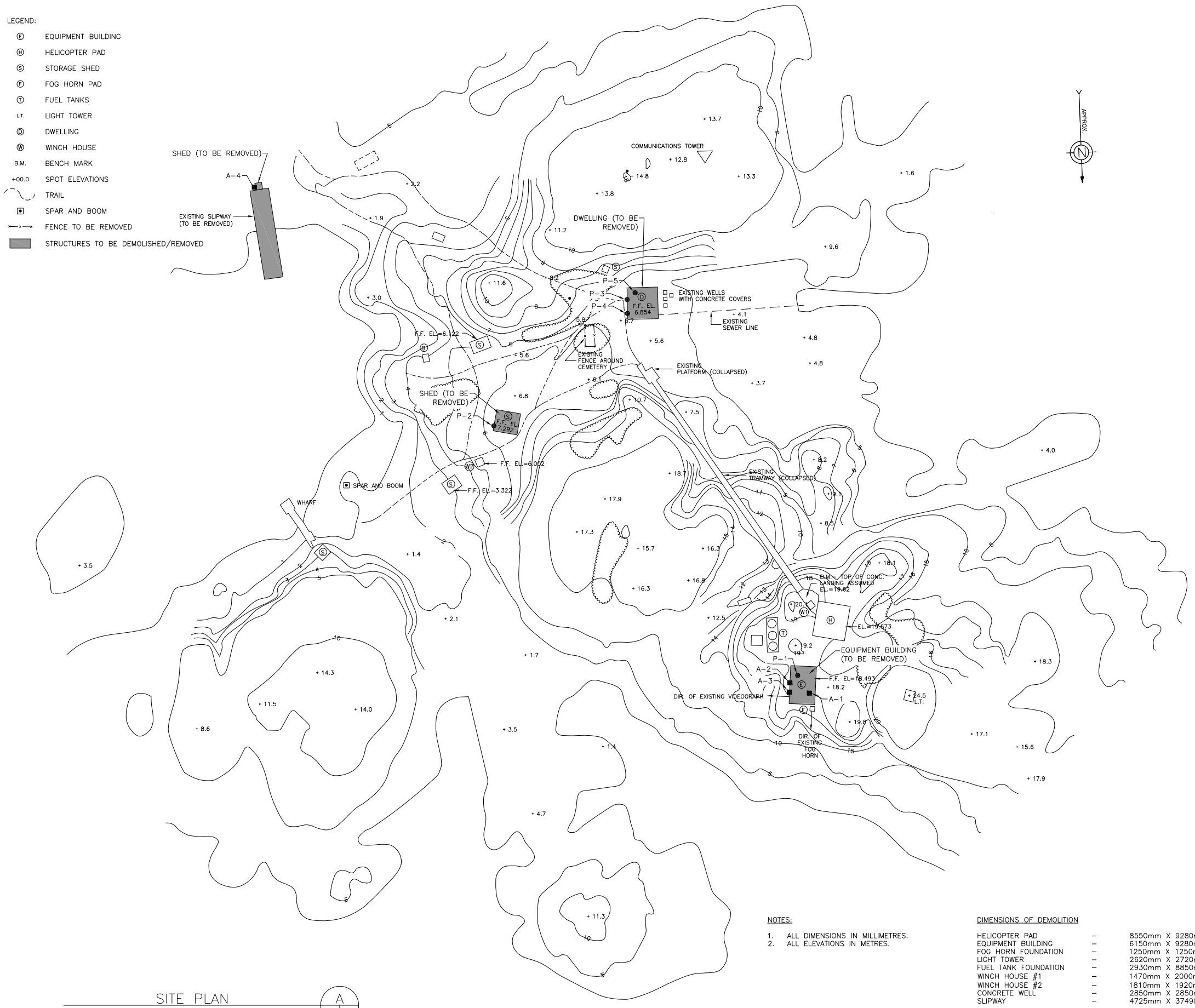
This report was prepared exclusively for the purposes, project and Site location outlined in the report. The report is based on information provided to, or obtained by AFN Engineering Inc. ("AFN") as indicated in the report, and applies solely to Site conditions existing at the time of the Site investigation. Although a reasonable investigation was conducted by AFN, AFN's investigation was by no means exhaustive and can not be construed as a certification of the absence of any contaminants from the Site. Rather, AFN's report represents a reasonable review of available information within an agreed work scope, schedule and budget. It is therefore possible that currently unrecognized contamination or potentially hazardous materials may exist at the Site, and that the levels of contamination or hazardous materials may vary across the Site. Further review and updating of the report may be required as local and Site conditions, and the regulatory and planning frameworks, change over time.

This report was prepared by AFN for the sole benefit of our Client (DFO). The material in the report reflects AFN's judgment in light of the information available to AFN at the time of preparation. Any use which a third party (eg., a party other than our Client) makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. AFN accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Appendix A
Figures

LEGEND:

- Ⓔ EQUIPMENT BUILDING
- Ⓗ HELICOPTER PAD
- Ⓢ STORAGE SHED
- Ⓕ FOG HORN PAD
- Ⓣ FUEL TANKS
- L.T. LIGHT TOWER
- Ⓓ DWELLING
- Ⓦ WINCH HOUSE
- B.M. BENCH MARK
- +00.0 SPOT ELEVATIONS
- TRAIL
- SPAR AND BOOM
- FENCE TO BE REMOVED
- STRUCTURES TO BE DEMOLISHED/REMOVED



SITE PLAN

SCALE: 1:500

0m 10m 20m 30m 40m 50m

A 1 | 1

NOTES:

1. ALL DIMENSIONS IN MILLIMETRES.
2. ALL ELEVATIONS IN METRES.

DIMENSIONS OF DEMOLITION

HELICOPTER PAD	–	8550mm X 9280mm
EQUIPMENT BUILDING	–	6150mm X 9280mm
FOG HORN FOUNDATION	–	1250mm X 1250mm
LIGHT TOWER	–	2620mm X 2720mm
FUEL TANK FOUNDATION	–	2930mm X 8850mm
WINCH HOUSE #1	–	1470mm X 2000mm
WINCH HOUSE #2	–	1810mm X 1920mm
CONCRETE WELL	–	2850mm X 2850mm
SLIPWAY	–	4725mm X 37490mm

Project – projet

DEMOLITION PROJECT
HARBOUR ISLAND ("PENGUIN ISLAND")
LIGHTSTATION, NL

Drawing – dessin

SAMPLE LOCATION PLAN

Appendix B
Photographs

Showing equipment building

Interior of equipment building

Showing Dwelling

Interior of Dwelling

Interior of Dwelling

Interior of Dwelling

Winchhouse

Interior of winchhouse

Shed at Slipway Site

Creosote timber used in slipway

Appendix C
Laboratory Certificates

Your Project #: 5-561-A-PENGUIN
Site Location: PENGUIN ISLAND
Your C.O.C. #: 5-651-A-Penguin

Attention:Neil Hunt

AFN Engineering Inc
29 Brad Gushue Crescent
St. John's, NL
A1H 0A3

Report Date: 2014/10/01

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B4H8791
Received: 2014/09/26, 10:15

Sample Matrix: Paint
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Asbestos (1)	4	N/A	2014/10/01	SYD SOP-00174	Based on NIOSH9002
Mercury - Total in Leachate (CVAA,LL) (2)	2	2014/09/30	2014/10/01	ATL SOP 00026	EPA 245.1 R3 m
Metals Leach TCLP/CGSB extraction (2)	5	2014/09/30	2014/10/01	ATL SOP 00058	EPA 6020A R1 m
Metals Paint Acid Extr. ICPMS (2)	4	2014/09/30	2014/09/30	ATL SOP 00058	EPA 6020A R1 m
Metals Paint Acid Extr. ICPMS (2)	1	2014/09/30	2014/10/01	ATL SOP 00058	EPA 6020A R1 m
PCBs in Paint by GC/ECD (2)	2	2014/09/29	2014/10/01		EPA 8082 m
PCB Aroclor sum (paint) (2)	2	N/A	2014/10/01		Auto Calc.
TCLP Inorganic extraction - pH (2)	5	N/A	2014/09/30	ATL SOP 00035	EPA 1311 m
TCLP Inorganic extraction - Weight (2)	5	N/A	2014/09/30	ATL SOP 00035	EPA 1311 m

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

(1) This test was performed by Maxxam Sydney
(2) This test was performed by Maxxam Bedford

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Avery Withrow, Project Manager
Email: AWithrow@maxxam.ca
Phone# (902)420-0203 Ext:233

==========

This report has been generated and distributed using a secure automated process.
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 Job #: B4H8791
Report Date: 2014/10/01

AFN Engineering Inc
Client Project #: 5-561-A-PENGUIN
Site Location: PENGUIN ISLAND
Sampler Initials: NH

ATLANTIC TCLP LEACHATE + LEAD (PAINT)

Maxxam ID		XS9009	XS9010		XS9011		XS9012		
Sampling Date		2014/09/23	2014/09/23		2014/09/23		2014/09/23		
COC Number		5-651-A-Penguin	5-651-A-Penguin		5-651-A-Penguin		5-651-A-Penguin		
	Units	**P1**	**P2**	**RDL**	**P3**	**RDL**	**P4**	**RDL**	**QC Batch**
Inorganics									
Sample Weight (as received)	g	50	50	N/A	50	N/A	50	N/A	3766977
Initial pH	N/A	8.5	4.7		6.7		7.1		3766978
Final pH	N/A	6.1	4.9		5.1		5.1		3766978
Metals									
Leachable Lead (Pb)	ug/L	570	78	5.0	270000	50	60000	5.0	3767116

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

Maxxam ID		XS9013		
Sampling Date		2014/09/23		
COC Number		5-651-A-Penguin		
	Units	**P5**	**RDL**	**QC Batch**
Inorganics				
Sample Weight (as received)	g	50	N/A	3766977
Initial pH	N/A	6.8		3766978
Final pH	N/A	5.2		3766978
Metals				
Leachable Lead (Pb)	ug/L	9900	5.0	3767116

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

Maxxam Analytics International Corporation o/a Maxxam Analytics 49-55 Elizabeth Ave, Suite 101A, St.John's, NL, Canada A1A 1W9 Tel: 709-754-0203 Toll Free: 888-492-7227 Fax: 709-754-8612 www.maxxamanalytics.com

Maxxam Job #: B4H8791
Report Date: 2014/10/01

AFN Engineering Inc
Client Project #: 5-561-A-PENGUIN
Site Location: PENGUIN ISLAND
Sampler Initials: NH

RESULTS OF ANALYSES OF PAINT

Maxxam ID		XS9014	XS9015	XS9016	XS9017		
Sampling Date		2014/09/23	2014/09/23	2014/09/23	2014/09/23		
COC Number		5-651-A-Penguin	5-651-A-Penguin	5-651-A-Penguin	5-651-A-Penguin		
	Units	**A1**	**A2**	**A3**	**A4**	**RDL**	**QC Batch**
Inorganics							
Asbestos	%	<1.0	<1.0	<1.0	<1.0	1.0	3768868
Chrysotile Asbestos	%	<1.0	<1.0	<1.0	<1.0	1.0	3768868
Amosite Asbestos	%	<1.0	<1.0	<1.0	<1.0	1.0	3768868
Crocidolite Asbestos	%	<1.0	<1.0	<1.0	<1.0	1.0	3768868
Tremolite Asbestos	%	<1.0	<1.0	<1.0	<1.0	1.0	3768868
Cellulose	%	(5-10)	<1.0	<1.0	<1.0	1.0	3768868
Mineral Wool	%	<1.0	<1.0	<1.0	<1.0	1.0	3768868
Glass Fibres	%	<1.0	<1.0	<1.0	<1.0	1.0	3768868
Hair	%	<1.0	<1.0	<1.0	<1.0	1.0	3768868
Miscellaneous Fibres	%	<1.0	<1.0	<1.0	<1.0	1.0	3768868

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 49-55 Elizabeth Ave, Suite 101A, St.John's, NL, Canada A1A 1W9 Tel: 709-754-0203 Toll Free: 888-492-7227 Fax: 709-754-8612 www.maxxamanalytics.com

Maxxam Job #: B4H8791
Report Date: 2014/10/01

AFN Engineering Inc
Client Project #: 5-561-A-PENGUIN
Site Location: PENGUIN ISLAND
Sampler Initials: NH

MERCURY BY COLD VAPOUR AA (PAINT)

Maxxam ID		XS9009	XS9013		
Sampling Date		2014/09/23	2014/09/23		
COC Number		5-651-A-Penguin	5-651-A-Penguin		
	Units	**P1**	**P5**	**RDL**	**QC Batch**
Metals					
Leachable Mercury (Hg)	ug/L	5.0 (1)	<0.13 (1)	0.13	3768692

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated RDL due to sample matrix.

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AFN Engineering Inc
Client Project #: 5-561-A-PENGUIN
Site Location: PENGUIN ISLAND
Sampler Initials: NH

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		XS9009	XS9010		XS9011		XS9012		
Sampling Date		2014/09/23	2014/09/23		2014/09/23		2014/09/23		
COC Number		5-651-A-Penguin	5-651-A-Penguin		5-651-A-Penguin		5-651-A-Penguin		
	Units	**P1**	**P2**	**RDL**	**P3**	**RDL**	**P4**	**RDL**	**QC Batch**
Metals									
Acid Extractable Lead (Pb)	mg/kg	4700	82	5.0	110000	50	38000	5.0	3766946
Acid Extractable Mercury (Hg)	mg/kg	12		1.0				1.0	3766946

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		XS9013		
Sampling Date		2014/09/23		
COC Number		5-651-A-Penguin		
	Units	**P5**	**RDL**	**QC Batch**
Metals				
Acid Extractable Lead (Pb)	mg/kg	8200	5.0	3766946
Acid Extractable Mercury (Hg)	mg/kg	<1.0	1.0	3766946

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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POLYCHLORINATED BIPHENYLS BY GC-ECD (PAINT)

Maxxam ID		XS9009	XS9013		
Sampling Date		2014/09/23	2014/09/23		
COC Number		5-651-A-Penguin	5-651-A-Penguin		
	Units	**P1**	**P5**	**RDL**	**QC Batch**
PCBs					
Aroclor 1016	mg/kg	<5.0	<5.0	5.0	3766225
Aroclor 1221	mg/kg	<5.0	<5.0	5.0	3766225
Aroclor 1232	mg/kg	<5.0	<5.0	5.0	3766225
Aroclor 1248	mg/kg	<5.0	<5.0	5.0	3766225
Aroclor 1242	mg/kg	<5.0	<5.0	5.0	3766225
Aroclor 1254	mg/kg	<5.0	<5.0	5.0	3766225
Aroclor 1260	mg/kg	<5.0	<5.0	5.0	3766225
Calculated Total PCB	mg/kg	<5.0	<5.0	5.0	3763880
Surrogate Recovery (%)					
Decachlorobiphenyl	%	37	28 (1)		3766225

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

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GENERAL COMMENTS

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

Package 1	21.9°C

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 (QC) samples were analyzed, however certain QA/QC elements may be unavailable, as noted:

1) Calculations of Method Detection Limit (MDL) as per CFR 40 (Part 136)
2) Accuracy and precision study
3) External performance evaluation study

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3766225	LGE	Matrix Spike [XS9009-01]	Decachlorobiphenyl	2014/10/01		34	%	30 - 130
			Aroclor 1254	2014/10/01		52	%	N/A
3766225	LGE	Spiked Blank	Decachlorobiphenyl	2014/10/01		78	%	30 - 130
			Aroclor 1254	2014/10/01		108	%	N/A
3766225	LGE	Method Blank	Decachlorobiphenyl	2014/10/01		84	%	30 - 130
			Aroclor 1016	2014/10/01	<5.0		mg/kg	
			Aroclor 1221	2014/10/01	<5.0		mg/kg	
			Aroclor 1232	2014/10/01	<5.0		mg/kg	
			Aroclor 1248	2014/10/01	<5.0		mg/kg	
			Aroclor 1242	2014/10/01	<5.0		mg/kg	
			Aroclor 1254	2014/10/01	<5.0		mg/kg	
			Aroclor 1260	2014/10/01	<5.0		mg/kg	
3766225	LGE	RPD [XS9009-01]	Aroclor 1016	2014/10/01	NC		%	50
			Aroclor 1221	2014/10/01	NC		%	50
			Aroclor 1232	2014/10/01	NC		%	50
			Aroclor 1248	2014/10/01	NC		%	50
			Aroclor 1242	2014/10/01	NC		%	50
			Aroclor 1254	2014/10/01	NC		%	50
			Aroclor 1260	2014/10/01	NC		%	50
3766946	DLB	Matrix Spike	Acid Extractable Lead (Pb)	2014/09/30		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2014/09/30		111	%	75 - 125
3766946	DLB	Spiked Blank	Acid Extractable Lead (Pb)	2014/09/30		99	%	75 - 125
			Acid Extractable Mercury (Hg)	2014/09/30		95	%	75 - 125
3766946	DLB	Method Blank	Acid Extractable Lead (Pb)	2014/09/30	<5.0		mg/kg	
			Acid Extractable Mercury (Hg)	2014/09/30	<1.0		mg/kg	
3766946	DLB	RPD	Acid Extractable Lead (Pb)	2014/09/30	13		%	35
3766977	GDX	RPD [XS9012-01]	Sample Weight (as received)	2014/09/30	0		%	N/A
3767116	DLB	Matrix Spike [XS9012-01]	Leachable Lead (Pb)	2014/10/01		NC	%	75 - 125
3767116	DLB	Spiked Blank	Leachable Lead (Pb)	2014/10/01		101	%	80 - 120
3767116	DLB	Method Blank	Leachable Lead (Pb)	2014/10/01	<5.0		ug/L	
3767116	DLB	RPD [XS9012-01]	Leachable Lead (Pb)	2014/10/01	5.7		%	35
3768692	ALG	Matrix Spike [XS9013-01]	Leachable Mercury (Hg)	2014/10/01		NC	%	80 - 120
3768692	ALG	Leachate Blank	Leachable Mercury (Hg)	2014/10/01	<0.013		ug/L	
3768692	ALG	Spiked Blank	Leachable Mercury (Hg)	2014/10/01		104	%	80 - 120
3768692	ALG	Method Blank	Leachable Mercury (Hg)	2014/10/01	<0.013		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3768692	ALG	RPD [XS9009-01]	Leachable Mercury (Hg)	2014/10/01	4.1 (1)		%	20

N/A = Not Applicable

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.

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

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 too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

(1) Elevated RDL due to sample matrix.

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VALIDATION SIGNATURE PAGE

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

Jim King, Inorganics Manager, Bedford

Michelle Mombourquette, Laboratory Manager

Mike MacGillivray, Scientific Specialist (Inorganics)

Rose MacDonald, Scientific Specialist (Organics)

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.

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Appendix B: General Pictures


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